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Do Not Come Near Me, Mrs Rona is here: A Systematic Review on the Use of Instagram during COVID-19

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Abstract

COVID-19 pandemic infected the world in 2019 and resulted in quarantines and isolation measures that have proven to contain the virus. The isolation exercise had caused drastic changes to normal daily activities, primarily affecting interpersonal relations among humans, where most interactions have now taken place digitally. As a result of these changes, daily online usage has increased with social network applications, including Instagram, dominating the world's most visited websites. This internet platform's usage is mainly for finding information, connecting with loved ones, and keeping up-to-date with news and happenings worldwide. This emerging phenomenon has progressively shifted the communication landscape of both the personal and the business world. These entities of traditional sources are now being integrated with improved online mediators. Recent studies have also highlighted how the interactions of global societies on digital media like Instagram impacted society's education, social life, leisure, and health. Therefore, this systematic review paper is timely to analyze the existing literature on the use of Instagram during the COVID-19 pandemic and provides further insights in highlighting the extended usage and functions of Instagram during an emergency state like the COVID-19 pandemic. Based on PRISMA Statement (Preferred Reporting Items for Systematic Reviews and Meta-Analyses), a systematic review of four (4) main processes was conducted on Scopus 65 related studies: identification, screening, eligibility and data analysis. Of the 65 articles that have been reviewed, only 42 articles were finally selected for further analysis. Findings of the analysis revealed four main themes – the use of Instagram for research (two subthemes), to market products, as a basis for information tools (two subthemes) and for social activity during the pandemic. The ultimate presentation of this paper provides several recommendations with in-depth deliberation. Based on the review, it was found that Instagram was used for information search related to the COVID-19 pandemic and for research (particularly research related to the pandemic and online questionnaire distribution due to movement control order restriction to conduct fieldwork manually). Furthermore, Instagram was used to market

products online through the Instagram shop (due to the movement control order restricting sellers from conducting their business as usual) and social activities (such as communicating with others using Instagram during the movement control order). These findings further provide inputs for the general public and business practitioners. There were many loopholes in this research that remain uncovered. Future studies may conduct umbrella reviews on other databases, providing different insights and perspectives.

Keywords: Instagram, Systematic Review, Marketing, Research, Pandemic, Information Tool, Social Activities, COVID-19

Introduction

COVID-19 pandemic infected the world in 2019 and resulted in quarantines and isolation measures that have proven to contain the virus. The isolation exercise had caused drastic changes to the normal daily activities, primarily affecting the interpersonal relations among humans, where most interactions now take place digitally. As a result of these changes, the usage of social network users in Malaysia had increased from 25.74 million users in 2019 to a forecasted 27.78 million users in 2021 (Statistica.com, 2020). More than 4.5 billion people now use the internet worldwide, while social media users surpassed the 3.8 billion mark in 2020. This makes up 60% of the world's population already online, forecasting another half of the world's population by the middle of this year (Kemp, 2020). According to Hootsuite.com, in their Digital Report Survey from 2020 to 2021, daily online usage had increased from 6 hours 38 minutes a day to an average of 7 hours a day, with social network applications, including Instagram, dominating the world's most visited websites. Furthermore, the report highlighted that these internet platforms' usage is mainly for finding information, connecting with loved ones, and keeping up-to-date with news and happenings worldwide (Hootsuite.com, 2021).

As noted earlier, the daily online usage of social media apps (including Instagram) had increased during pandemic COVID-19. Instagram can be defined as a photo-sharing mobile application that allows users to take pictures, apply filters, and share them, with 400 million active monthly users sharing over 40 billion pictures (Alhabash & Ma, 2017). It is among the most popular social media platforms, and it has been efficiently integrated into the world's societies in general (Bestari et al., 2020). The prevalent user-generated content feature (Vickery et al., 2007) is allowed publicly. Being available on the internet reflects a certain degree of creative endeavour and is created outside professional practice and routine (Savitir & Irwansyah, 2021). Most user-generated content activities are carried out without any hope of profit, which influences the motives behind this behaviour; including associating with group members as well as achieving a certain level of fame, prestige, and self-expression (Vickery et al., 2007).

Furthermore, to cope with the adverse effects of social isolation on well-being, Instagram has also become the means to conduct interpersonal relations online (Masciantonio et al., 2021), where the usage of social network sites can assist in keeping continuous contact with family and friends amidst the pandemic (Qiu, et al., 2020; Altena, et al., 2020). This emerging phenomenon has progressively shifted the communication landscape of both the personal and the business world, where the traditional sources are now being integrated with improved online mediators (Perez-Escoda et al., 2020). This

phenomenon is proven to be significant, despite the counterproductive ability of digital media to create hoaxes and fake news, particularly during times of crisis (Brennen et al., 2020).

The recent studies have also highlighted how the interactions of global societies on digital media like Instagram impacted not only society's behaviour in the areas of education (Carpente et al., 2020), social life and leisure (Mossberger, Wu, & Crawford, 2013; Muñiz et al., 2017), but also the area of health (Ghosh, Schwartz, & Narouze, 2020). Thus, this systematic review paper is timely to analyze the existing literature on the use of Instagram during the COVID-19 pandemic. This paper provides further insights in highlighting extended usage and functions of Instagram during an emergency state like the pandemic. This intention provides further inputs the general public and business practitioners.

