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Role of Social Media in Creating Awareness during COVID-19 Pandemic

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ABSTRACT

Social media (SM) applications have played a critical role for the rapid dissemination of information during the COVID-19 pandemic. Limited insight is provided into the main reliable SM source for information and awareness about the pandemic. This study examines the role of SM applications in creating awareness during the pandemic in Saudi Arabia. The study used a quantitative approach and distributed an online questionnaire via SM platforms during October 2020 and received 343 valid responses from university students, healthcare professionals, and the public. Findings showed that despite the wide use of SM applications, the MOH website was the main source of information relied upon during the pandemic. Gender differences were found on the reliance of SM platforms for information. Developing SM policies and best-practice guidelines are necessary to better perceive SM applications as effective public health educational sources and awareness channels during crises.

Keywords: Social Media, COVID-19, Coronavirus, Pandemic, Awareness, Ministry of Health

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INTRODUCTION

The wide development and emergence of social media (SM) applications during the last decade has played a critical role in sharing information. Examples of such SM applications are Facebook, Instagram, LinkedIn, Twitter, Telegram, YouTube, and WhatsApp. Each SM application has its own characteristics and limitations of the type of media being shared in forms of video, photo or text. The current number of SM users worldwide are 3.6 billion, which is increasing dramatically and expected to reach 4.41 billion by 2050 (Clement, 2020). SM contributes actively to marketing, sport, technology, healthcare, education, activism and social awareness. On the other hand, SM has dark sides, such as addiction, mental illness, information misleading, cyberbullying, and hacking (Nirajan, 2020).

Among Middle Eastern countries, Saudi Arabia, a country with a population of 34.54 million, recorded 25 million (72.38%) active SM users in January 2020. This number increased by 2.0 million (+8.7%) between April 2019 and January 2020 (Kemp, 2020). According to recent national statistics (2020), more than 70% of the population are actively using SM due to the high rate (92%) of smartphone ownership. Saudi Arabia is one of the biggest national markets for SM, and people are spending on average, three hours daily on SM. The majority of SM users are accessing YouTube (76%), followed by WhatsApp (71%), Instagram (65%), Twitter (58%), and Snapchat (45%) (Kemp, 2020).

Social media users become more active during any event worldwide such as Arab spring and COVID-19 pandemic crisis and during Middle East Respiratory Syndrome (MERS-CoV) attack. 2015, a cross-sectional study was conducted in the Gulf countries and target 2741 individuals to check public awareness during the MERS-CoV attack. The study shows that 37% of Saudi people accessing social media platforms, and 20% of them access the MOH website as sources to obtain knowledge about MERS-CoV (Alqahtani *et al.*, 2017).

The widespread use of SM enhanced awareness among health information seekers. Al-Dmour *et al.* (2020) found that the use of SM applications had substantial, positive influence on public health protection against COVID-19. Another study on the safety practices during COVID-19 pandemic in the city of Riyadh, Alahdal *et al.*, (2020) found that that 58% of the participants had a moderate level of awareness. On the dark side, some SM can disseminate misleading or false information (Kaicker *et al.*, 2013). While the quantity of online health information is huge, some information is not trustworthy (Tonsaker, Bartlett & Trpkov, 2014). Misinformation compromises the health care quality, threatens public safety, and increases panic among patients. Therefore, it is critical that the public accesses credible health-information. The use of SM platforms has dramatically increased during the COVID-19 pandemic. The SM usage among adults in United States increased by 50% (Samet, 2020). A global study about the use of SM during Coronavirus pandemic found that more than 35 % of the SM users in the United States, Italy and Germany were searching for updated coronavirus news on at least daily basis (Watson, 2020).

There is limited insight into the main reliable SM source for information and awareness during COVID-19 pandemic. As health information dominates the Internet, particularly the social networking sites, it is important that reliable information is disseminated through verified sources. Otherwise, false, divergent, or contradicted information can be circulated, raising uncertainty and fear in the community.

