

Use of social media for COVID-19-related information and associated factors among health professionals in Northwest Ethiopia: A cross-sectional study

Digital Health
Volume 8: 1-12
© The Author(s) 2022
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/20552076221113394
journals.sagepub.com/home/dhj

\$SAGE

Masresha Derese Tegegne¹, Berhanu Fikadie Endehabtu¹, Jorn Klein², Monika Knudsen Gullslett² and Tesfahun Melese Yilma¹

Abstract

Background: Social media has become an alternative platform for communication during medical crises like the COVID-19 pandemic. This study aimed to assess social media usage for COVID-19-related information among health professionals.

Method: A quantitative cross-sectional study design was conducted among 370 health professionals. The data were analyzed using SPSS version 25 software. Data were collected using a semi-structured, self-administered, and pre-tested questionnaire. Descriptive and binary logistic regression analysis techniques were used to describe respondents' social media usage for COVID-19 information and identify its associated factors.

Results: About 54% (95% CI: 48–58%) of the participants had good social media usage for COVID-19-related information. Age \leq 30 (AOR = 2.02, 95% CI: 1.14–3.58), Wi-Fi/broadband Internet access (AOR = 2.45, 95% CI: 1.38–4.33), taking computer training (AOR = 2.58, 95% CI: 1.37–4.85), basic computer skill (AOR = 3.28, 95% CI: 1.71–6.29), and usefulness of social media (AOR = 3.56, 95% CI: 1.57–8.04) were found to be the significant factors associated with usage of social media for COVID-19-related information.

Conclusion: The present study confirms that more than half of health professionals had good social media usage for COVID-19-related information. This shows that social media platforms can be used as a source of COVID-19-related information for health professionals if basic computer training is offered, internet connection is available in the workplace, and the usefulness of social media is emphasized.

Keywords

Social media usage, health professionals, health information, COVID-19, Ethiopia

Submission date: 31 December 2021; Acceptance date: 23 June 2022

Introduction

The novel coronavirus disease (COVID-19) emerged in China and has become a pandemic. Reports on 3 June 2022 revealed that COVID-19 cases reached 534,248,027 and 6,317,747 deaths worldwide. The incidence of COVID-19 is also increasing alarmingly in Africa. By the beginning of June 2022, 11,896,446 confirmed cases and 254,148 deaths were reported from Africa. The

¹Department of Health Informatics, Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia ²Faculty of Health and Social Sciences, University of South-Eastern Norway, Drammen, Norway

Corresponding author:

Masresha Derese Tegegne, Department of Health Informatics, Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, Gondar, Ethiopia.

Email: masresha1derese@gmail.com

situation has no exception in Ethiopia.⁶ Reports revealed that the number of confirmed cases is exponentially increasing.^{7,8}

The present COVID-19 pandemic is endangering global health due to the exponential growth in cases and deaths. The COVID-19 outbreak makes healthcare delivery challenging for health workers and medical students. ^{9,10} This is because health workers were among the frontline respondents, and more work is expected to prevent the COVID-19 pandemics. During the pandemic, healthcare practitioners were exposed to various psychological effects due to the complex healthcare delivery process. ⁹

Evidence showed that e-health services simplified healthcare delivery for health professionals and were used to support person-centered health care during COVID-19. 11,12 Furthermore, evidence has shown that electronic health information sources, such as social media platforms, can assist in crisis communication in the event of natural disasters and pandemics. 12,13 Social media platforms are computer-based technologies that facilitate the sharing of ideas, thoughts, and information through virtual networks and communities. 14,15 Social media platforms can prevent pandemics from further spreading in community and health care settings through promotion and education.

However, the usage of social media and the internet in Ethiopia is at its early stage and ranked below the African average (39.3%) internet penetration rate. 16 According to the reports of world bank data 2017, there are only 6% of Facebook users and a very low (20%) internet penetration rate in Ethiopia. 17,18 Furthermore, studies failed to include health care professionals' habit of disseminating information to create awareness to the public, 19 which is the most successful way to prevent the current COVID-19 pandemic. Besides this, evidence showed that most health professionals use traditional sources of health information for COVID-19 in developing countries, which is difficult for health professionals to deliver COVID-19 information to the community. 16,20 Hence supporting social media usage is a good way for the health professional to give awareness or updates regarding the COVID-19 situation to the community. Health care professionals can interact with social media pages to keep up to date with the latest medical information about the COVID-19 pandemic and avoid false data that may cost lives among people in the community.