Methodology

Guided by the PRISMA Statement (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) review method, a systematic review was conducted on one central database, namely, Scopus. Scopus is among the largest abstract and citation databases of peer-reviewed literature, which comprise diverse subject areas, namely social sciences, computer science, psychology, arts and humanities as well as decision sciences. The systematic review involved four (4) main processes, namely identification, screening, eligibility and data analysis. Hence, the following presents the systematic review process for this paper:

Identification

The first phase of the systematic review process is identification. Four techniques were used to search for reading sources from the Scopus database, namely field code function, phrase searching and truncation. The keyword used in the search string is youth online learning. The summary of the search string used is depicted in Table 1 below.

Table 1

The Search String Used for the Systematic Review Process

Database	Keywords used
Scopus	Field code function: Truncation: Instagram COVID-19 pandemic# = 65 articles Instagram COVID-19 pandemic* = 65 articles Instagram COVID-19 pandemic? = 25 articles Boolean Instagram AND COVID-19 AND pandemic = 52 articles

Screening

Several inclusion and exclusion criteria have been determined. For the purpose of this paper, three main criteria were outlined, which comprised paper type, language and timeline.

Only research articles with empirical data from the journal were included in the paper type. Thus, other articles, namely systematic review, meta-analysis, book series, book, note, undefined, chapter-in-book, conference proceeding, trade publications, and editorials, were excluded.

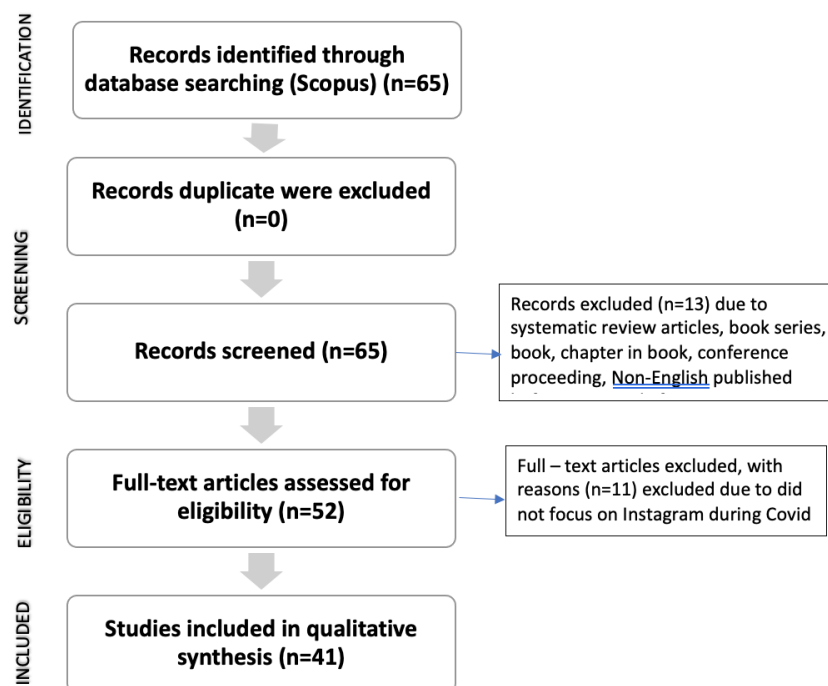
Regarding timeline and language, in an attempt to ease understanding of interpreting contents of the past articles, only articles of English language were selected to be reviewed for this paper. The timeline has been set for selecting papers to be reviewed between 2020 and 2021 (Table 2).

After going through the screening process, out of 65 articles that have been initially identified (as depicted in Figure 1) as related to the research in hand, only 52 articles fulfil the criteria outlined in Table 2 below. These articles underwent the next stage, that is, the eligibility stage.

Table 2
Inclusion and Exclusion Criteria

Criterion	Eligibility	Exclusion
Literature type	Journal (research article)	Journals (systematic review, review, meta-analysis, meta-synthesis), book series, book, note, undefined, chapter-in-book, conference proceeding, trade publication and editorial
Language	English	Non-English
Timeline	Between 2020 and 2021	Before the year 2020

Figure 1: PRISMA flow of the diagram



Eligibility

In this stage, the 52 articles were further analyzed based on availability and relevance with the research to ensure the remaining articles fit the criteria determined. The examination was conducted manually by the researchers. The completion of the eligibility

phase resulted in 42 closely related articles with research in hand. Therefore, the 42 articles were further analyzed through a qualitative synthesis review.

Analysis

The remaining 42 articles were assessed and analyzed. The analysis was focused on specific studies related to the formulated questions. The data were extracted by reading through the abstracts first, then the full articles (in-depth), to identify main issues and appropriate themes. Then the other remaining articles were also assessed and analyzed, emphasizing responses related to the formulated questions. Qualitative analysis was performed using content analysis to identify those themes related to the use of Instagram during the COVID-19 pandemic.

Result

Based on the 42 articles assessed, analyzed and reviewed, four main themes were developed related to the use of Instagram during the COVID-19 pandemic. The four main themes are the use of Instagram for research (two subthemes), to market products, as a basis for information tools (two subthemes) and for social activity during pandemic (Table 3).

A total of 22 studies focused on quantitative approach (Kernder et al., 2021; Hoyt et al., 2021; Galhardi et al., 2020; Jahangiry et al., 2020; Ghimire, Dhungel & Pokhrel., 2020; Moraes et al., 2020; Hikmah et al., 2020; Herrera et al., 2020; Ali et al., 2020; Zabadi et al., 2020, 2021; Enver et al., 2020; Atas et al., 2020; Culha et al., 2021; Cohen, Hoyt & Dull, 2020; Bolarinwa et al., 2020; Mohsen et al., 2021; Parker et al., 2021; Srivastav et al., 2021; Sulistyawati et al., 2021; Cato et al., 2021; Sallam et al., 2020), while a total of 17 studies focused on qualitative approach (Romo, Aguirre & Medina, 2020; Mackey et al., 2020; Forte & Pires, 2020; Arasli et al., 2020; Rendell, 2020; Perez-Escoda et al., 2020; Burzyńska, Bartosiewicz & Rękas, 2020; Chang et al., 2020; Niknam et al., 2021; Soekiman et al., 2021; Malik, Khan & Quan-Haase, 2021; Lu et al., 2021; Anacleto et al., 2021; Sharov, 2020; Santos et al., 2020; Rovetta & Bhagavathula, 2020; Cinelli et al., 2020). The remaining two studies (Scott, McGowan & Visram, 2021; Fumagalli et al., 2021; Ye et al., 2020) focused on a mixed-method approach.

