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Is the Degree of Social Media usage Influencing COVID-19 Vaccinations in Jamaica?

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Abstract

Social media (SM) has improved the lives of many individuals through sharing, learning, marketing, and interacting. However, SM has at times offered misleading information, thereby giving rise to false narratives. This quantitative investigation examines the relationship between SM usage and COVID-19 vaccination, and explores whether usage of particular SM platforms offer any clues regarding one's disposition towards taking the COVID-19 vaccine. The Analytical methods used in this research included convenience non- probability sampling (n= 1080), and a questionnaire generated using Google Forms, and consisted of 24 close-ended questions was implemented to collect data. A message containing the link to the survey was forwarded to participants using the SM platforms, WhatsApp and Instagram. Participants were 18 years of age and older, and residing in Jamaica at the time of the survey. Cross Tabulation, Pearson's Chi Square test, and the KMO and Bartlett's Test were also used to determine the relationship between independent and dependent variables, and all retrieved data were analyzed using Google Forms, IBM Statistical Package for the Social Sciences (SPSS) for Windows. On average, SM usage among Jamaicans was found to be appreciatively high (Mean= 37.58 ± 10.26, out of 60.0). At alpha= 0.05 the Chi Squared test was found to be statistically significant due to the p- value (< .001) < 0.05. In short, COVID-19 vaccination rate was shown to have a high correlation with SM usage and appeared to favor specific SM platforms.

Keywords: Social media, COVID- 19, vaccination, Jamaicans.

Introduction

Social media (SM) groups are an effective tool in times of emergency when people feel an urge to respond quickly but anticipate too many bureaucratic obstacles to join established Non-Governmental Organizations (NGOs) (Carlson, et al., 2016; Trifiro & Gerson, 2019; Tufts University, 2022). The use of social media serves other purposes: a mechanism for spreading information during different disasters, allowing users to watch their friends' activities or report unacceptable behaviour. Through messaging, current information is visible to a user's fans or followers. In the case of an international emergency such as a pandemic, the dissemination of factual and timely information is a crucial part of the collective response. Furthermore, users adopt social media to fit their needs and collaborate with others. Such collaborations may produce useful information for others during a crisis (Kaewkitipong *et al.*, 2016; O'Brien *et al.*, 2020). COVID-19 Vaccines Global Access Facility (COVAX) seeks to provide vaccines for at least 20% of the population of each participating country during 2021 (World Health Organization (WHO), 2021). In the first round of vaccine allocation, all COVAX participating countries received doses to vaccinate between 2.2 and 2.6% of their population (Pan American Health Organization (PAHO) & WHO, 2021).

Since the beginning of the COVID-19 pandemic, information has been abundant, with nearly every media channel covering the latest developments. Vaccine information is available through traditional and social media. This information may be very influential in swaying public opinion as to whether or not members of the public want to be vaccinated. Past research has found that online forums, blogs, and social media have contributed to the spread of vaccine hesitancy (Dubé, et al., 2013; Karafillakis et al., 2021; Nair, *et al.*, 2021). Prior researchers examined how social media platforms contribute to vaccine hesitancy by promoting personal narratives over empirical data and connecting anti-vaccination themes to broader belief systems of freedom of choice and parental rights. Social media continues to be a vehicle for COVID-19 misinformation (Monar & Israeli, 2021). The purpose of this study is to determine if high to very high social media utilization is less likely to take the COVID-19 vaccines and if the use of a preferred social media platform influences the COVID-19 vaccination rate. This investigation will provide empirical evidence to refute or support the influential nature of misinformation on social media.

Literature Review

SM platforms have been used by various individuals to research and share health-related information that could influence their decision-making regarding COVID-19 vaccination. The spreading of the respective COVID-19 variants have become a major public health problem due to the potential impact on case rates, hospital occupancy, and ultimately the death rate among infected persons. According to Bambra, et al. (2020) and Goldin & Muggah (2020), the COVID-19 pandemic has also exacerbated current economic woes, which in turn has led to deteriorating health inequities.

However, the remarkable speed at which a number of COVID-19 vaccines have been developed - AstraZeneca, Sinopharm, Sinovac, Pfizer, and Moderna - and their authorization for emergency use, in less than one year, has been hailed as a great achievement within the scientific

community. Yet, despite favorable safety and effectiveness profiles, the processes which led to the rapid development of vaccines also prompted strong public concerns, which in turn led to pervasive negative views regarding the efficacy of the vaccines, vaccination acceptance, and ultimately led to vaccine hesitancy. Although vaccine hesitation has had a long history, it is also reasonable to assert that in today's climate of Internet access, misinformation has become more prevalent. Moreover, as some experts have observed, fear and misunderstanding of the vaccine development and approval processes has made the propagation and spreading of misinformation more likely (Alfatease et al., 2021).

In the past, traditional media sources have been effective in keeping the public informed regarding the consequences of pandemics. However, in recent decades, and most recently with the emerging infectious COVID-19 disease, public demand for a more robust media sources and coverage has become more self-evident. SM, therefore, has had an opportunistic impact on the perceptions, decision-making and risk behaviors of the pandemic. As more individuals share information on SM, the accuracy and factuality has become more difficult to verify.