In this study, we raised three research questions on the role of SM during the pandemic: 1) What is the main SM source for COVID-19 information?, 2) What is the extent of SM attitudes during the pandemic?, and 3) What is the extent of reliance on SM in the population?

RESEARCH METHODOLOGY

This is a cross-sectional study based on a questionnaire asking participants about their main SM source for information during the COVID-19 pandemic, their SM attitudes, and their most relied SM source for COVID-19 awareness. The questionnaire had four sections described in further detail below (see the Appendix). It was reviewed for face and content validity by four academic experts, and then piloted among twelve participants to ensure clarity. The questionnaire was then distributed online during the four weeks of October, 2020, via an invitation message with the questionnaire link across different social media platforms, such as Facebook, Twitter, and WhatsApp. The targeted sample population was composed of adults aged 18 years or above. A convenient random sample of 343 participants answered the questionnaire.

Section A of the questionnaire collected demographic data: age, sex/gender, education level, and geographic location. Section B collected COVID-19-related questions, such as being worried to be infected, self-isolation due suspicion of being infected, and being diagnosed with a positive COVID-19 infection. Section C collected data about the extent of SM attitudes. Section D collected questions about the extent of reliance on different SM sources. A five-point Likert scale that ranged from 'always=5' to 'never=0' was used, which was converted to a mean score for analysis. Participants consent was implied by completion of all questionnaire items. The data collected were analysed using the Statistical Package for Social Sciences (SPSS) software via a descriptive analytical approach. The proportion of participant nominal groups were compared using chi-square test. As the data showed normal distribution, ANOVA test was used to compare the mean across the three groups: university students, healthcare professionals (HCP), and non-healthcare professionals (Non-HCP). Bonferroni post-hoc correction was applied to pinpoint the pairs of means that were different. P-value of 0.05 was considered significant.

RESULTS

Table.1 shows that the data were collected from 343 participants. More than 81% of the participants were females and 19% were males. The mean age was 34.45 ± 9.9 years (ranged 18–62), and 84.5% lived in the Eastern Province of Saudi Arabia. More than half the sample had higher education studies with either a bachelor (42.6%) or a graduate degree (11.1%). About 21% of the participants were university students, 30.0% were HCP, and 49% were non-HCP. Across many SM sources, the Ministry of Health (MOH) website was the highest perceived source for COVID-19 related information (54.2%), followed by Twitter (14.9%) and other sources (7.9%). More than half the sample were worried to be infected by COVID-19 (54.8%), and 47.8% isolated themselves for a period of 10.53 ± 8.1 days because they suspected to be infected by COVID 19. However, only 12.5% had positive disease diagnosis.

Table 1: Summary Statistics (N=343)

Study Data	Total Sample - N (%)
Sex/Gender	
Male	65 (19.0)
Female	278 (81.0)
Age in years, mean \pm SD	34.45 \pm 9.9
Education level	
Middle School or less	18 (5.2)
High School	69 (20.1)
Certificate or Diploma	72 (21.0)
Bachelor Degree	146 (42.6)
Graduate Studies	38 (11.1)
Geographic Region	
Eastern Province	290 (84.5)
Others	53 (15.5)
Participant Category	
University Student	71 (20.7)
Healthcare Professional	103 (30.0)
Non-Healthcare Professional	169 (49.3)
Where do you get most information about COVID-19?*	
Facebook	1 (0.3)
Instagram	26 (7.6)
Twitter	51 (14.9)
YouTube	8 (2.3)
WhatsApp	44 (12.8)
Ministry of Health website	186 (54.2)

Other sources [†]	27 (7.9)
Are you worried to be infected by COVID-19? (Yes)	188 (54.8)
Have you ever isolated yourself due to a suspicion of COVID-19 infection? (Yes)	164 (47.8)
Days spent in isolation, mean ± SD	10.53 ± 8.1
Have you been diagnosed with positive COVID-19? (Yes)	43 (12.5)

*Groups are mutually exclusive. Participants check only one option.