As depicted in Table 3 below, the number of research classified under the different regions of the world are mainly ten articles from the European Regions [German (Kernder et al., 2021), Europe (Arasli et al., 2020), United Kingdom (Arasli et al., 2020; Rendell, 2020; Scott, McGowan & Visram, 2021; Fumagalli, Dolmatzian & Shrum, 2021), Spain (Pérez-Escoda et al., 2020; Romo et al., 2020), Finland (Malik et al., 2021), Italy (Fumagalli, Dolmatzian & Shrum, 2021), Sweden (Ye et al., 2020), Russia (Sharov, 2020)]; six articles from the South American Regions [Argentina (Herrera et al., 2020; Fumagalli, Dolmatzian & Shrum, 2021), Brazil (Galhardi et al., 2020; Forte & Pires, 2020; Moraes et al., 2020; Anacleto et al., 2021; Santos et al., 2020)]; six articles from the United States and Canadian Regions [USA (Hoyt et al., 2021; Mackey et al., 2020; Arasli et al., 2020; Cohen, Hoyt & Dull, 2020; Malik, Khan & Quan-Haase, 2021), Canada (Malik, Khan & Quan-Haase, 2021)]; five articles from the Southwest and Central Asia [Iran (Jahangiry et al., 2020; Niknam et al., 2021), Nepal (Ghimire, Dhungel & Pokhrel, 2020), Arabian Gulf (Ali et al., 2020), India (Srivastav et al., 2021)], 7 articles from the Western Asian Region [Palestine (Zabadi et al., 2020, 2021), Turkey (Enver et al., 2020; Atas et al., 2020; Culha et al., 2021), Syria (Mohsen et al., 2021), Oman (Malik et al., 2021) Jordan

(Sallam et al., 2020)]; one article from the Australian Region [Australia (Parker et al., 2021)]; 6 articles from the Southeast Asia [Indonesia (Hikmah et al., 2020; Soekiman et al., 2021; Sulistyawati et al., 2021), Taiwan (Chang et al., 2020), Singapore, Hong Kong and Tokyo (Lu et al., 2021, Japan (Cato et al., 2021)]; 2 articles from the African region [Nigeria (Bolarinwa et al., 2020), Poland (Burzyńska, Bartosiewicz & Rękas, 2020)]; 2 articles from regions that were not identified (Cinelli et al., 2020; Rovetta & Bhagavathula, 2020).

Table 3

The Findings

o.	Author (year)	Count ry	Research Approach
	Kernder et al (2021)	German	Quantitative
	Hoyt et al (2021)	USA	Quantitative
	Romo et al (2020)	Spain	Qualitative
	Galhardi et al (2020)	Brazil	Quantitative
	Mackey et al (2020)	USA	Qualitative– Content analysis
	Jahangiry et al (2020)	Iran	Quantitative– Survey
	Ghimire, Dhungel & Pokhrel (2020)	Nepal	Quantitative– Survey
	Forte & Pires (2020)	Brazil	Qualitative analysis– Content analysis
	Moraes et al (2020)	Brazil	Quantitative– Survey
0	Hikmah et al (2020)	Indonesia	Quantitative– Survey
1	Herrera et al (2020)	Argentina	Quantitative– Survey
2	Ali et al (2020)	Arabian Gulf Peninsula	Quantitative– Survey
3	Zabadi et al (2020)	Palestine	Quantitative– Survey
4	Arasli et al (2020)	Europe, USA & UK	Qualitative– Interview and content analysis
5	Rendell (2020)	UK	Qualitative– Interview and case study
6	Pérez-Escoda et al (2020)	Spain	Qualitative– Interview (ethnography study)
7	Enver et al (2020)	Turkey	Quantitative– Survey
8	Atas et al (2020)	Turkey	Quantitative– Survey
9	Culha et al (2021)	Turkey	Quantitative– Survey
0	Cohen et al (2020)	USA	Quantitative– Survey
1	Bolarinwa et al (2020)	Nigeria	Quantitative– Survey

2	Burzynska et al (2020)	Poland	Qualitative– Interview and content analysis
3	Chang et al (2020)	Taiwan	Qualitative– Interview and content analysis
4	Mohsen et al (2021)	Syria	Quantitative–web-based, cross-sectional study
5	Niknam et al (2021)	Iran	Qualitative– Content analysis
6	Parker et al (2021)	Australia	Quantitative– Survey
7	Soekiman et al (2021)	Indonesia	Qualitative– semiotics approach by Peirce (1977), Icon + Index + Symbol
8	Srivastav et al (2021)	India	Quantitative– cross-sectional online survey
9	Sulistyawati et al (2021)	Indonesia	Quantitative– cross-sectional survey
0	Zabadi et al (2021)	Palestine	Quantitative – cross-sectional survey
1	Malik et al (2021)	Finland, US, Canada and Oman	Qualitative– Content analysis
2	Scott et al (2021)	England – focus on areas of deprivation	Mixed mode: Qualitative– flexible diaries Quantitative– Screening interview and follow up interview
3.	Lu et al (2021)	Singapore, Hongkong, Seoul, Tokyo	Qualitative– Content analysis
4.	Fumagalli et al (2021)	Italy, Argentina & UK	Mixed-mode– Content analysis and survey
5.	Cato et al (2021)	Japan	Quantitative
6.	Anacleto et al (2021)	Brazil	Qualitative– Semi-structured interview
7.	Ye et al (2020)	Sweden	Mixed-method
8.	Sharov (2020)	Russia	Qualitative analysis–Content analysis
9.	Santos et al (2020)	Brazil	Qualitative
0.	Sallam et al (2020)	Jordan	Quantitative– (e-survey)
1.	Rovetta & Bhagavathula (2020)	Not mention	Qualitative– Content analysis