Precise and timely reporting on variants as well as other emerging pandemic risks, such as SARS-CoV-2, essential to the public's interest becomes more difficult to disseminate. In response to global public health crises, SM users generally develop and share information on treatment availability from both local and international sources. Meanwhile, professional and governmental agencies in the healthcare sector have adapted to SM in efforts to control and manage the flow of negative information during health crises. Yet, it appears obvious that various age groups continue to seek answers via their preferred SM sites. Accordingly, the present study utilized Twitter, WhatsApp, and Facebook, in its data collection efforts in order to determine the impact of SM on vaccine acceptance or hesitancy.

The World Health Organization (WHO) suggested that a number of SM platforms are sources of misinformation regarding the COVID-19 pandemic, which may lead to significant risk to public health. Moreover, reports are that the Ministry of Health in Saudi Arabia launched a vaccine campaign, using Sehaty, a mobile application, which, makes it easier to register for the COVID-19 vaccination (Ministry of Health-Kingdom of Saudi Arabia, 2021). Several vaccination centers have been set up in various cities throughout the country to mitigate against the spread of COVID-19, and the Pfizer BioNTech COVID-19 Vaccine campaign, whose aim it is to offer Saudi Arabian's free vaccine, kicked off on December 17, 2020. Intrinsic in all of these governmental initiatives is an attempt by the government to gain a better understanding of the influence of SM on the attitudes and willingness of the general public of the Aseer region of Saudi Arabia to become fully vaccinated against the COVID-19 disease (Alfatease et al., 2021).

According to Social Learning Theory, one's social environment plays a critical role in shaping one's health-related behaviors and intentions. Such learning process can take place through online and offline social interactions. Since the COVID-19 pandemic, there have been some evidence to suggest that frequent SM exposure and/or interpersonal communication regarding COVID-19 pandemic have been associated with the adoption of preventive measures (e.g., face mask-wearing and hand washing). However, only relatively few studies have explored such relationships in the context of COVID-19 vaccination. One such study of Chinese respondents

uncovered that higher passive SM exposure, active SM interactions, coupled with peer discussions were positively associated with intention of COVID-19 vaccine acceptance among university students. Another reported study by the same authors, showed that exposure to information via SM had a positive effect on intention of COVID-19 vaccine acceptance among the British population but not among Americans. Still, other studies revealed that SM users had lower intentions of COVID-19 vaccination than non-users and/or traditional media users (Xin et al., 2021)

SM provides important interactive platforms for information seeking and sharing that can facilitate disaster preparedness. Their functions are particularly crucial in times of public health emergencies. SM can also be used to promote and enhance public perception and motivation regarding COVID-19 vaccination, by disseminating timely information and updating information about COVID-19 vaccination protocols (e.g., approvals and applications in various countries). In general, such information may reduce uncertainty and facilitate decision-making regarding vaccination protocols. However, SM messages oftentimes contain widespread misinformation, rumors, and anti-vaccine sentiments that could encourage vaccine hesitancy. As such, it is appropriate to investigate how frequencies of exposure to related adverse information via SM affects the intention of COVID-19 vaccination (Xin et al., 2019).

According to ORAU (2021), there is overwhelming scientific evidence pointing to vaccinations as essential for preventing many potentially deadly and debilitating infections in children, teens, and adults (polio, measles, influenza, and the human papilloma virus). Despite this evidence, some pregnant women and parents choose to delay certain vaccinations or to not have themselves or their children vaccinated at all. This growing phenomenon, termed vaccine hesitancy, is believed to be the cause of several vaccine-preventable disease outbreaks in the United States. The majority of vaccine communication research has centered on addressing vaccine hesitancy in pregnant women and parents of young children. A smaller but growing volume of research has focused on vaccination hesitancy impacting teens and adults (ORAU, 2021).

A number of studies have investigated the anti-vaccine rhetoric on SM, and posit that SM was a key contributor to vaccine hesitancy in some communities. However, few studies have explored the effectiveness of SM or web-based platforms for improving vaccine-hesitant attitudes and rates of vaccine adherence for the various types of vaccines. Additionally, the authors of this study have not found a single study systematically comparing both pro- and anti-vaccine messages to characterize the nature of the arguments that they invoke or to analyze participant's responses to such arguments.

Theoretical Framework

The theoretical framework undergirding this investigation was formally developed by Marshall McLuhan in 1964, and re-introduced in 1968 by Neil Postman as the Media Ecology Theory (McLuhan, 1964l Postman, 1976). The tenets of this theory as first delineated by McLuhan, aimed to understand the effect and social impact of technology and communication through mediums (McLuhan, 1964). The ubiquitous and constant theme was that "the medium is the message". McLuhan placed emphasis on the various techniques used to communicate

information that had a notable impact on the messages they delivered (Griffin, 2019). According to McLuhan, "a chair is as much a medium as is a newspaper. The content of the chair is the person sitting in (on) it, whereas the content of the newspaper is its news stories and its advertisements" (Logan, 2016, p. 135). He further noted that it was impossible to find a group of people who were not affected by electronic media. The media ecology theory, he asserted, focused on the idea that it was entirely impossible for society to escape the influence of technology and that technology will always remain integral to almost every action in modern life (Moreno, 2016). Accordingly, the tenets espoused by McLuhan in his Media Ecology Theory grounds the purpose of this research investigation which seeks to highlight correlations between SM usage and the consequential impact on COVID-19 vaccine acceptance or hesitancy.

