Social Media as Sources of Information about COVID-19 among Food Handlers Working in Restaurants

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ARTICLE INFO	ABSTRACT
Keywords: COVID-19; social media, Facebook, Twitter, Instagram, restaurants, Egypt	COVID-19 has swiftly disseminated across the globe, leading to its official declaration as a pandemic by the World Health Organization (WHO) on March 11, 2020. COVID-19 cases have been reported in numerous countries worldwide. This study aimed to assess using social media (SM) as sources of information about COVID-19 among food handlers working in restaurants. Based on a cross-sectional data, 227 valid questionnaire forms were descriptively analyzed using SPSS 25. In general, information sources on COVID-19 were predominantly social media, television, and websites, with respective preferences of 76.6%, 53.19%, and 53.2%. The inclination toward social media stemmed largely from its accessibility, as indicated by 76.6% of respondents. Notably, Facebook emerged as the leading social media platform, with a usage rate of 64.7%. Among the various types of content, videos stood out as the most appealing posts, with a notable 84.8%. The videos that garnered the highest frequency of engagement on social media were those showcasing perspectives from pandemic-specialized doctors and narratives shared by survivors of COVID-19, constituting 84.8% and 39.2%, respectively. The global health challenge posed by the COVID-19 pandemic underscores the significance of these findings. Consequently, these results can assist public health authorities in involving communities in the adoption of protective health measures. Encouraging positive hygiene practices, such as regular hand washing, can contribute to mitigating the risk of COVID-19.

1. Introduction

In late December 2019, the COVID-19 outbreak was initially identified in Wuhan, located in the Hubei province of China. Within four months, the infection had spread to 205 countries on six continents, infecting almost 7 million people and resulting in more than 400,000 deaths. The pandemic caused the shutdown of borders, social distancing measures, and overwhelmed healthcare systems. As a result, individuals explored diverse channels to access trustworthy information on safeguarding themselves from this calamity, encompassing official government announcements, hospitals, private healthcare professionals, and social media platforms (Hussain, 2020).

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According to Orîndaru et al. (2021), COVID-19 outbreak has had a significant influence on various aspects of life, underscoring the interconnectedness of global health, employment, and other socio-economic concerns. In addition to the tragic loss of life and the devastating effect of the pandemic on health and communities, the crisis has severely affected the workforce, jeopardizing millions of jobs. The consequences include increased rates of unemployment and underemployment, loss of income, business shutdowns and insolvencies, disrupted supply chains, heightened informality and insecurity in the workplace, and new and intensified occupational safety and health (OSH) difficulties. The crisis has particularly affected women, young workers, and migrants employed in the tourism industry.

Today, social media plays a crucial role in people's lives (Utz et al., 2013). It has become an integral tool for communication, brand management, marketing, service recovery, promotions, research, and other managerial functions in various hospitality and tourism businesses (Mehraliyev et al., 2020). In the context of the COVID-19 pandemic, remote work from home and online educational classes have become commonplace. The significance of social media in crisis communication has escalated for hospitality and tourism organizations. However, it is noteworthy that the hospitality sector still underutilizes social media for crisis communication (Utz et al., 2013; Mehraliyev et al., 2020).

Social media, such as websites and virtual communities, along with travel-related online reviews stemming from consumer-generated media, have had a substantial impact on the tourism and hospitality sectors. The significance of travelers' word-of-mouth on social media platforms is becoming a crucial factor in the decision-making process for users in the realms of tourism and hospitality. Social media users involved in travel have the capacity to generate, share, review, and recommend hotels, airlines, and restaurants, while also conveying details about their personal experiences. Users of travel-related content on social media highly regard reviews as incredibly valuable and trustworthy (Yoo et al., 2009).