[†]Other sources e.g. family, peers, news, and medical journals.

Using ANOVA tests, Table 2 shows differences in COVID-19-related questions across groups of university students, HCP, and non-HCP. Non-HCP were the highest group to report that they were worried to be infected (46.3%), isolated themselves as a suspicion of infection (48.2%), and were positively diagnosed with COVID-19 (60.5%). Significant differences were observed in the most used source of information across groups ($P < 0.05$).

Table 2: COVID-19-related Questions across Participant Groups

Variables	University Students N=71	Healthcare Professional N=103	Non Healthcare Professional N=169	P-value
1. Are you worried to be infected by COVID-19? (Yes)	46 (24.5%)	55 (29.3%)	87 (46.3%)	0.15
2. Have you ever isolated yourself due to a suspicion of COVID-19 infection? (Yes)	32 (19.5%)	53 (32.3%)	79 (48.2%)	0.65
3. Days spent in isolation, mean ± SD	8.94 ± 6.1	9.02 ± 6.8	12.19 ± 9.3	0.04
4. Have you been diagnosed with positive COVID-19? (Yes)	4 (9.3%)	13 (30.2%)	26 (60.5%)	0.11
5. Where do you get most information about COVID-19?				
Facebook	0 (0.0%)	1 (100%)	0 (0.0%)	<0.00
Instagram	4 (15.4%)	2 (7.7%)	20 (76.9%)	
Twitter	20 (39.2%)	8 (15.7%)	23 (45.1%)	
YouTube	5 (62.5%)	3 (37.5%)	0 (0.0%)	
WhatsApp	10 (22.7%)	4 (9.1%)	30 (68.2%)	
Ministry of Health website	29 (15.6%)	77 (41.4%)	80 (43.0%)	
Other sources	3 (11.1%)	8 (29.6%)	16 (59.3%)	

Table 3 shows the extent of SM attitudes during COVID-19 pandemic. The statistics show the most dominant attitude was finding videos (mean SD 3.22 ± 0.79), followed by thinking that COVID-19 information on SM are important (2.65 ± 0.89), and applying the information received from SM media (2.36 ± 1.05)

Table 3: Social Media Attitudes during COVID-19 Pandemic among the Total Population (N=343) – N (%)

Attitudes	Never	Rarely	Sometimes	Often	Always	Mean ±SD
1. How often do you find videos, articles and blogs on social media talking about COVID-19?	1 (0.3%)	3 (0.9%)	62 (18.1%)	128 (37.3%)	149 (43.4%)	3.22 ± 0.79
2. How often do you follow pages, profile, vlogger or blogger providing information regarding COVID-19?	22 (6.4%)	53 (15.5%)	133 (38.8%)	94 (27.4%)	41 (12.0%)	2.23 ± 1.05
3. How often do you share content regarding COVID-19 through social media?	65 (19.0%)	96 (28.0%)	110 (32.1%)	46 (13.4%)	26 (7.6%)	1.62 ± 1.15
4. How often do you attend online lectures/symposium related to COVID-19 organized by professional organization?	155 (45.2%)	79 (23.0%)	74 (21.6%)	22 (6.4%)	13 (3.8%)	1.00 ± 1.12
5. How often do you think that information regarding COVID-19 on social media are important?	4 (1.2%)	25 (7.3%)	118 (34.4%)	134 (39.1%)	62 (18.1%)	2.65 ± 0.89

6. How often do you apply the information received from social media about COVID-19?	17 (5.0%)	51 (14.9%)	116 (33.8%)	109 (31.8%)	50 (14.6%)	2.36 ±1.05
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Table 4 shows that across the study groups, HCP were significantly higher than university students and non-HCP to share content and attending online lectures related to COVID-19 ($P < 0.00$).