There are many studies conducted on social media usage for COVID-related information worldwide. ^{20–24} Furthermore, findings revealed that issues such as a lack of access to electronic health information sources, low perception of social media networks' usefulness, and a lack of internet/Wi-Fi and electronic device access all contribute to low acceptance and utilization of social media networking sites. ^{25–30} However, there is limited evidence on the utilization of social media for the COVID-19 pandemic and its associated factor in Ethiopia. Hence, social media usage

for COVID-19 could be different from other research findings in other countries because of Ethiopia's limited social media usage and very low internet penetration rate. ¹⁴ Therefore, this study aimed to assess social media usage for COVID-19-related information and its associated factor among health professionals working in public health centers in the Northwestern part of Ethiopia.

Method

Study design and setting

An institutional-based cross-sectional study was conducted among health professionals working in Bahir Dar Town Health centers from 25 January to 20 February 2021. Bahir Dar is the capital of the Amhara Region in Ethiopia and is situated in the northwestern part of Ethiopia, which is 490 km far from the capital, Addis Ababa. 31 Because Bahir Dar is the capital city of the Amhara region, there are many visitors from various areas, and according to Amhara public health institution reports, there is a high number of COVID-19 incidence compared to other metropolitan cities in the Amhara region.³² In the city, there are a total of 370 health professionals and 10 health centers namely Abay health center, Bahir Dar health center, Minilik Health Center, Han Health Center, Meshenty Health Center, Shimbit Health Center, Shumabo Health Center, Tis Abay Health Center, Zegie Health Center, and Zenzelma Health Center which serves around 750,991 population.

Sample size and sampling method

There are 10 health centers in Bahir Dar town, which employ around 370 health workers. All active health professionals working in clinical and non-clinical settings were invited to participate in this study (n = 370). However, during the data collecting period, health workers who were chronically ill and on yearly leave were omitted from the study.

Study variables

The primary outcome variable of this study was the use of social media for COVID-19-related information. The questionnaires used in this study were developed based on a review of related literature. ^{21,28,29,33} The following variables were included in the survey: (a) socio-demographic variables, (b) technology-related factors, (c) individual variables, and (d) utilization of social media for COVID-19-related information. To measure the level of health professionals' social media usage for COVID-19-related information in the past months, we used nine general social media usage for COVID-19-related information-seeking questions adapted from the Media and Technology Usage and Attitudes Scale. ³³ Usage of social media for COVID-19-related

Table 1. Socio-demographic characteristics of health professionals.

Socio-demographic characteristics	Category	Frequency	Percentage
Gender	Male	196	55.1
	Female	160	44.9
Age	≤ 30	192	53.9
	> 30	164	46.1
Profession	Nurse	131	36.8
	Midwives	68	19.1
	Health officer	57	16
	Laboratory	47	13.2
	Pharmacy	38	10.7
	Other ^a	15	4.2
Educational level	Diploma	112	31.5
	BSc. Degree	220	61.8
	Masters	24	6.7
Marital status	Single	151	42.4
	Married	198	55.6
	Divorced	5	1.4
	Windowed	1	0.3
	Separated	1	0.3
Religion	Orthodox	311	87.4
	Muslim	26	7.3
	Protestant	18	5.1
	Other	1	0.3
Previous residence	Urban	217	61.0
	Rural	139	39.0
Income	2000-3500	9	2.5
	3500-5500	133	37.4
	Above 5500	214	60.1

^aEnvironmental health and nutrition.

information was assessed by using a 5-point Likert scale from "Daily" (score 5) to "Never" (score 1) (daily, weekly, several times a month, once a month, never). The final score in the utilization section ranges from 9 to 45. The median of the nine questions about usage of social media for COVID-19-related information was determined because the cumulative data is not normally distributed. ³⁴ Finally, those who scored higher than the median value were labeled as good users, while those who scored lower were labeled as poor users.