In the Egyptian context in order to gain a comprehensive understanding of the COVID-19 pandemic in Egypt, this review incorporates various sources of publicly available and current data. These sources include published articles, reports from the World Health Organization (WHO), news reports, Egypt's official newspaper (Al Ahram), and other relevant news sources. A study by Elshaer (2022) aimed to examine how restaurants have responded to the challenges posed by COVID-19. The research utilized a qualitative approach, involving 39 interviews conducted with managers of 35 independent restaurants in Cairo. These interviews were carried out between March and April 2020 and were analyzed using NVivo 9.0 software. The study effectively captures the decisions and actions taken by restaurants in four key areas: leadership practices, managing cooperation with stakeholders, operational procedures, and reputation marketing, all aimed at adapting to the COVID-19 crisis. Additionally, the study identifies the obstacles encountered in the implementation of these mitigation measures. While the focus of this paper is on restaurants in Cairo, its significance lies in being the first analytical study at the managerial level that documents the responses of the restaurant industry to COVID-19. It contributes to the existing literature by shedding light on the impact of the pandemic on the restaurant industry and providing a comprehensive understanding of decision-making processes, adopted responses, challenges faced, and recovery practices within the industry. As there is no in-depth study on using social media as a source of information during COVID crises among restaurants' employees in Egypt. This study aims to investigate using social media as sources of information about COVID19 among restaurants' employees.

2. Review of literature
2.1 COVID19 in Egypt
The emergence of the newly discovered Coronavirus, known as SARS-CoV-2, in Wuhan, China, led to a global public health emergency. As of April 19, 2020, Egypt had reported 3,144 cases of COVID-19 and 239 deaths (Gaye et al., 2021). However, there have been claims that these figures may be underestimated, especially considering the documentation of exported cases from Egypt to other countries, suggesting that the actual burden of COVID-19 infections in Egypt may be significantly higher than reported (Medhat, &

El Kassas, 2020). Despite this, Egypt has implemented a robust healthcare model to combat the COVID-19 pandemic, under the guidance of the World Health Organization (WHO, 2020) in its report, WHO aimed to shed light on the COVID-19 infection situation in Egypt, exploring potential factors that may contribute to the relatively lower infection rates in the country, such as high temperature, humidity, the timely administration of the BCG vaccine and potentially a distinct viral subtype. Additionally, we provide an overview of the measures and preventive actions taken by Egypt to address this epidemic (WHO, 2020).

Egypt has a diverse healthcare system that is financed and administered by various sectors, including the government, parastatal entities, and the private sector. The government and parastatal sectors, overseen by the state, encompass hospitals, insurance organizations such as the Health Insurance Organization (HIO), and the Curative Care Organization (CCO). HIO, which falls under the parasternal sector, provides basic health coverage for approximately 60% of the population, including primary, secondary and tertiary care (Gaye et al., 2021)

The 2014 constitutional amendments, as highlighted in the WHO health system profile of Egypt in 2015, aimed to revitalize the healthcare system and improve quality of care, health expenditure, availability and accessibility of disease surveillance. As a result, primary healthcare facilities have become easily accessible to 95% of the total population within a distance of less than 5 km. Despite expenditure on health as a percentage of Gross Domestic Product (GDP) remaining steady at 5.1% between 2005 and 2013, recent data indicate an increase in health expenditure per capita in Egypt, rising from 54 US dollars in 2004 to 126 US dollars in 2018, with an average annual growth rate of 7.11% (Gaye et al., 2021; Medhat & El Kassas, 2020).

2.2 Social media as sources of information

The definition of social media or Web 2.0 technologies, as provided by the JISC (formerly the Joint Information Systems Committee), characterizes them as "Innovative online tools designed to enhance communication and collaboration" (JISC). Swaminathan et al. (2013) categorized social media into blogs, networking sites such as Facebook, Twitter, and LinkedIn, and community websites like Wikipedia and YouTube. Nevertheless, the evolution of information technology has brought about a shift in the way information is sought, particularly in the academic context (Cerretani et al., 2016; Hamid et al., 2016).

The profound impact of COVID-19 prompted immediate scholarly attention across various disciplines. Numerous conceptual reviews surfaced in the literature of business, tourism, and hospitality, offering insights into future research directions related to COVID-19 and proposing potential solutions based on existing literature to navigate the challenges posed by this unparalleled crisis. As exemplified by Bapuj et al. (2020), who characterized the COVID-19 pandemic as an unprecedented crisis with enduring implications for businesses and society, collaboration among organizations and a diverse range of stakeholders was underscored as essential in effectively responding to the pandemic. The authors anticipated the emergence of three key research themes in the realms of business and society scholarship: extracting lessons from the crisis, evaluating organizational responses, and envisioning future organizational designs.