Table 4: Social Media Attitudes during COVID-19 Pandemic across Participant Groups – Mean ±SD

Attitudes	University Students N=71	Healthcare Professionals N=103	Non-Healthcare Professionals N=169	ANOVA F-test	P-value
1. How often do you find videos, articles and blogs on social media talking about COVID-19?	3.29 ±0.76	3.26 ±0.75	3.17 ±0.82	0.69	0.49
2. How often do you follow pages, profile, vlogger or blogger providing information regarding COVID-19?	2.38 ±1.06	2.16 ±1.05	2.20 ±1.05	0.95	0.38
3. How often do you share content regarding COVID-19 through social media?	1.46 ±1.16	2.00 ±1.10	1.46 ±1.13	7.96	0.00
4. How often do you attend online lectures/symposium related to COVID-19 organized by professional organization?	0.87 ±1.19	1.67 ±1.14	0.65 ±0.88	32.30	0.00
5. How often do you think that information regarding COVID-19 on social media are important?	2.67 ± 0.95	2.66 ± 0.99	2.63 ± 0.81	0.06	0.94
6. How often do you apply the information received from social media about COVID-19?	2.39 ± 1.18	2.29 ± 1.07	2.39 ± 0.99	0.32	0.72

Table 5 shows the extent of reliance on COVID-19 related information disseminated in the social media. The statistics show the most dominant SM source relied upon among participants is the MOH website (mean SD 3.21 ±1.12), followed by WhatsApp (2.35 ±1.24), and Twitter (2.05 ±1.40). While 57.1% confirmed that they will always rely on MOH as a source of COVID-19 information, participants recorded that they will never rely on other sources such as Facebook (48.4%), Telegram (44.3%), or other sources (36.2%).

Table 5: Reliance on Social Media Sources for COVID-19 Awareness among the Total Population (N=343) – N (%)

Sources	Never	Rarely	Sometimes	Often	Always	Mean ±SD
Facebook	166 (48.4%)	125 (36.4%)	34 (9.9%)	10 (2.9%)	8 (2.3%)	0.74±0.91
Instagram	75 (21.9%)	84 (24.5%)	96 (28.0%)	53 (15.5%)	35 (10.2%)	1.67 ±1.25
Twitter	67 (19.5%)	60 (17.5%)	71 (20.7%)	77 (22.4%)	68 (19.8%)	2.05 ±1.40
YouTube	83 (24.2%)	81 (23.6%)	89 (25.9%)	67 (19.5%)	23 (6.7%)	1.60 ±1.23
Telegram	152 (44.3%)	117 (34.1%)	55 (16.0%)	11 (3.2%)	8 (2.3%)	0.85 ±0.96
WhatsApp	37 (10.8%)	40 (11.7%)	105 (30.6%)	87 (25.4%)	74 (21.6%)	2.35 ±1.24
MOH website	17 (5.0%)	13 (3.8%)	45 (13.1%)	72 (21.0%)	196 (57.1%)	3.21 ±1.12
Other sources	124 (36.2%)	81 (23.6%)	60 (17.5%)	37 (10.8%)	41 (12.0%)	1.38 ±1.37

Table 6 shows significant differences across the study groups on their SM reliance. Bonferroni post hoc test further revealed that healthcare professionals were significantly more likely to rely more on Telegram and the MOH website than non-healthcare professionals ($P < 0.02$). Both HCP and University Students were significantly more likely to rely on YouTube than Non-HCP ($p < 0.05$). Insignificant differences were found in the other SM sources, which indicated that all groups were similar in reliance on those applications.