2.	Cinelli et al (2020)	Not mention	Qualitative–Content analysis
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Based on the synthesis of the qualitative review above, the following discusses the four main themes, namely the use of Instagram for research (two subthemes), to market product, as a basis for information tool (two subthemes) and social activity during the pandemic.

The Use of Instagram for Research

The first theme extracted based on paper review is the use of Instagram for research. Two subthemes have been formulated based on the main themes: qualitative and quantitative research. There are a total of 18 studies covering this theme, namely Kernder et al (2021); Hoyt et al (2021); Galhardi et al (2020); Jahangiri et al (2020); Ghimire et al (2020); Moraes et al (2020); Hikmah et al (2020); Herrera et al (2020); Zabadi et al(2020, 2021); Enver et al (2020); Culha et al (2020); Cohen et al (2020); Bolarinwa et al (2020); Mohsen et al (2021); Sulistyawati et al (2021); Arasli et al (2020) as well as (Scott et al., 2021). Sixteen studies cover the subtheme of quantitative research, while the remaining studies cover qualitative and mixed-method approaches.

The Use of Instagram to Market Products

The second theme extracted based on the paper review is the use of Instagram to market products. A total of four studies covered this theme, namely by Romo e t al (2020); Mackey et al (2020); Rendell (2020); Anacleto et al (2021), were all studies that had used the qualitative approach.

The Use of Instagram as a Basis for Information Tool

The third theme extracted based on the paper review is the use of Instagram as a basis for information tools. Based on the main themes, two subthemes have been formulated: obtain information and disseminate information. There are a total of 15 studies under this theme.

The studies under the subtheme of obtaining the information are namely Ali et al (2020); Atas et al (2020); Cato et al (2021); Sallam et al (2020) by using the quantitative approach, as well as Burzynska et al (2020) and Rovetta and Bhagavathula (2020) by using the qualitative approach.

For the subtheme of disseminating information through Instagram, the studies are namely, Forte and Pires (2020); Perez-Escoda et al (2020); Chang et al (2020); Niknam et al (2021); Malik et al (2021); Sharov (2020); Santos et al (2020); Cinelli et al (2020) by using the qualitative approach, and Ye et al., (2020) by using the mixed-method approach.

The Use of Instagram for Social Activity during the Pandemic

The fourth theme extracted based on the paper review is the use of Instagram for social activity during the pandemic. A total of five studies covering this theme, namely Parker et al (2021), as well as Srivastav, Sharma and Samuel (2021) by using the quantitative approach, Soekiman et al (2021); Lu et al (2021) by using the qualitative, and Fumagalli et al (2021) by using the mixed-method approach.

Discussion

This section discusses on theme extracted from the paper reviews conducted above. Altogether, four main themes have been extracted and will be discussed further below.

Theme 1: The Use of Instagram for Research during the Pandemic

Educators, particularly researchers, have found ways to utilize social media student activities (Carpenter & Justice, 2017) and professional learning (Xing & Gao, 2018). Furthermore, the usage of Instagram as a research mechanism was observed in this systemic review, where two themes were discovered as the subcategories: qualitative and quantitative research. The subcategories are explained further in the section below.

Subtheme: Qualitative Research

In qualitative research, Instagram was used as a medium for personal interviews, content analyses, observations, and case studies. By interviewing ten (10) and conducting content analyses of Instagram captions posted by these students of the English Language Teaching Study Program on the subject of Extended Writing during the pandemic of COVID-19 at Nahdlatul Ulama University of Purwokerto; Bestari, Faiza and Mayekti (2020) discovered that students prefer to use Instagram caption in language learning. This is because they have better grammatical understanding, confidence building in writing, writing as a daily habit during the COVID-19 pandemic, and improving vocabulary. In line with that, Indonesian researchers, Savitri and Irwansyah (2021) conducted content analyses observation and interview, in order to understand further the behaviour of an active user of Instagram stories. Additionally, most respondents regularly post positive Instagram stories and perceived an excellent service provided by Instagram during the pandemic. In Indonesia, using observation and case study zooming to the Ruangguru Instagram; a survey by Fattah and Sujono (2020) discovered the importance of social presence to connect with students during COVID-19 pandemic.

Based on the content analyses of Instagram posts and hashtags of the three vaccine-offering companies (Pfizer, AstraZeneca, Johnson & Johnson). AstraZeneca had an Instagram account longer than the other two; had the most posts and the highest rate of posting. However, it has the lowest number of followers (Amanatidis et al., 2021).

In Malaysia, studies were conducted on the usage of Instagram as a shopping tool among mothers. Using a phenomenology approach and in-depth interview among 20 mothers, Aziz et al (2021) discovered that cost and time efficiency, online trust and social media interactivity were the positive factors that encouraged Malaysian mothers to purchase products from Instagram. Taher (2020) found that Iraqi students love learning English using Instagram through online interviews through the Instagram platform. Instagram has enabled students to interact actively with their peers and lecturers to discuss task-related activities.