In literature, the widely acknowledged severe repercussions of COVID-19 on the business realm are well-documented. Moving forward, we endorse Tracey's (2020) perspective regarding the trajectory of hospitality research in the post-COVID-19 era, emphasizing the necessity for thoughtful and innovative inquiries to effectively tackle the challenges confronting the industry.

Advancements in information technology have led to a proliferation of information sources and channels, with social media emerging as a prominent platform utilized by libraries and information centers for various activities, including information acquisition, processing, storage, and dissemination. The widespread adoption of social media for information seeking and sharing is evident, as highlighted by Morris et al. (2010) and Tamine et al. (2016). Social media plays a significant role in conveying diverse types of information, encompassing education, entertainment, world affairs, and casual information, as emphasized by Osatuyi (2013). A notable characteristic of social networks is their real-time information sharing, making

them a source of the most recent and up-to-date information. The utilization of social media as both an information source and an information-seeking tool is motivated by various reasons, including social interaction, expression of opinions, information seeking, leisure, and reviews and recommendations, as discussed by Hamid et al. (2016) and Kim et al. (2014).

Social media is a highly utilized information source due to its ability to offer fast, affordable, and accessible information. A study by Sorice et al (2017). involved 100 patients in a plastic surgery center and found that social media was an effective means of patient consultation as it helped to manage patient expectations and improved adherence to treatment. (Nilashi, 2021). Another review by Abuhadra and Nazha (2018) examined the impact of social media on Myelodysplastic syndrome and observed that it improved patient education, communication between healthcare institutions, and collaboration within the healthcare industry. Social media have become one of the most popular sources of information globally, as it offers simple and affordable access to the Internet and has a large number of registered users. This makes social media one of the most effective and efficient ways of spreading information. During significant events, such as natural disasters or sports events, people typically search for information, and social networks have become a primary source of this. Swaminathan *et al.* (2013) For example, there was a surge in online searches on social media platforms in China about COVID-19 cases 10-14 days before the peak incidence of the disease, indicating a correlation between internet and social media network searches and the spread of the disease. Social networks have also become an essential tool for people to stay connected with loved ones and reduce feelings of isolation and boredom, which are linked to anxiety and long-term distress. Therefore, isolation at home is a crucial recommendation to minimize the psychological impact (Kwok, 2022).

Based on recent studies, an unprecedented 72% of adults actively participated in at least one social media platform in 2021, with a higher prevalence of younger adults maintaining accounts across multiple platforms compared to their older counterparts (Sorice et al., 2017). This pattern was mirrored in the UK, where 78% of adults were identified as engaging in some form of social media usage (Nilashi, 2021). Notably, a substantial majority of adults not only have a presence on social networks but are also frequent users, with 49% of Facebook users and 30% of Twitter users indicating multiple daily visits to these applications or sites (Sorice et al., 2017). In the UK, the average monthly time spent on Facebook was recorded at 16.6 hours, and on TikTok, it was 19.9 hours (Nilashi, 2021). Among American adolescents, a staggering 97% reported using at least one social media platform, and 95% possessed or had access to a smartphone or computer for social media viewing (Li et al., 2020). Similarly, in the UK, 87% of adolescents acknowledged using at least one social media site, with 91% having ownership or access to a smartphone or computer for social network engagement (Kwok, 2022).

As the prevalence of social media usage has escalated, investigations into its influence on the mental health and well-being of young individuals have been undertaken, unveiling a spectrum of both positive and negative effects (Khoong et al., 2020). Qualitative studies indicate that young people perceive social media positively, recognizing its role in fostering social connections, providing access to news and information, and facilitating self-expression, thereby encouraging the exploration of their identities (Khatri, 2021). However, the flip side is evident, with social media use also being associated with negative perceptions. Young individuals have reported instances of bullying, the spread of rumors, experiences of envy or inferiority, dissemination of misinformation, and feelings of boredom or time wasted, all of which have been linked to adverse mental health outcomes (Khatri, 2021).