Methods and materials

This studies employed a correlation research design by way of a cross-sectional web-based survey. For the purpose of this research, Jamaica's population for 2018 population was used to complete the sample size (i.e., 2,726,667; Statistical Institute of Jamaica, 2021). A confidence interval of 95% and a 2.98% margin of error were utilized to calculate a sample size of 1,082. A team was trained in data collection and ethics before engaging in the data collection process. The team collected data from 1,067 male and female participants from the 14 parishes of Jamaica: Kingston, St. Andrew, St. Thomas, Portland, St. Mary, St. Ann, Trelawny, St. James, Hanover, Westmoreland, St. Elizabeth, Manchester, Clarendon, and St. Catherine. Due to the government ordered lockdown and other established COVID-19 protocols instituted by the Ministry of Health and Wellness, Jamaica, convenience sampling (non-probability) became the best choice of data collection method. The data was collected between September 26 through November 31, 2021.

The survey was generated using Google Forms, and consisted of 24 close-ended questions (see appendix 1). Of the 24 questions, 12 were from the Social Media Addiction Scale developed by Unal and Deniz (2015). A message containing appropriate links to the survey was circulated using the SM platforms, WhatsApp and Instagram, and was completed by respondents who were 18 years of age and older, and at the time, living in Jamaica. Respondents were appraised regarding the purpose of the study as well as the applicable guidelines, including the fact that participants had to be Jamaican citizens 18 years and older. Respondents were also informed that by submitting their questionnaire, they were consenting to be a part of the study. Throughout the study, confidentiality and anonymity were maintained as researchers avoided the use of questions that involve the mining of personal data that could compromise the identity of participants. The retrieved data was analyzed using Google Forms, IBM Statistical Package for the Social Sciences (SPSS) for Windows. Frequencies, percentages, and cross tabulations were used to analyze the data, and a P value of 5 per cent was used to determine statistical significance.

Results

The demographic characteristics of the sampled respondents are presented in Table 1. Of the sampled population (n=1080), 60.4% (n=652) were females compared to 39.6% (n=428) males. Approximately 28.8% of respondents were between the age cohort of 18-27 years old, 19.8% between the 28-37 cohort, 19.1% between the 38-47 years old, 17.4% between 48-57 cohort,

8.2% were between 58-67 year old cohort, and 6.7% were 68 years and older. The information in Table 1 also revealed that 6.6% (n=71) of respondents had attained a tertiary level of education, compared to 55.9% (n=604) a secondary level of education, and 37.5% (n=405) a primary level education respectively.

Table 1.Demographic Characteristics of the Sampled Respondents, n=1,080

Details	% (n)
Gender	
Male	39.6 (428)
Female	60.4 (652)
Age Cohort	
18-27 years	28.8 (311)
28-37 years	19.8 (214)
38-47 years	19.1 (206)
48-57 years	17.4 (188)
58-67 years	8.2 (89)
68 years and older	6.7 (72)
Level of Education	
Primary	37.5 (405)
Secondary (High School)	55.9 (604)
Tertiary (University)	6.6 (71)
Area of Residence	
Kingston	8.2 (89)
St. Andrew	9.2 (99)
St. Thomas	6.6 (71)
Portland	6.3 (68)
St. Mary	7.1 (77)
St. Ann	6.9 (75)
Trelawny	6.0 (65)
St. James	6.8 (73)
Hanover	6.0 (65)
Westmoreland	6.4 (69)
St. Elizabeth	8.5 (92)
Manchester	6.5 (70)
Clarendon	6.1 (66)
St. Catherine	9.4 (101)

Table 2 presents respondent's responses to questions related to SM. Of the sampled population, 96.2% (n=1039) indicated that they used social media, of which 30.9% (n=323) selected WhatsApp as their preferred social media platform.

Table 2.Issues on Social Media

Details	% (n)
Social Media Usage	
Yes	100.0 (1080)
No	3.8 (41)
Type of Social Media Used	
Instagram	24.6 (257)
TikTok	9.6 (100)
Facebook	13.1 (137)
Twitter	12.5 (130)
Snapchat	3.3 (34)
WhatsApp	30.9 (323)
YouTube	6.0 (63)
Frequency of Social Media Usage	
30 minutes	8.8 (92)
1-3 hours	39.3 (411)
4-6 hours	33.4 (349)
8+ hours	18.5 (193)
False information on social media regarding the COVID-19 vaccine	
Yes	91.0 (983)
No	9.0 (97)
Awareness that some social media platforms have fact-checking tools	
Yes	47.7 (515)
No	52.3 (565)

Table 3 presents participant's responses to COVID-19 related questions. Of the sampled respondents, 32.9% (n=355) indicated that they were fully vaccinated, 20.3% (n=219) indicated that they received the first dose only, and some 46.9% (n=506) had not taken the vaccine.