In the case of the Philippines' student's mental health during the double disaster (typhoon and COVID-19 pandemic), a mixed-method approach was used. Moreover, it was found that Instagram is being used to release stress and worries in facing challenging situations faced by these students (Cueto & Agaton, 2021).

Subtheme: Quantitative Research

Besides using Instagram for qualitative research purposes, Instagram is also being used for quantitative research, mainly using online survey. For example, Mahmoud et al., (2021) recruited respondents for their online survey using Instagram. In an attempt to investigate the effects of COVID-19 perceptions towards fashion brands on Instagram across two different generations in Uganda and Nigeria; Mahmoud et al (2021) recruited Instagram users. They had interactions with accounts of fashion brands on Instagram. This recruitment method guaranteed that researchers obtained suitable sample for their online survey.

In the study on personal safety practice among healthcare professionals in Latin America, Delgado et al (2020) also recruited respondents through social networking websites and applications (Twitter, Instagram, Facebook, LinkedIn, and WhatsApp) as well as from an existing database of the Inter-American Society of Cardiology (IASC). Respondents were then required to fill up an online survey using Google Form. Their findings revealed that most professional healthcare had access to protective equipment (gel hand sanitizer, disposable gloves, disposable gowns, disposable surgical masks, N95 masks and facial protective shields), personal safety policies and procedures and diagnostic algorithms. In assessing vaccine literacy among Croatian adults, Gusar et al (2021) have used the same data collection method by distributing Google form survey links to participants using e-mail, Facebook, and Instagram due to the pandemic limitations. Using snowball sampling, participants selected may distribute the online Google form to other potential participants aged 18 years and above to ensure more effective circulation of the questionnaire and representation of different respondents.

In capturing the Iranian population and health workers anxiety and depression symptoms during the pandemic, Hassannia et al (2021) distributed an online survey using Instagram, WhatsApp, Telegram and LinkedIn. The majority of the respondents filled up the online survey using WhatsApp, and very few filled up the questionnaire using Instagram. This could probably be due to most of the respondents being married and in the age range of 30 and above, whilst being fully occupied handling multitask work at home and office during the pandemic. Hence, they may have insufficient time to log in to Instagram to fill up the questionnaire. Meanwhile, the study of Yoruk and Guler (2020) focussed on depression among nurses and midwives in Turkey. In their study, due to the pandemic, online questionnaires were shared with nurses and midwives using Google Drive and were also distributed through WhatsApp, Instagram and Facebook. Approximately one-third of midwives and nurses were found to have symptoms of depression.

In an attempt to assess sleeping quality among healthcare workers, a self-selection survey was distributed on social media such as Facebook, Instagram and Twitter. As expected, these healthcare workers reported poor sleeping quality during pandemics, sleep disruptions (due to device usage and nightmares), insomnia, and burnout (Stewart et al., 2021). Of the same notion, Hikmah et al (2020) distributed an online survey (in Google Form) through social media platforms such as WhatsApp, Instagram, Facebook and Twitter to reach out Indonesian population. Their study covered factors associated with anxiety levels among the Indonesian population during the COVID-19 pandemic. Their study revealed that age, education level, average income per month, media exposure, physical activity, and anxiety diagnosis correlated with anxiety incidence.

By looking at the self-perceived changes in physical activity towards life satisfaction among Swedish adults, Eek et al (2021) collected data using an online questionnaire. The link to the online questionnaire was posted to their Instagram, Facebook and Twitter. Their study

discovered that respondents with decreased physical activity during the pandemic tend to have lower life satisfaction than those with increased physical activity.

Theme 2: The Use of Instagram to Market Products during the Pandemic

Instagram enhances online presence and identity, at the same time allows more effective interaction for personal reasons and business purposes (Abbott et al., 2013). It is important to note that during the pandemic, Instagram alone as a promotional tool does not significantly help in increasing the revenue. Nevertheless, other benefits can be gained instead of revenue. For example, Instagram is proven to be effective to optimize consumer engagement. Consumer engagement creates an understanding for business owners that it is not about the products sold. Consumer engagement activities such as inducing colour psychology, posting intellectual information, highlighting content, and benchmarking famous brand through Instagram would lead to brand awareness and loyalty (Parahiyanti et al., 2021). Other than that, Instagram usage can also encourage consumers for co-creation and collaboration, leading to higher consumer engagement. Previous studies have shown that engaged customers form positive attitudes, demonstrate repetitive purchasing behaviour, can potentially become ambassadors of a brand and create shared value with the organization (Nurnafia et al., 2021).

With regard to demographic factors that influence purchases made on Instagram, a study done by Djafarova et al (2021) has found gender to be a vital contributor to impulse purchase behaviour, particularly amongst Generation Z. Instagram is vastly influential in encouraging impulse purchases amongst Generation Z females. However, this is not the case for male users. This study also revealed that female participants use Instagram mainly for fashion inspiration. Meanwhile, male participants did not display impulsive traits and were not prone to having impulsive urges. Therefore, were much less likely to demonstrate impulse purchasing behaviour. Echoing this study, marketing managers may strategically select female Instagram celebrities as endorsers who can actively form parasocial interaction (PSI) with female consumers, which results in increased intention to buy the products endorsed by the Instagram celebrities whom they perceive as friends.