Accusations of disseminating misinformation about COVID-19 frequently target social media platforms. In both the US and the UK, Facebook and Twitter are particularly concerning platforms in terms of spreading misinformation (Hussain, 2020). Despite TikTok not originally designed for news sharing like

Facebook or Twitter, it experienced a surge in popularity among adolescents and young adults during the COVID-19 pandemic, witnessing a 180% increase in users aged 15-25 years old (Huang, 2020). However, TikTok has faced criticism for contributing to the spread of misinformation among its adolescent users (Akar and Topçu, 2011). Therefore, it is crucial to examine the relationship of each social media platform with well-being individually, considering differences in news information delivery and format. Previous research emphasizes the significance of assessing the effects of distinct social media platforms independently, as they may exhibit markedly different associations with well-being (Hussain, 2020).

In the contemporary era, social media has transformed into an essential aspect of individuals' lives (Utz et al., 2013). Recognizing its significance, the hospitality and tourism sectors have also embraced social media as a vital tool for various purposes, including communications, promotions, marketing, brand management, service recovery, research, and diverse managerial implications (Mehraliyev et al., 2020). The onset of the COVID-19 pandemic has led to the widespread adoption of remote work and online education. In such times, the role of social media in crisis communication becomes even more crucial for hospitality and tourism organizations. However, despite its potential, social media remains underutilized in crisis communication within the hospitality sector.

The emergence of social media platforms and travel-based online reviews has had a notable impact on the tourism and hospitality industries. These platforms, including websites and virtual communities, have become influential sources of information for consumers. The value of user-generated content, particularly word-of-mouth shared on social media, has become increasingly significant in shaping users' decision-making processes in the context of tourism and hospitality. Travelers now have the ability to create, share and review their experiences, providing recommendations and information on hotels, airlines, restaurants, and other travel-related services. Such user-generated travel reviews are highly regarded and trusted by individuals seeking credible and valuable information (Yoo et al., 2009).

3. Methods
Based on the work of Abdelhakim and Badr (2021), this study adopted the cross-sectional approach as its design. This study aimed to investigate the use of social networks as a source of COVID-19 information among food handlers who work in restaurants in Egypt. The study focused on food handlers employed in various restaurants across Egypt. The food handlers included chefs, kitchen staff, and any personnel directly or indirectly involved in food preparation, handling, or service. A convenient sampling technique was used to recruit food handlers from different types of restaurants in Alexandria city located in north Egypt. A self-administered questionnaire was developed based on the previous related studies (e.g., Khatri, 2021; Hussain, 2020) to collect data from the study participants (N=227). The questionnaire included sections on demographics, social media sources of COVID-19 information, and the preference of social media for acquiring and disseminating such information. The questionnaire was pre-tested for clarity and relevance. Data collection was carried out between September and December 2021. The authors visited selected restaurants in Alexandira, explained the purpose of the study to potential participants, and obtained informed consent. The data collected via the questionnaire were analyzed using statistical software (SPSS 25). Descriptive statistics, including frequencies and percentages, were used to summarize demographic characteristics and responses related to social media use for COVID-19 information.

4. Results and discussion
A total of 227 restaurant employees participated in the study, representing various roles within the restaurant sectors. The characteristics of the respondents are displayed in Table 1. As Table 1 shows, most of respondents were males (85%), aged between 25 to 35 years (61%), and gained a university level of education (77.5%). As well as most of them (81.93) are working in operations, and married (53.8%).