Table 3.COVID-19 Related Issues

Details	% (n)
Vaccinated against COVID-19	
Yes, I am fully vaccinated	32.9 (355)
Yes, 1st dose only	20.3 (219)
No	46.9 (506)
Did social media influence your decision to take (or not to take) the COVID-19 vaccine?	
Yes	43.4 (469)
No	56.6 (611)
Primary source of information regarding the COVID-19 vaccines	
Social media	28.4 (586)
Health Organizations	25.2 (519)
Television	37.6 (775)
Newspaper	8.7 (180)

Social Media Addiction Scale

Before researchers implemented the Social Media Addiction Scale, exploratory factor analysis was used to ascertain the suitability and appropriateness of such a scale in Jamaica. The Cronbach Alpha for the 12-item scale (Social Media Addiction Scale) was determined to be 0.944, which indicated that the items were suitable for factor analysis. Exploratory factor analysis revealed that the 12-items were suitable and appropriate for factor analysis [KMO and Bartlett's Test (Kaiser-Meyer-Olkin Measure of sampling adequacy = 0.954, P <0.0001)]. It could be inferred from the exploratory factor analysis, that the 12-item scale was appropriate to assess SM usage among Jamaicans (see Appendix 4).

Table 4 presents the descriptive statistics for SM addiction scale for Jamaicans (Mean= 37.58 ± 10.26, out of 60.0). On average, the SM usage among Jamaicans could be construed as being high given the age demographic distribution highlighted in Table 1.

Table 4.Descriptive Statistics for Social Media Addiction Scale for Jamaicans

Social Media Addiction Scale		**Statistics**	**Std. Error**
Mean		37.5852	0.31231
95% confidence interval for Mean	Lower Bound	36.9724	
	Upper bound	38.1980	
5% Trimmed Mean		37.4588	
Median		37.0000	
Variance		105.340	
Std. Deviation		10.26354	
Minimum		13.00	
Maximum		60.00	
Range		47.00	
Interquartile Range		14.00	
Skewness		0.175	0.074
Kurtosis		-0.347	0.149

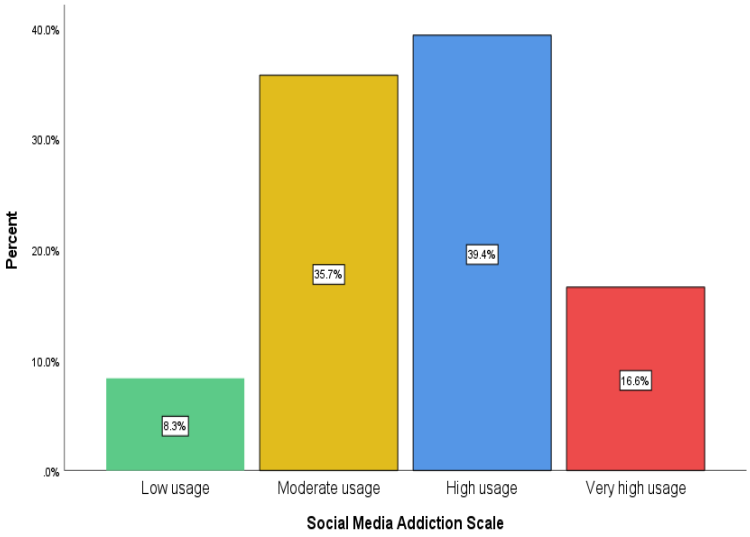

Figure 1.Social Media Addiction among Jamaicans

The results of Figure 1 revealed that (39.4%) of respondents demonstrated high SM usage, while 35.7% expressed moderate SM usage, and 16.5% showed very high SM usage, and only 8.3% of respondents demonstrated low SM usage.

Hypothesis:

Table 5 revealed that vaccinated respondents, or participants who had received their first dosage were most likely to demonstrate very high SM usage. The data also revealed that was a high correlation between COVID-19 vaccination and the degree of SM usage (p- value (< .001) < 0.05).

Hypothesis:

H0- There is no statistical association between SM usage and COVID-19 Vaccination status

H1- There is a statistical association between SM usage and COVID-19 Vaccination status

The null hypothesis was rejected, and the test shown to be statistically significant

Table 5.A cross tabulation between COVID-19 vaccination status and Social Media Usage

Have you taken the COVID-19 vaccine?		**Social Media Addiction among Jamaicans**				
		Low usage	**Moderate usage**	**High usage**	**Very high usage**	**Total**
Yes, I am fully vaccinated	n	14	92	137	112	355
	%	15.6%	23.8%	32.2%	62.6%	32.9%
Yes, 1st dose only	n	9	62	114	34	219
	%	10.0%	16.1%	26.8%	19.0%	20.3%
No	n	67	232	174	33	506
	%	74.4%	60.1%	40.9%	18.4%	46.9%
Total	n	90	386	425	179	1080

Table 6 shows that respondents who favored Instagram were less likely to be vaccinated, while participants who favored WhatsApp were more likely to be vaccinated, having received at least the first dose. The Chi Square also showed that there was a statistical relationship between respondent's type social media used and whether or not they were vaccinated. (p- value (< .001) < 0.05). The null hypothesis was rejected, and the test shown to be statistically significant

Hypothesis

H0- There is no statistical association between respondent's type social media used and their COVID-19 Vaccination status.