Table 6: Reliance on Social Media Sources for COVID-19 Awareness across Participant Groups – Mean ±SD

Source	University Students N=71	Healthcare Professionals N=103	Non-Healthcare Professionals N=169	ANOVA F-test	P-value
Facebook	0.70 ±0.94	0.89 ±1.00	0.66 ±0.84	2.00	0.137
Instagram	1.56 ±1.28	1.58 ±1.15	1.78 ±1.30	1.16	0.315
Twitter	2.53 ±1.29	2.11 ±1.35	1.81 ±1.42	6.90	0.00*
YouTube	1.85 ±1.37	1.77 ±1.15	1.40 ±1.18	4.89	0.00*

Telegram	0.85 ± 0.98	1.04 ±1.01	0.72 ±0.89	3.62	0.02[†]
WhatsApp	2.15 ± 1.22	2.48 ±1.17	2.35 ±1.28	1.49	0.22
MOH website	3.36 ±1.08	3.38 ±1.07	3.04 ±1.14	3.82	0.02[†]
Other sources	1.67 ±1.48	1.43 ±1.33	1.23 ±1.34	2.66	0.07

[†]Post Hoc Bonferroni test showed that: Twitter: University Student and Non-HCP ($P=0.001$); YouTube: HCP and Non-HCP ($P=0.044$), University Student and Non-HCP ($P=0.025$); Telegram: HCP and Non-HCP ($P=0.28$); MOH website: HCP and Non-HCP ($P=0.044$).

Using t-test, Table 7 showed that males were significantly relying on Facebook, Twitter, and YouTube more than female. Both male and female participants rely equally on Instagram, Telegram, WhatsApp, MOH website, and other sources like family, peers, news, and medical journals.

Table 7: Reliance on Social Media Sources for COVID-19 Awareness gender

Source	Male	Female	P-value
Facebook	1.03±1.11	.67±.85	0.005
Instagram	1.61±1.23	1.69±1.26	0.665
Twitter	2.43±1.23	1.96±1.43	0.017
YouTube	1.98±1.26	1.52±1.20	0.006
Telegram	.87±.89	.84±.97	0.812
WhatsApp	2.38±1.24	2.34±1.24	0.819
MOH website	3.43±.82	3.16±1.17	0.086
Other sources	1.43±1.29	1.37±1.39	0.780

DISCUSSION

The aim of the study was to investigate the main source of COVID-19-related information and the extent of social media attitudes during the pandemic in Saudi Arabia. During the COVID-19 pandemic, social media platforms have been playing a critical role in the dissemination of safety information, sharing public experience, and providing scientific clinical findings of treatment protocols. As the nature of COVID-19 is evolving and changing, public sources of information about the pandemic can be differently used among people. Creating public awareness through reliable sources can reduce the risk of infection and improve the quality of life in the community (Alanezi *et al.*, 2020). Additionally, disseminating information that is convenient and understandable by the public is key to increase awareness (Basch *et al.*, 2020).

The present study found that more than 54% reported that the MOH website is the main source for pandemic-related information, and 57% confirmed that they will always rely on it for awareness. This finding was anticipated as the Saudi MOH was among the first countries to implement massive precautionary measures in the early pandemic stages, which exceptionally reduced the number of new COVID-19 cases in the country (Alumran, 2020). Saudi MOH took a strong and proactive public health presence on social media; policies related to public health (quarantine, hand hygiene, social distancing, wearing masks, and avoiding gatherings of more than 50 individuals) have been widely posted in the MOH website. During COVID-19 pandemic, community safety and health were the highest priority of the Ministry of Health. Thus, lots of efforts were exerted to increase public awareness with different languages through MOH official website and official social media accounts such as Twitter. On Twitter, MOH posted an awareness video on COVID-19 pandemic. This video explained the safe daily practice and lifestyle to prevent the spread of COVID-19. Such as the way and importance of wearing a face mask outside the home and avoiding handshakes and maintaining social physical distancing while greeting other people (MOH News, 2020).