Table 1: The Demographic profile of respondents(n=227)

Demographics		Respondents	
		N	(%)
Gender	Male	193	(85.02)
	Female	34	(14.95)
Age (years)	25- 30	77	(33.9)
	31-35	69	(30.03)
	36-40	48	(21.2)
	40 <	33	(14.5)
Educational level	High school	44	(19.38)
	University level	176	(77.5)
	Postgraduate	7	(0.03)
Job level	Managerial level	41	(18.07)
	Operational level	186	(81.93)
Marital status	Single	53	(45.3%)
	Married	157	(53.8%)
	Others	17	(0.03)
Total		227	100

Table 2. Source of information COVID19

Source of information	(%)
1. Family	21
2. Social media (Facebook, Twitter, What Sapp, YouTube, Instagram ... etc.)	76.6
3. Relatives and friends	13.84
4. Internet and websites and media houses	53.19
5. Communicate with colleagues in the workplace.	5.2
6. Official government websites (such as the Ministry of Health - the National Food Safety Authority - world health organisation etc.)	21.7
7. Television	53.2
8. Print media such as magazines and newspapers	9.5
9. Scientific journals	2.6
10. Radio	1.3
11. Doctor/medical professional	0.5
12. Do not receive or seek information	0
Total	>100%

This study used a list of 12 information sources (Table 2), these sources were mostly used in many previous studies (e.g, Farooq, Laato, & Islam, 2020). However, within studies there was a little variation. In addition, this exposed that social media websites and applications (Facebook, Twitter, What Sapp, YouTube, Instagram, etc.), came in the second ranking. This is in line with previous research by Farooq et al. (2020), who reported that 39.6% of respondents preferred social media as the most commonly used sources of COVID-19, however, this is less than the level of preference in this study.   Previous research has shown that using social media platforms played an effective role to disseminate health –related information (e.g., Mou, & Lin, 2014, p. 598), particularly during the COVID-19 pandemic (Farooq, Laato & Islam, 2020). The most favored channels for obtaining information on COVID-19 were social networks, television, and websites, with percentages of 76.6%, 53.19%, and 53.2%, respectively.

Table 3. The utilization of information tools and social media platforms by respondents (n=227)

Item	%
Smartphone usage 1. Yes, 2. No	 (97.7%) (2.3%)
Personal computer usage 1. Yes, 2. No	 (64.7%) (34.4%)
Source of information usage Frequency for COVID19 during the last 1 week*	5.4±5.2
Source of information usage Frequency for COVID19 during the last 1 week*	7.8±8.3
Source of information usage Frequency for pandemic before the last 1 week	2.6±2.1
The preferred social media application(s): 1. Twitter 2. YouTube 3. Facebook 4. Instagram 5. WhatsApp 6. Other	 (43%) (27.8%) (64.7%) (57.1%) (15.8%) (11.8%)
Most interested content (s) shared on social media: 1. Video 2. Picture 3. Article	(74.2%) (25.6%) (35.7%)
Average daily screen time over the past week, measured *minute/day	115.5±97.9
Average daily screen time over the past week, measured *minute/day	22.3±12.9
Reason(s) for preference of social media: 1. Easy access 2. Intensive information 3. Cheap/free 4. Reliable 5. No another source	 (79.4%) (34.7%) (18.1%) (4.8%) (2.3%)
Types of Target content(s) on social networks: 1. Videos from doctors 2. Booklets 3. Links to related websites 4. Videos of survivors 5. Professional books	 (84.8%) (4.3%) (24.1%) (39.2%) (13.2%)
Information subject (s): 1. Protection from COVID19 2. Correct nutrition style during COVID19 3. The present situation of the COVID-19 outbreak 4. When is the anticipated end of the COVID-19 outbreak? 5. Information about COVID19patients 6. COVID19 Lockdowns	 (94.5%) (12.3%) (45.5%) (54.3%) (5.7%) (3.8%)
Total	>100%

According to the data presented in Table 3, a majority of participants (97.7%) utilized smartphones, and 64.7% employed personal computers. Prior to the pandemic, participants, on average, depended on social networks as an information tool for COVID-19 2.7 times a week, a frequency that increased to 7.9 times during the epidemic (p < 0.001). The predominant factor driving the preference for social media use was its convenient accessibility (76.6%). Following the onset of the pandemic, the average screen time dedicated

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to social media searches related to COVID-19 increased significantly from 22 minutes to 117 minutes (p < 0.001).