H1- There is a statistical association between respondent's type social media used and their COVID-19 Vaccination status

Table 6.A cross tabulation between COVID-19 vaccination status and type of social media used

Details	Type of Social Media Used							Total
	Instagram	TikTok	Facebook	Twitter	Snapchat	WhatsApp	YouTube	
	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
COVID-19 vaccination status								
Yes, fully-vaccinated	23.0 (59)	28.0 (28)	32.1 (44)	50.8 (66)	11.8 (4)	32.5 (105)	38.1 (24)	31.6 (330)
Yes, partially	13.6 (35)	16.0 (16)	27.7 (38)	40.0 (52)	17.6 (6)	18.3 (59)	14.3 (9)	20.6 (215)
No	63.4 (163)	56.0 (56)	40.2 (55)	9.2 (12)	70.6 (24)	49.2 (159)	47.6 (30)	47.8 (499)
Total	257	100	137	130	34	323	63	1044

Discussion

The COVID-19 pandemic has caused individuals to spend more time at home due to governmental lockdowns and curfew mandates, thus causing individuals to spend more time on their cell phones, and other SM gadgets. SM not only allows for individuals to connect with each other, but also to keep up-to-date with information regarding the COVID-19 pandemic and the development of vaccines. This research project posits that one's usage of a particular SM platform, coupled with one's SM usage directly impacts one's COVID-19 vaccination status.

Since the beginning of the pandemic, SM has been used to disseminate misinformation online regarding COVID-19 and the COVID-19 vaccines (BBC, 2021; Bonafé-Pontes, et al., 2021; Bowles, Larreguy, & Liu, 2020; Khurana, 2020; Munir, Erlinda, Afrinursalim, 2021). President Joe Biden even went as far as to assert that SM platforms are "killing people" with misinformation regarding COVID-19. The issue of the misinformation regarding COVID-19

must be addressed, and Rodriguez-Morales & Franco (2021) aptly purported that "Finally, globally, nations specifically need to prioritize the urgent implementation of strategies to tackle misinformation and vaccination reluctance" (p. 100073). However, SM has also been used to disseminate factual health related information. Based on the current study, persons who preferred the WhatsApp platform were more likely to be vaccinated than persons who preferred Instagram. Additionally, individuals classified as high to very high SM usage were more likely to be vaccinated against COVID-19, while persons with low to moderate usage were less likely to be vaccinated. So the question, 'Is social media responsible for lowering of vaccine hesitancy among Jamaicans' is a potent one, and would aid in explaining the vaccination intake or otherwise of Jamaicans.

The answer to the previously mentioned question can be found in the current study. The current research revealed that 15.6% of respondents with a low SM usage were fully vaccinated compared to 23.8% of those with a moderate SM usage, 32.2% of those with a high SM usage, and 62.6% of those with a very high SM usage. SM plays a significant role in the lowering of COVID-19 vaccine hesitancy among Jamaicans, as well as the traditional media (i.e., television, and the health organizations such as World Health Organization (WHO), Centers of Diseases Control and Prevention (CDC).

Among the current sampled respondents who use social media, 53.2% have had at least one dosage of the COVID-19 vaccine compared to a Caribbean study that found an acceptance rate of 74% among SM users (Indar, et al., nd). The current findings would indicate a clear case that Jamaicans appear to be changing their initial stance on the COVID-19 vaccine hesitancy because Babalola et al. (2020) found that 72% of Jamaicans in 2020 indicated that they will not be taking the COVID-19 vaccines.

According to the Statista Research Department, (2021) as of 2019 and 2020, on average, people spent approximately 145 minutes daily on SM among internet users. In another study done in the US, "29.7 percent of respondents used SM 1-2 additional hours per day. A further 20.5 percent used SM 30 minutes to 1 hour more than usual per day." (Statista Research Department, 2021). Table 4 shows the descriptive statistics for SM addiction scale of Jamaicans. On average, SM usage among Jamaicans is high. According to the current findings, it can be inferred that respondents with high to very high SM usage were more likely to be vaccinated. The Chi square test done in Table 5 also revealed that there was a high correlation between COVID-19 vaccination and the degree of SM usage. Since the emergence of the COVID-19 pandemic, individuals have been relying on SM more frequently as their preferred news sources for information for themselves and their loved ones (Abbas et al., 2021).