On the other hand, when targeting male consumers, Instagram celebrities can evoke envious feelings, which results in buying the envied products promoted by the Instagram celebrities. This enables businesses to develop closer relationships with consumers and maintain high-quality relational brand communication, which ultimately increases sales and helps consumers form loyalty to the businesses (Jin & Ryu, 2020). However, in the work of Belanche et al (2020), it is highlighted that the fit between the influencer and the products promoted is a crucial factor in fostering subsequent positive behavioural intentions (both towards the influencer and the brand) in influencer marketing campaigns. Marketers need to increase their knowledge of the users interested in particular influencers, as this is a determining factor in achieving a better understanding of the effectiveness of influencer marketing actions. Ideally, brands should work hand in hand with influencers to generate stories that intertwine their products with the regular content published by the influencer. These measures will create a higher perception of fit between the influencer and the products promoted, which, in turn, will foster positive behaviour towards the products.

Furthermore, brands are perceived as more credible when advertising recognition is high. When consumers realize that the message is an advertisement, they may perceive it as more authentic when posted by the brand. Moreover, brands can have more expertise and knowledge about their products or services than their influencers. Meanwhile, influencers are more greatly admired, that they become influential sources of advice for their followers. The results reveal that influencer posts lead to higher brand liking, whereas brand posts lead to higher brand awareness (De Jans et al., 2020). However, it is interesting that Instagram influencers cannot influence online consumers' purchase intention of cosmetic and beauty products. Meanwhile, brand image can influence the online consumers' purchase intention through the quality, price, ease of use, uniqueness and benefits obtained from the products (Putri & Tiarawati, 2021).

Apart from finding the right fit between an Instagram influencer and the products being promoted, consumers peruse Instagram posts and judge whether what they see is trusted content as they utilize the information for evaluating a product online. For example, when it comes to online apparel shopping, the inability to try on apparel before purchasing makes consumers look more carefully for product reviews to make better purchasing decisions. Consumers perceive post popularity and the argument quality of a post as cues signalling trust. Apparel brands should encourage influencers to post quality product reviews and information to generate authentic and trustworthy contents. Moreover, marketers should manage the post attractiveness of Instagram by leveraging its visual storytelling feature for promoting products and further engagement with brands (Yang et al., 2020).

Perceived creativity is another crucial aspect of Instagram that will boost companies' efforts to market their product through social media. The positive emotions and affective commitment act as partial mediators in the relationship between perceived creativity and interactive intentions. This can help managers ensure that content that makes their followers perceive that a brand is creative engages them to a greater extent in the account. By triggering perceptions of creativity through the branded content uploaded, managers can strengthen their brands' affective bonds with the members of brand-focused Instagram communities. This will increase consumers' importance to the relationship and, in turn, lead them to be more motivated to participate in the account and eventually make purchases (Casaló et al., 2021). In response to being creative on Instagram, a study by Mazerant et al., (2021) implies that one particular brand message cannot be posted on all social media platforms, which means, when designing brand messages, the medium context and its functionalities should be taken into account.

Nevertheless, the same brand message is often posted on Twitter, Instagram, and Facebook in practice, stimulated by the ubiquitous, embedded buttons to share tweets and regram the same message with a simple click. It is also suggested that craftsmanship is the most critical driver of consumer responses. Primarily, on a visual-oriented platform such as Instagram, practitioners should focus on the visual attractiveness of brand messages (Mazerant et al., 2021).

These studies bring relevant information to businesses to develop virtual consumer engagement. They also allowed them to develop a better strategy to reach new Instagram followers. It is made possible by analyzing their behaviour which may increase the probability

that a product can be successfully marketed on Instagram. In the work of Mazzalo et al., (2021), utility, entertainment, and socialization tend to be direct antecedents of user satisfaction when using Instagram. Once users are satisfied with the content they view on Instagram; they will probably be motivated to follow and interact with other Instagram accounts, impacting the intention to purchase any product presented or endorsed by the accounts followed by the user.

Furthermore, by following or interacting with other accounts, any user has the possibility of producing content (user-generated content), giving opinions, interacting, sharing and influencing other users, regardless of whether or not they are a celebrity. Rather than spending high figures on celebrities and digital influencers, it may be more efficient to invest in ordinary users of Instagram. They have a good number of followers, high content generation and a high engagement rate, which will keep the page busy and the product exposed to many people (Mazzarolo et al., 2021).

Theme 3: The Use of Instagram as a Basis for Information Tool during the Pandemic

Subtheme: Obtain Information

The widespread use of social media has changed the way people worldwide receive news and information (Seltzer et al., 2015). Furthermore, social media applications have also played a pivoting role in public health crises management (Denecke & Atique, 2016). This is evident in this review as traditional communication is no longer the primary source of current news on the recent COVID-19 pandemic. The social network, including Instagram, has become the alternative source for information and consumption content (Pérez-Escoda et al., 2020).

In Abu Dhabi (UAE), the study found that the respondent agreed that social media such as Instagram is a reliable source of information about COVID-19. Other primary sources to gain the information on COVID-19 were from official government websites that used news media (TV/video, magazines, newspapers, and radio) and social media (Facebook, Twitter, WhatsApp, YouTube, Instagram, Snapchat) (Bhagavathula et al., 2020). Khalifa et al (2020) further highlighted that populations in Arab countries tend to get information about COVID-19 through Twitter, Facebook, Instagram, Tik Tok and other social media.

Ye et al (2020) stated that in Sweden, first-year pharmacy students preferred to interact via Instagram as a platform to obtain information than using the traditional communication channel, student portal and e-mail. The study explored that Instagram is an interactive communication channel for students to gain information and conveniently access the material provided during the pandemic. Another study in Turkey also stated that university students mainly obtain information about COVID-19, knowledge about COVID-19, depression and stress from various sources during the pandemic. Furthermore, most of them used television, web search, Instagram, YouTube, Twitter and Facebook to obtain information about COVID-19. In addition, the participants pointed out that these sources are reliable, can be quickly obtained and able to share information (Unal et al., 2021).