Furthermore, MOH launched a new website namely, COVID-19 awareness (<https://COVID-19awareness.sa/>); it is the leading health awareness platform that includes the daily statistics report on COVID-19 cases and different COVID-19 related topics like the use of the 937 hotline and self-assessment methods. This platform monitors all COVID-19 information and news published on all social media platforms. Besides, MOH established COVID-19 dashboard and other mobile applications to guide the public and improve their awareness such as Tabaud, Tawakkalna, and Tatamman. Tabaud (<http://tabaud.sdaia.gov.sa>) is an Arabic word meaning “keep away”. That is, uninfected person is notified to keep away from an infected individual. The Tabaud database stores all individuals who were infected with COVID-19. The main goal to track Coronavirus spread and inform users if they have contacted positive cases. The application enables users to receive notifications in case of any registered infected person has been detected in a nearby area. Tawakkalna is to facilitate the issuance of movement permits electronically during the curfew period and to support government efforts to limit the spread of COVID-19. Tatamman provides protection and health care for citizens and maintain their safety and enhance their recovery procedures. The Center for Disease Control and Prevention, the SaudiCDC (<https://COVID-19.cdc.gov.sa>), monitor, measure, evaluate, control, and prevent any risk factors related to the public health in Saudi Arabia. It provides many health services, but not limited to:

- Conducts research and studies related to the public well-being.
- Monitors diseases on national and international levels.

- Exchanges health information with international health organizations.
- Acts as a national resource for detection and diagnosis of diseases.
- Cooperates with national and international centers and authorities for the promotion of wellness and the prevention and control of diseases.
- Supervises health awareness and health education programs in the field of public health.
- Encourages and maintains legislation that promotes wellness and limits the spread of unhealthy habits

SaudiCDC developed an interactive dashboard updated daily. It reports the national and international COVID-19 statistics such as the total reported cases, active cases, dead and recovered cases. All available information and guidelines on MOH website and its official social media channels are evidenced-based and updated regularly. Thus, the MOH website was the most used and trusted source for COVID-19 related information in Saudi Arabia.

Findings showed that the second and third most popular social media sources used for COVID-19-related information were WhatsApp and Twitter. During the quarantine, many people were confined to their phone applications for social and knowledge exchange. This was expected, as even HCP themselves have been using WhatsApp and Twitter for real-time professional communication and debate related to the pandemic. However, there have been instances where lack of consensus of opinion among physicians, have raised public fear and uncertainty (Haroon, 2020).

The study found that the participants regardless of their gender, reported different social media attitudes. They were always finding COVID-19 videos on social media. This is supported by a new study conducted Basch et al. (2020). They found that more than 165 million persons viewed 100 YouTube videos under the word "coronavirus". Furthermore, the study showed a significant relation between the study groups and obtaining useful COVID-19 social media information. The study showed that healthcare providers were the most group sharing COVID-19 content and attending online COVID-19 lecture. This wisely way of using social media platforms leads to improve individuals and public health. Healthcare providers use social media tools for professional development, sharing different educational materials, policies and healthy behaviors with colleagues and public. Physicians are attending online committees to listen to new articles and new and consult other experts about a specific patient's illness.

Thus, it is important that the public relies on a verified source of information, such as the government, because unverified sources are vulnerable to false acquisitions. Ambiguity about COVID-19 can cause a deluge of misinformation to be easily spread on SM applications. Among International Students, 20% encountered false news about COVID-19 from Facebook, Twitter and weChat (Ong'ong'a, & Demuyakor, 2020). In Iran, hundreds died after drinking methanol alcohol that social media messages said had cured COVID-19 patients (Iranpour *et al.*, 2020). In other countries, rumors spread on social media about food and medication scarcity drove people to stock extra supplies, which fluctuated the price of products and caused actual shortages (Zarocostas, 2020). The dissemination of exaggerated information can cause fear, stress, and/or anxiety which can increase the risk for other poor health outcomes at a time where not overbearing the healthcare system is especially important. For example, SM messages about the non-availability of vaccine, ineffective antiviral drug against COVID-19, and that social distancing and isolation are the only option to be protected from infection, can make people vulnerable to mental health issues and/or suicidal thoughts (Thakur *et al.*, 2020). When the Severe Acute Respiratory Syndrome (SARS) spread in Asia, post-traumatic stress disorder (PTSD) was the most predominant psychiatric event appeared after the epidemic (Mak *et al.*, 2009).