Although SM has been used to seek health information, studies done during the initial phase of the COVID-19 pandemic found that between 0.2% and 28.8% of SM postings regarding COVID-19 could be classified as misinformation (Gabarron et al., 2021). In fact, "The rapper [Nicki Minaj] tweeted disinformation about side effects of the coronavirus vaccine-suggesting that when a friend of her cousin had the jab, his testicles swelled up and he became impotent" BBC News (2021).According to the Centers for Disease Control and Prevention (2021), the dissemination of misinformation on SM can affect COVID-19 vaccine confidence, and misinformation and

disinformation can affect vaccine confidence and vaccination rate, particularly the 'who' is carrying the information as in the case previously mentioned, medical practitioners, artistes (Moreno-Castro, et al., 2021). In July of 2021, President of the United States Joe Biden stated that social media platforms were "killing people" by allowing the spread of misinformation about the COVID-19 vaccine (CNBC Television, 2021).

In the current study, 91% of the respondents revealed that they had seen false information posted on SM regarding the COVID-19 vaccine. With 54.2% of the respondents having selected SM as one of their primary sources of information regarding the COVID-19 vaccine. Individuals should seek additional information from reliable sources outside of SM, such as the World Health Organization, Centers for Disease Control and Prevention, or the Ministry of Health.

Based on the findings, the most preferred SM platforms were WhatsApp with 30.9% and Instagram with 24.6%. Facebook, Twitter, and Instagram have the capability for content moderation allowing for the removal of offensive and inaccurate content. While, WhatsApp utilizes end-to-end encryption, ensuring that only the person who sends the message and the receiver can read it (Reis et al., 2020). This makes it difficult for WhatsApp to effectively fact-check information shared on their App. Although WhatsApp has the least control over false information when compared to other SM platforms, findings from the current study revealed that 32.5% of the individuals who chose WhatsApp as their preferred SM platform were fully vaccinated and 18.3% had already taken the 1st dose of the vaccine. As it relates to Instagram, 63.4% had not taken the vaccine. According to a study done by the Center for Countering Digital Hate (2021), Instagram recommended 104 postings which contained misinformation, where more than half contained misinformation about COVID-19, and a fifth contained misinformation about COVID-19 vaccines. These posts gained over 233,000 likes on the platform. It is possible that Instagram users have been exposed to these posts containing misinformation and this, it can be inferred, may very well have dissuaded many users from taking the vaccine. Of the respondents who selected Facebook as their preferred SM, 32.1% were fully vaccinated, 27.7% had taken the 1st dose and 40.1% had not taken the vaccine. When compared to a study done by Lezer, et al., (2021) persons who were most reliant on Facebook for information had substantially lower vaccination rates than those who relied on other sources. The Chi-square test done in Table 6 shows that there was a high correlation between an individual's preferred SM platform and whether or not they were vaccinated.

Limitations

One of the major limitation identified by researchers during the study, was the unavailability and unwillingness of study participants to complete the questionnaire in a timely manner. Researchers, therefore, had to be more creative in their efforts, and solicited assistance from colleagues who then forwarded the questionnaire to their SM contacts. Secondly, older participants were not as eager to complete the questionnaire, and would sometimes request the assistance of their children, grand-children, and in some cases, their close friends, in order to complete it. A third limitation was that, while participants were asked to select their preferred SM platforms, because some had multiple SM accounts, it was not always possible to determine the direct impact of SM on their decision to get vaccinated.

Conclusion

The present study analyzed the impact of SM on the COVID-19 vaccination acceptance or hesitancy among the Jamaican populace. SM provides reliable up-to-date scientific information regarding COVID-19 vaccination protocols, and must be utilized accordingly by governmental agencies to help people make decisions regarding vaccination acceptance. According to the findings, respondents who spent less time on SM were more likely to be unvaccinated, while respondents who spent more time on SM were more likely to be vaccinated.

The preferred SM platform that appeared to have the most significant impact on vaccination acceptance, according to the findings was WhatsApp, and conversely, the SM platform that appeared to have the least significant impact on vaccination acceptance was Instagram. In short, there was a high degree of awareness indicated, with some caution, since the possibility also exist for the spreading of misleading and erroneous information using identical SM platforms.

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Appendix 1: Questionnaire

Is the Degree of Usage of Social Media Influencing COVID-19 Vaccination?

We are a group of 4th year nursing students from the Northern Caribbean University. We are researching the above-stated question for our Nursing Research class. This questionnaire is only to be completed by Jamaicans above the age of 18 years old. Please read each question carefully before selecting your answer. By clicking the submit button at the end of this questionnaire, you are consenting to be a part of this research. Thank you for your time.

1) What is your gender?
a. Male
b. Female

2) How old are you?
a. 18 - 27 years
b. 28 - 37 years
c. 38 - 47 years
d. 48 - 57 years
e. 58 - 67 years
f. 68 years and older

3) Please select your area of residence
a. Kingston
b. St. Andrew
c. St. Thomas
d. Portland
e. St. Mary
f. St. Ann
g. Trelawny
h. St. James
i. Hanover
j. Westmoreland
k. St. Elizabeth
l. Manchester
m. Clarendon
n. St. Catherine

4) What is your level of education?
a. Primary
b. Secondary (High School)
c. Tertiary (University)

5) Do you use social media?
a. Yes
b. No

6) Which is your preferred social media platform?
a. Instagram
b. TikTok
c. Facebook
d. Twitter
e. Snapchat
f. Whatsapp
g. Youtube
h. Not applicable