Facebook was the most used social media tool, with 64.7% of respondents utilizing it, and videos were deemed the most attractive posts (84.8%). The social media posts that received frequent engagement comprised videos featuring insights from doctors specializing in the pandemic and narratives from COVID-19 survivors, making up 84.8% and 39.2%, respectively. The most commonly searched topics on social networks included 'When will the outbreak end?,' 'the latest state of the disease,' and 'protection from COVID-19' (refer to Table 3). Social media platforms encompass a range of applications used for communication, information sharing, photos, videos, and entertainment. Examples of such platforms include Facebook, WhatsApp, Instagram, Twitter, YouTube, among others.

The COVID-19 outbreak imposed strict transportation restrictions, limited access to healthcare institutions, and strained healthcare systems. Many individuals faced challenges in obtaining accurate information about avoiding the Coronavirus, the potential duration of the outbreak, and disease treatment. The pandemic provided a prospect to assess the starring role of social media as a source of data on the COVID19 (Nilashi et al., 2021). The findings indicate that social media has become the greatest utilized foundation of information on the COVID-19.

The use of social media has witnessed a continual increase over the years. Sorice et al. (2017) reported a rise in social media access from 51% to 75% between 2011 and 2013. Moreover, there was a notable rise in average daily social media usage, escalating from 90 minutes in 2012 to 144 minutes in 2018 (Nilashi et al., 2021). To the best of our knowledge, no study has undertaken a comparison of the frequency and duration of social media usage for health information both before and during the COVID-19 pandemic. Among our participants, the daily frequency of accessing social media witnessed an increase from 2.6 times to 7.8 times after the pandemic's onset. Additionally, the average daily time spent by participants gathering information about COVID-19 surged significantly, soaring from 22 minutes before the pandemic to 117 minutes during the pandemic era. This surge is attributed to restrictions in transportation and challenges in accessing the health system, heightening the reliance on social media for obtaining COVID-19 information.

There has been no exploration into the preferred type of social media post for COVID-19 information. Social media analysis indicates a preference for video posts over other formats like articles, pictures, or audio (Kwok, Lee, & Han, 2022). McCann found that individuals aged 18 to 65 were more inclined to use the Internet for watching videos and reading personal blogs (Khatri, 2021). In our current study, video posts emerged as the most captivating social media content for 151 out of 212 participants, accounting for 71.2%.

5. Conclusion and implications
This cross-sectional study aimed to provide insights into the role of social media as a source of COVID-19 information among food handlers in restaurants across Egypt. The findings from this study will contribute to a better understanding of the information-seeking behavior of food handlers during a public health crisis and may inform future interventions aimed at improving COVID-19 communication strategies within the restaurant industry in Egypt. Current research has shown that social media has become the preferred channel for accessing information regarding the COVID-19 pandemic. Among the various types of content, videos garnered the highest viewership. Interestingly, participants expressed a strong preference for videos featuring medical professionals. Our findings could be reinforced by conducting future prospective randomized studies involving larger participant groups.

6. Limitations and future research
This study is the first in Egypt to evaluate social media as main source of information on COVID-19 during it's the pandemic, and naturally has some limitations. Firstly, one limitation of this study is the potential for sampling bias. The study relied on voluntary participation, which may have attracted people who are more active on social media or who have specific interests in COVID-19. Therefore, the sample may not fully represent the entire population of restaurant employees in Egypt. Another limitation is that

the data collected in this study were based on self-reported responses from the participants. This introduces the possibility of response bias, as participants may provide socially desirable responses or inaccurate information about their use of social media and sources of information. Furthermore, this study concentrated on a one-week timeframe; future investigations should delve into alterations in the patterns of social media use over the course of the pandemic. Moreover, the study employed a cross-sectional design, which provides a snapshot of information at a specific point in time. It does not allow for the examination of changes or trends over time. Future research with a longitudinal design could provide insights into evolving patterns of social media usage among restaurant employees.

Considering the previous limitations, future studies may consider them, for instance, complementing quantitative data with qualitative research methods, such as in-depth interviews or focus groups, could provide a deeper understanding of the motivations and experiences of restaurant employees regarding social media information sources. Another avenue to study is comparative studies could explore how social media usage and information preferences vary among different sectors within the hospitality industry. Comparing restaurant employees with those in other fields related to the hospitality sector would provide valuable information.

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