As seeking information from SM is considered a new trend, coordinating and developing guidelines for responsible use should be a top priority to ensure proper use (Frederick & Run, 2018; González-Padilla *et al.*, 2020). Governments are encouraged to direct the public toward the credible sources of information. In addition, engaging professional participation in enriching the SM content is important to reduce the risk of incorrect or improper information in the digital world.

LIMITATIONS

To the author's knowledge, this study is the first in Saudi Arabia to assess the role of social media in creating awareness during the COVID-19 pandemic across groups of university students, healthcare professionals, and the public. However, while the results are only generalizable to the population in Saudi Arabia, and may not be applicable to people in different countries or different social and culture context, they may be relevant to other Gulf Cooperation countries. Additionally, the study explored social media attitudes and use during the month of October 2020 only. This duration may not reflect SM extent of use and attitudes to seek information in the initial days of the pandemic.

CONCLUSION AND RECOMMENDATION

This study has confirmed that the main source of information for COVID-19 awareness in Saudi Arabia is the Ministry of Health website. Although other social media sources of information were used, the public heavily relied on the MOH website for awareness during the pandemic. It is very important to have this reliable and trustworthy relationship between the public and MOH, which empower the community to combat misleading or fake information disseminated through the SM. The findings have important practical implications as this study addressed the public social media attitudes in information seeking

and sharing during the pandemic. It is recommended that policymakers and public health leaders develop and maintain effective and reliable SM channels for public health awareness. It is also recommended that governments support appropriate use of social media for all levels in the community. Future development of social media policies, social media monitoring tools, and professional content creation are required for public health awareness during pandemics.

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APPENDIX: Study Questionnaire

Dear Respondent, Greetings!

Thank you for taking the time for responding to this questionnaire.

It will take approximately 5 minutes of your time but would be a great help in achieving the goal of our research (to study the role of social media in creating awareness during COVID-19 pandemic in Saudi Arabia). I would like to assure you that all information provided will be kept completely confidential and will only be used for the purpose of the research.

Section 1: Demographic and General Questions:

1. Gender: Male Female
2. Age: _____
3. Education: Middle School or less High School Certificate or Diploma
 Bachelor degree Graduate studies
4. Nationality: Saudi citizen Resident of Saudi Arabia
5. Geographic Region of residence: Eastern Western Middle Southern Northern
6. Which of the following best describes you?
 University Student Healthcare Professional Non-Healthcare Professional

Section 2: COVID-19-related Questions:

11. Are you worried to be infected with COVID-19? No Yes
12. Have you been diagnosed with a positive COVID-19 transmission? No Yes
13. Have you ever isolated yourself as a precaution or because you suspected to be infected by COVID-19? No Yes
(if yes, how many days did you isolate yourself? _____)
14. Where do you get most information regarding COVID-19?
 Facebook Instagram Twitter YouTube
 Telegram WhatsApp MOH website Other: specify _____

Section 3: Attitudes during COVID-19 Pandemic:

1. How often do you find videos, articles and blogs on social media talking about COVID-19?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Always	Often	Sometimes	Rarely	Never
2. How often do you follow pages, profile, vlogger or blogger providing information regarding COVID-19?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Always	Often	Sometimes	Rarely	Never
3. How often do you share content regarding COVID-19 through social media?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Always	Often	Sometimes	Rarely	Never
4. How often do you attend online lectures/symposium related to COVID-19 organized by professional organization?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Always	Often	Sometimes	Rarely	Never
5. How often do you think that information regarding COVID-19 on social media are important?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Always	Often	Sometimes	Rarely	Never
6. How often do you apply the information received from social media about COVID-19?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Always	Often	Sometimes	Rarely	Never

Section 4: Reliance on Social Media Sources

How often do you rely on information related to COVID-19 in the following social media sources?

Facebook	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Instagram	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Twitter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
YouTube	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Telegram	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WhatsApp	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MOH website	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other sources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thank you for your participation in this study.