7) How much time do you spend on social media daily?
a. 30 minutes
b. 1-3 hours
c. 4-6 hours
d. 8+ hours
e. Not applicable

8) Have you ever seen false information posted on social media regarding the COVID-19 vaccine?
a. Yes
b. No

9) Are you aware that some social media platforms have fact-checking tools?
a. Yes
b. No

10) Have you taken the COVID-19 vaccine? *
a. Yes, I am fully vaccinated
b. Yes, 1st dose only
c. No

11) Did social media influence your decision to take (or not to take) the COVID19 Vaccine?
a. Yes
b. No

12) What is your primary source of information regarding the COVID-19 vaccine? select all that apply
a. Social media platforms
b. Health Organizations (CDC, WHO MOH)
c. Television
d. Newspaper

Social Media Addiction Scale

The following questions are taken from the Social Media Addiction Scale created by Aylin Tutgun Ünal and Levent Deniz. Please Select the response that best suits your belief.

1) I pretty much think about what's going on on social media recently.
a. Always
b. Often
c. Sometimes
d. Rarely
e. Never

2) If there's anything I have to do first I check social media.
a. Always
b. Often
c. Sometimes
d. Rarely
e. Never

3) When I don't check social media for a while, the thought of checking it occupies my mind.
a. Always
b. Often
c. Sometimes
d. Rarely
e. Never

4) I think that my life would be boring, bland, and tasteless without social media.
a. Always
b. Often
c. Sometimes
d. Rarely
e. Never

5) When I'm not connected to the internet, I intensely think of checking social media.
a. Always
b. Often
c. Sometimes
d. Rarely
e. Never

6) I wonder what's happening on social media.
a. Always
b. Often
c. Sometimes
d. Rarely
e. Never

7) There are times that I spent more time on social media than I think.
a. Always
b. Often
c. Sometimes
d. Rarely
e. Never

8) Each time I decide to cut my connection with social media, I tell myself “a few more minutes”.
a. Always
b. Often
c. Sometimes
d. Rarely
e. Never

9) I can’t give up using social media for a long while.
a. Always
b. Often
c. Sometimes
d. Rarely
e. Never

10) There are times that I use social media more than I plan.
a. Always
b. Often
c. Sometimes
d. Rarely
e. Never

11) I can’t understand how time passes while using social media.
a. Always
b. Often
c. Sometimes
d. Rarely
e. Never

12) I allocate long periods to actions (games, chat, viewing the photographs, etc) relevant to social media.
a. Always
b. Often
c. Sometimes
d. Rarely
e. Never

Appendix 2: Exploratory factor analysis of Social Media Addiction Scale

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
I pretty much think about what's going on at social media recently	3.13	.981	1080
If there is anything I have to do, first I check social media	3.33	1.078	1080
When I don't check social media for a while the thought of checking it occupies my mind	3.20	1.082	1080
I think that my life would be boring, blank, and tasteless without social media	3.46	1.204	1080
When I am not connected to the internet, I intensely think of checking social media	3.22	1.114	1080
I wonder of what is happening on social media	3.11	1.027	1080
There are times that I spent more time on social media than I think	2.95	1.044	1080
Each time I decide to cut my connection with social media, I tell myself a few more minutes	3.05	1.126	1080
I cannot give up using social media for a long while	3.23	1.124	1080
There are times that I use social media more than I plan	2.89	1.037	1080
I cannot understand how time passes while using social media	2.90	1.090	1080
I allocate long periods to actions relevant to social media.	3.10	1.101	1080

Correlation Matrix

		I pretty much think about what's going on at social media recently	If there is anything I have to do, first I check social media	When I don't check social media for a while the thought of checking it occupies my mind	I think that my life would be boring, blank, and tasteless without social media	When I am not connected to the internet, I intensely think of checking social media	I wonder of what is happening on social media	There are times that I spent more time on social media than I think	Each time I decide to cut my connection with social media, I tell myself a few more minutes	I cannot give up using social media for a long while	There are times that I use social media more than I plan	I cannot understand how time passes while using social media	I allocate long periods to actions relevant to social media.
Correlation	I pretty much think about what's going on at social media recently	1.000	.679	.617	.584	.635	.639	.526	.514	.491	.565	.530	.566
	If there is anything I have to do, first I check social media	.679	1.000	.673	.662	.634	.626	.560	.541	.537	.545	.516	.528
	When I don't check social media for a while the thought of checking it occupies my mind	.617	.673	1.000	.640	.686	.670	.583	.563	.547	.556	.559	.591
	I think that my life would be boring, blank, and tasteless without social media	.584	.662	.640	1.000	.668	.590	.556	.536	.536	.468	.481	.480
	When I am not connected to the internet, I intensely think of checking social media	.635	.634	.686	.668	1.000	.750	.600	.568	.581	.593	.577	.595
	I wonder of what is happening on social media	.639	.626	.670	.590	.750	1.000	.658	.591	.570	.588	.587	.593
	There are times that I spent more time on social media than I think	.526	.560	.583	.556	.600	.658	1.000	.696	.593	.647	.638	.548
	Each time I decide to cut my connection with social media, I tell myself a few more minutes	.514	.541	.563	.536	.568	.591	.696	1.000	.662	.648	.648	.487
	I cannot give up using social media for a long while	.491	.537	.547	.536	.581	.570	.593	.662	1.000	.617	.576	.477
	There are times that I use social media more than I plan	.565	.545	.556	.468	.593	.588	.647	.648	.617	1.000	.727	.584
	I cannot understand how time passes while using social media	.530	.516	.559	.481	.577	.587	.638	.648	.576	.727	1.000	.589
	I allocate long periods to actions relevant to social media.	.566	.528	.591	.480	.595	.593	.548	.487	.477	.584	.589	1.000