Data collection tools and procedures

A self-administered, structured, and pre-tested questionnaire was prepared in English. Two supervisors and ten data collectors participated in the data collection process. Masters' health informatics students who have good communication skills were recruited for collecting data and health informatics who were experienced in research work supervised the data collection process.

Data quality control

A two-day training was given for data collectors and supervisors on the objectives of the study, data collection procedures, data collecting tools, respondents' approach, data confidentiality, and respondents right before the data collection date. A pre-test was conducted outside of the study area, in Gondar town, at the Gondar (Poli) health center, with a 10% total sample. The pre-test results were used to assess the validity and reliability of the data collection instrument. Cronbach's alpha was used to test the internal consistency of each dimension of the data collecting instrument, and scores on general social media usage for COVID-19 (Cronbach alpha=0.91) were within the acceptable range.

Data processing and analysis

Data were checked for completeness and all responses to the survey questionnaires were coded. Epi-data version 4.6 was used for the data entry.³⁵ The data was then exported to SPSS version 25 software for analysis.³⁶ Data entry was conducted with an experienced data clerk. Descriptive analyses were computed to describe the sociodemographic variables and social media usage for COVID-19 information. Binary logistic regression was used to measure the association of dependent and independent variables. Odds ratios with 95% confidence intervals were calculated to determine the strength of association between the dependent and independent variables. To test statistical significance, the p-value was calculated, and the cut-off value was set at p < 0.05. We performed assumption testing prior to running the logistic regression model. One of the logistic regression model's assumptions is multicollinearity, and the findings showed that all of the variance

inflation factor values were less than three, indicating that there was no multicollinearity between the independent variables. Secondly, model testing revealed that the outcome variables were not normally distributed, therefore we performed the Hosmer and Lemeshow test, which revealed that the binary logistic regression was fitted with p = 0.258.

Results

Socio-demographic characteristics

The questionnaire was correctly filled out and answered by 356 (96.2%) of the total health professionals in Bahir Dar town public health centers. The mean age of the respondents was 31.5 years with a standard deviation of \pm 6.2 years. As shown in (Table 1), 192 (53.9%) of health professionals were below the age of 30 years. Of the total respondents, 196 (55.1%) were male, and about 198(55.6%) of health professionals were currently married. The majority of 311(87.4%) of the study participants were orthodox by religion. More than half 220(61.8%) of health professionals have a BSc degree and 24(6.7%) master's degree educational level. More than half of the health professionals 199(55.9%) were nurses and midwives. The study also indicated that the majority 217(61%) of the health professionals have previously come from urban areas.

Technological-related characteristics

Most of the respondents 327(91.9%) have access to one of the electronic devices; a smartphone, a laptop computer, or a desktop computer. Most of the participants used smartphones 303(85.1%), followed by laptops 78(21.9%) and 51(14.3%) have access to a desktop computer in the workplace. The finding indicated that 209(58.7%) have access to either Wi-Fi/broadband internet of which only 31(8.7%) have access to the internet in the workplace. Out of the 303 smartphone users, 288(95%) used mobile internet. Of the total respondent working at Bahir Dar city health centers, 213(59.8%) of them argue that there is a stable power supply to use the internet as shown in Table 2. Among all participants, 166(46.6%) respondents took basic computer training. About one-third of the respondents, 125(35.1%) had good self-rated basic computer skills.

Health professional's social media usage

Out of 356 respondents, 341(95.8%) of them had at least one social media account and around 304(85.4%) of the respondents were using social media networking sites in the past month at least once for any reason. Above half of the respondents, 245(68.8%) had below 5 years of experience in using social media networks.

Out of 304 respondents, 220(72.4%) health care providers were daily users of social media, and time spent on

Table 2. Technology-related characteristics.

Technological			
variables	Category	Frequency	Percentage
Type of electronic devices used ^a	Smartphone	303	85.1
	Laptop	78	21.9
	Desktop	51	14.3
	Don't have access	29	8.1
Wi-Fi/broadband internet access	Yes	209	58.7
	No	147	41.3
Access to mobile internet	Yes	288	80.9
	No	68	19.1
A stable power supply to use the Internet	Yes	205	57.6
	No	151	42.4
Did you take any kind of computer training?	Yes	166	46.6
	No	190	53.4
Self-rated basic	Good	125	35.1
computer skill	Poor	231	64.9

^aMultiple responses possible.

the social media network per day ranges from ≤ 1 h 99(45%), 1–2 h 57(25.9%), and ≥ 3 h 64(29.1%). Health professionals' main reasons for using social media were for academic purposes 210(59%), for socialization 142(39.9%), to entertain 90(25.3%), to seek health information 225(63.2%), and don't mention reasons 15(4.2%) as shown in Table 3.