In line with that, the study in Indonesia revealed that people actively exchanged information during the pandemic and posted via hospitals' Instagram accounts to add their knowledge about COVID-19 (Al Aufa et al., 2020). Most Indonesian respondents used WhatsApp and Instagram to gain information and health advice regarding COVID-19. Meanwhile, most respondents believed they were not responsible for acting according to the advice (Arsyati et al., 2020).

Afshari et al (2021) further added that the study in Iran discovered that students of medical and sciences majority referred to social media such as WhatsApp, Instagram and Telegram as a source to gather information about COVID-19. This showed that social media has become a new medium in obtaining scientific information during the pandemic. Additionally, the Indonesians' Instagram followers most viewed and gathered information on the Instagram influencer. The information gathered from these Instagram influencers includes educational content about educational socializations when leaving the house, the use of masks and knowledge to protect them from the COVID-19 virus (Annisa et al., 2021).

Contrarily, not everyone trusts information obtain from Instagram. For example, in Nigeria, university students use Instagram less as a source of valid health information related to the COVID-19 pandemic (Adeleke et al., 2020). Information related to Covid 19 received by health authorities such as Center for Disease Control (CDC), World Health Organization (WHO) and public health specialist are more reliable because they provide effective source of preventative health information and promotion of healthy lifestyle, as compared to source of information provided by social media such as Instagram.

Subtheme: Disseminate Information

Social media has become an important medium to disseminate health content to their family members during the pandemic. The younger generation keeps on sharing and obtaining information via Instagram regarding the habit of wearing masks, cleaning hands and the importance of maintaining social distances to protect themselves from COVID-19 (Sharif et al., 2021). Social media platforms, namely Facebook, Instagram, Twitter, TikTok and others, have become the first medium to disseminate the latest news of the coronavirus.

In Arab countries, social media is the primary source of sharing the current pandemic information between individuals, friends, and families (Khalifa et al., 2020). In Asia countries, a study in Indonesia stated that most social media users obtain and disseminate COVID-19 information through Instagram and WhatsApp. In addition, another study revealed that social media is a practical and helpful platform for disseminating information during pandemics (Arsyati et al., 2020). The purpose of disseminating information via Instagram by the media, NGOs, and government in Indonesia serves the specific group's interest. The dissemination of information about the COVID-19 pandemic on Instagram contains text, photos, videos with memes, funny elements and organizes (Sulistyaningtyas et al., 2020). The respondent in Indonesia used Instagram to disseminate information regarding COVID-19 and what can be done during a pandemic while quarantined at home. Some of the users spend time cooking, colourings for children, and posting to remind others to protect themselves by using the hashtag #stayathome Indonesia (Soekiman et al., 2021).

Romo et al (2020) highlighted that in Spain, the Instagram influencers focused on sharing content on symptoms and risks of COVID -19. Besides, publication was made on the regulation to prevent the virus from spreading among the community. The Instagram influencers believed that by disseminating informative content on health issues, particularly COVID-19, they could increase the number of followers. This is because currently, people want to be updated with the latest information related to the COVID-19 pandemic from reliable sources. In addition, the official National Disaster Management Authority made the initiative to collaborate with a strong social media influencer to reach and engage the public on COVID -19 issues through the social media platform. As a result, the platform successfully

gains visibility and disseminates current information about COVID-19 through picture posts and Instagram stories (Sadasri, 2020).

A study in Canada revealed that during the quarantine due to COVID-19, the Instagram user was more concerned about the importance of image-based content. The user disseminates more on the content of weight, diet and physical activity using hashtag #quarantine15 (Lucibello et al., 2021). A similar study in the United States of America agreed that Instagram users prefer to disseminate information that focuses on the importance of image-based content due to the COVID-19 pandemic. Using the hashtag in the post positively impacts greater engagement and positive interaction via Instagram (Plack et al., 2021).

Quinn et al (2021) discovered that spreading misinformation, untruth, and other authority question beliefs about COVID-19 on Instagram leads followers to misunderstand public health recommendations on vaccination, mask-wearing, and physical distancing can increase the risk of spreading the virus to others.

Theme 4: The Use of Instagram for Social Activity during the Pandemic

The usage of social media, particularly Instagram, has a crucial impact on social connections, as they are crucial for society's health and well-being. The COVID-19 pandemic has caused society to practise social distancing measures resulting in significant changes to social lives. As such, face-to-face interactions have been constrained. The online space has exploded, amplifying the importance of virtual interactions on social network sites like Facebook, Instagram, and Twitter. This paper reviews the significant effects of social media, particularly Instagram, on people's social activities during the pandemic.

Active user in social network sites is positively associated with well-being through social support. Otherwise, passive user in social network sites is negatively associated with well-being through upward social comparison (Masciantonio et al., 2021). However, it is worth noting that interpersonal media (phone calling, texting, video chatting) are ideal for social connection. Mass personal media (Facebook, Instagram, Twitter) are preferred for entertainment and information seeking. Furthermore, social use of interpersonal media was associated with decreased loneliness and, in turn, increased satisfaction with life. Meanwhile, using media for information seeking was associated with increased loneliness and, in turn, decreased satisfaction with life (Choi & Choung, 2021).