Communalities

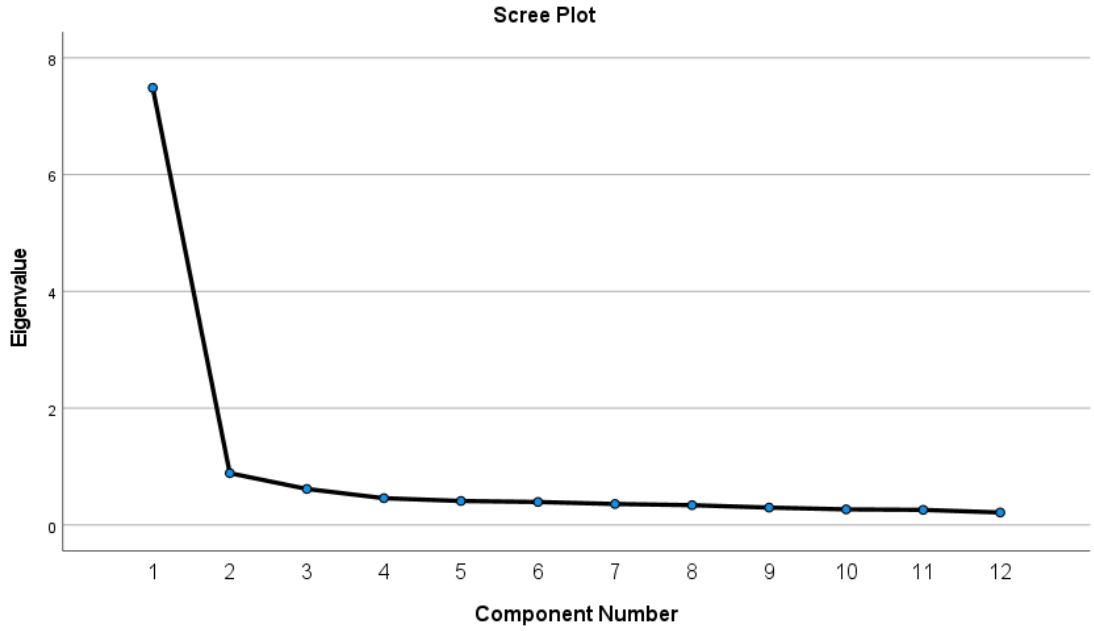
	Initial	Extraction
I pretty much think about what's going on at social media recently	1.000	.601
If there is anything I have to do, first I check social media	1.000	.627
When I don't check social media for a while the thought of checking it occupies my mind	1.000	.660
I think that my life would be boring, blank, and tasteless without social media	1.000	.577
When I am not connected to the internet, I intensely think of checking social media	1.000	.697
I wonder of what is happening on social media	1.000	.693
There are times that I spent more time on social media than I think	1.000	.646
Each time I decide to cut my connection with social media, I tell myself a few more minutes	1.000	.619
I cannot give up using social media for a long while	1.000	.573
There are times that I use social media more than I plan	1.000	.633
I cannot understand how time passes while using social media	1.000	.614
I allocate long periods to actions relevant to social media.	1.000	.548

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.487	62.389	62.389	7.487	62.389	62.389
2	.888	7.401	69.790			
3	.618	5.148	74.939			
4	.460	3.829	78.768			
5	.412	3.431	82.200			
6	.395	3.289	85.489			
7	.361	3.005	88.493			
8	.340	2.833	91.326			
9	.299	2.490	93.815			
10	.268	2.233	96.049			
11	.259	2.162	98.210			
12	.215	1.790	100.000			

Extraction Method: Principal Component Analysis.



Component Matrix[a]

	Component 1
I pretty much think about what's going on at social media recently	.775
If there is anything I have to do, first I check social media	.792
When I don't check social media for a while the thought of checking it occupies my mind	.813
I think that my life would be boring, blank, and tasteless without social media	.759
When I am not connected to the internet, I intensely think of checking social media	.835
I wonder of what is happening on social media	.833
There are times that I spent more time on social media than I think	.804
Each time I decide to cut my connection with social media, I tell myself a few more minutes	.786
I cannot give up using social media for a long while	.757
There are times that I use social media more than I plan	.795
I cannot understand how time passes while using social media	.783
I allocate long periods to actions relevant to social media.	.740

Extraction Method: Principal Component Analysis.

a. 1 components extracted.