There were 15(4.2%) respondents who did not have any social media accounts and those respondents argue that the most underlying reason was not having any electronic devices, unable to access the internet, difficulty in operating SMN, hate of political posts, and religious matter.

Health professional's usage of social media for COVID-19-related information

Of a total of 356 respondents currently working in Bahir Dar city administration health centers, 191(53.7%) (95% CI: 48–58%) of them had good usage of social media for COVID-19-related information.

Among the nine social media usages for COVID-19 activities, the data showed that participants engaged more in

Table 3. Frequency of social media usage of health professionals.

Frequency of social media use	Category	Frequency	Percentage
Currently having social media accounts. N (356)	Yes	341	95.8
	No	15	4.2
Reason for not having social media account. ^a N (15)	Not having any electronic devices	7	46.6
	Unable to access the internet	10	66.6
	Difficulty to operate SMN	6	40.0
	Other ^b	5	33.3
Years of experience on social media networks. N (356)	No Not having any electronic device Unable to access the internet Difficulty to operate SMN Other ^b < 5 years 6-10 years >10 years	245	68.8
	6-10 years	70	19.7
	>10 years	41	11.5
Using social media networks in the past 1 month at least once. N (356)	Yes	304	85.4
	No	52	14.6
Frequency of using social media networks. N (304)	Daily	220	72.4
	Not daily	84	27.6
The time you spent on social media networks per day. N (220)	Below 1 h	99	45
	1-2 h	57	25.9
	Above 2 h	64	29.1
Reasons for using social media. ^a N (356)	Daily Not daily day. N (220) Below 1 h 1-2 h Above 2 h For academic purpose	210	59
	For socialization	142	39.9
	To entertain	90	25.3
	To seek health information	225	63.2
	Don't mention reasons	15	4.2

^aMultiple responses possible.

passive activities such as reading (60.1%), browsing (51.4%), and liking (50.6%) COVID-19-related social media posting weekly. Only about a third of the participants indicated that they had posted COVID-19-related status updates (27.3%) or posted COVID-19-related photos on social media (22.1%) and (27.3%) commented on COVID-19-related social media postings, status updates, photos weekly. While using social media for COVID-19-related information, about 253(71.1%) and 280(78.7%) of health professionals concluded that COVID-19-related information released on social media networks was trustworthy and useful, respectively. Moreover,

209(58.7%) had privacy concerns while using social media networks for COVID-19-related information as shown in Table 4.

Preferred social media platforms and pages for accessing COVID-19-related information

The two most used platforms for accessing COVID-19-related information among health professionals were found to be Facebook and Telegram with the percentage of 297(83.4%) and 202(56.7%), respectively, as shown in

^bHate of political posts, religious matter.

Table 4. Individual	factors for health	professional's usage of	social media for	COVID-19-related information.

Variables	Category	Frequency	Percentage
Privacy concern of SMN	Concerned	209	58.7
	Not concerned	147	41.3
Trustworthiness of SMN	Trustworthy	253	71.1
	Not trustworthy	103	28.9
Usefulness of SMN	Useful	280	78.7
	Not useful	76	21.3

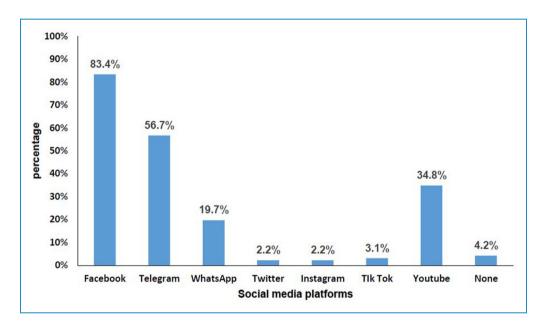


Figure 1. Frequently used social media platforms for COVID-19-related information.