Zdonek and Kro's (2021) work confirmed that the pandemic affected their activity in social media. Hence, it is worth to note that the influence depends on personality rather than sex. Extroverts and more empathic people focused on social harmony and cooperation that exhibited a more significant increase in social media activity, than introverts and people who tend to conceal their feelings (Zdonek & Kro, 2021). In comparison, the predominant usage of Instagram by Baby Boomers and Traditionalists is mostly for relationship surveillance, which entails a relatively passive form of relationship maintenance that involves following a friend's posts rather than directly communicating with the friend. Instagram has also often been used for documentation and inspiration needs, to catalogue events and create positive memories that promote life satisfaction. Social activity has been a positive predictor of using Instagram for relationship surveillance, documentation, and self-promotion. Those who travel more and frequently participate in real-world leisure activities were more likely to use

Instagram to monitor their friends' activities. Instagram enabled older users to compensate for the lack of face-to-face contact and decreased life satisfaction (Sheldon et al., 2021).

On the other hand, in Indonesia, it was further discovered that Millennial Instagram users experience Fear of Missing Out (FoMO) and Joy of Missing Out (JoMO) while undergoing Large-Scale Social Restrictions (PSBB). They obtained more experience with JoMo than FoMO. Individuals who experience FoMO have low life-needs satisfaction and bad mood because they cannot communicate face-to-face. They continually check their friends' activities on Instagram, compare themselves, feel anxious and envious because their friends look more productive. Meanwhile, JoMO individuals have the satisfaction of life and have good mood because they think the important thing is they still can fulfil their primary needs. Inefficient communication does not affect them that much. They do not care about what is happening and what their friends are doing on Instagram (Paramita et al., 2021).

Humans need to be noticed by others, so they need to do things that make others care. It is manifested in the concern for other people today by commenting or leaving likes on their social media. To attract the attention of others, it is necessary to have exciting things expressed through one's existence. One of the existences that most people do during this pandemic is cycling to strengthen the body's immunity. They share their existence on Instagram by sharing photos of their cycling activities to establish relationships with other users during the pandemic (Tutiasari et al., 2021).

From a different perspective, Instagram is also used to showcase appearance-focused images of lower-weight individuals, oversimplify weight gain as an issue of food consumption and lack of physical activity, hence it demonstrates dislike towards weight gain and higher-weight. Most of the content is focused on the body itself. The message is exacerbated within the context of COVID-19, which revealed that bodyweight is prioritized even during a pandemic that has threatened the physical and mental health of billions of people (Lucibello et al., 2021).

In addition, during the isolation period, individuals that are sharing physical activity experiences on social network sites, such as Instagram establish a positive social image and obtain positive feedback from others, thereby enhancing social connectedness. As technology develops, people are more willing to extend and augment their interpersonal relationships in reality through self-presentation and positive interpersonal interaction on social network sites like Instagram. Such social network sites help individuals to get rid of the social distress in fundamental social interactions. Particularly during the pandemic, people will try their best to keep the image consistent with the social image to obtain praise and lovely comments from others, thereby alleviating the impact of social isolation (Zuo et al., 2021).

Instagram acts as a medium to facilitate virtual social activities; hence, it can potentially become an entity that people befriend. In a study conducted by Sudarto (2021), users interpret Instagram as a friend because the former spend most of their time with it, wherever and whenever they feel dependent. Users interpret Instagram as a friend by trusting the platform and telling stories through captions or posts, stories, feeds, or live. Users interpret Instagram as a friend by considering it as one who is needed and essential in the user's life. The reasons being without Instagram, users feel homesick, lacking, confused, and exerted.

Instagram provides many features for self-expression which is an integral part of what humans do to show self-expansion.

Users initially used Instagram to display photos to show their identity. Instagram then becomes a place to tell stories as well as a means of knowledge and entertainment by sharing experiences of how users feel or want to convey. Apart from getting to know others, friendship on Instagram users also take advantage of this application to help one another. The help provided by Instagram users is usually the mutual promotion of products owned by users (Sudarto, 2021).

People are generally motivated to use social media such as Instagram for reasons such as to pass the time, build a new virtual community, seek companionship, and maintain relationships. People who score highly for extraversion now use social media like Instagram for relationships maintenance, suggesting that social media use might replace face-to-face interaction with existing friends. This study findings suggest that online social behaviour is now an explicit reason for social media use like Instagram (Bowden-Green et al., 2021).

Conclusion and Recommendations

This systematic review has highlighted the use of Instagram during the COVID-19 pandemic. In the past two years, it has been discovered that several articles on youth online learning have been published throughout the world. A total of forty-two articles have been discovered with four main themes relating to the usage of Instagram during the COVID-19 pandemic, namely research, market products, as a basis for information tools, and social activity during the pandemic.

Based on the review, it was found that Instagram is being used during the COVID-19 pandemic for information search related to the pandemic. Instagram is also being used for research, particularly research related to the pandemic and online questionnaire distribution due to movement control order that restricted the movement of researchers to conduct fieldwork manually. Besides, Instagram is also being used to market products online, such as an Instagram shop. Due to movement control order, there is a restriction in business operations, thus making sellers think of different ways to market their products, namely, selling their product online through operating an Instagram shop to market their products. Besides that, Instagram is also being used to communicate, that is, social activity. Since most of the world population cannot meet one another to communicate face-to-face, due to movement control order (lockdown), Instagram is being used as an interaction means between friends and family members.

This research has only covered one database, namely Scopus. Thus, including other databases such as Web of Science will provide more insights into past literature relating to the research at hand. Besides, this research only covered the usage of one of the social media platforms during the COVID-19 pandemic, namely Instagram. Using other social media platforms such as Facebook, Tik Tok and Twitter may provide different insights and warrant further research. Moreover, noting that there are many loopholes in this research that remain uncovered, it would be interesting for future qualitative researchers to conduct systematic or umbrella reviews which may provide different insights and perspectives.

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