Figure 1. The type of pages used as a source of information for COVID-19 were mainly EPHI pages (52.2%), EFMOH pages (50.3%), WHO pages (54.5%), and CDC pages (38.2%), and non-professional pages (12.9%). Around (4.5%) of respondents don't follow any social media pages for COVID-19 information as indicated in Figure 2.

And also, health professionals were asked for their reason to seek COVID-19-related information by using social media networks. The main reason to seek COVID-19-related information through social media sites were participants' interest to know COVID-19 diagnosis 166 (46.6%), treatment 174(48.9%), to find updates on the mode of transmission 127 (35.7%), finding updates on prevention methods 139 (39%), global and local case reports 169 (47.5%), for global and local death reports

177 (49.7%), and don't have any reason 15(4.2%) (Figure 3).

Factors associated with health professional's usage of social media for COVID-19-related information

Bivariable and multivariable binary logistic regression analyses were done to measure the association between the usage of social media for COVID-19-related information and independent variables. Therefore, those variables with a *p*-value of less than 0.2 in the bivariable regression analysis (Age, Experience on SMN, Educational level, Device access, Internet access, Mobile internet, Electricity availability, Training, Skill, Privacy, Trustworthiness, and Usefulness) were included in the multivariable regression

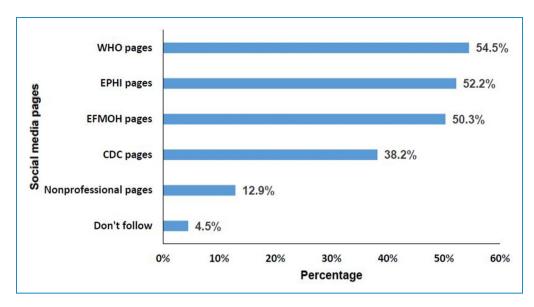


Figure 2. Preferred social media pages to seek COVID-19 information.

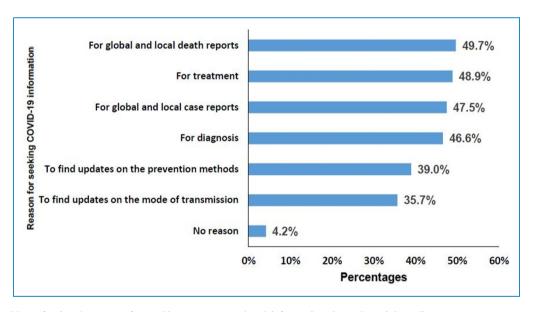


Figure 3. Health professionals' reason for seeking COVID-19-related information through social media.

analysis. With the multivariable logistic regression model, the variables age, Wi-Fi/broadband Internet access, computer training, basic computer skill, and usefulness were found to be significantly associated with the usage of social media for COVID-19-related information (Table 5).

Health professionals who were younger (Age \leq 30) were approximately 2.0 times more likely (AOR = 2.02, 95% CI: 1.14–3.58) to use social media for COVID-19-related information when compared to those who are greater than 30 years of age. Similarly, health professionals who had Wi-Fi/broadband internet access were 2.45 times more likely (AOR = 2.45, 95% CI: 1.38–4.33) to use social

media for COVID-19-related information than those who had no internet access. Similarly, health professionals who had gotten any type of basic computer training were 2.58 times more likely (AOR = 2.58, 95% CI: 1.37–4.85) to use social media for COVID-19-related information than those who had not gotten any type of computer training. Additionally, this study found that health professionals who had good basic computer skills were 3.28 times more likely (AOR = 3.28, 95% CI: 1.71–6.29) to use social media for COVID-19-related information than those who had poor basic computer skill after controlling for other variables.

 Table 5. Factors associated with usage of social media for COVID-19-related information.

	Utilizatio				
Characteristics	Category	Good (%)	Poor (%)	COR (95% CI)	AOR (95% CI)
Age	≤ 30 years	122(34.3)	70(19.7)	2.40(1.56-3.67)	2.02(1.14-3.58) *
	> 30 years	69(19.4)	95(26.7)	1	1
Educational level	Master's degree	18(5.1)	6(1.7)	3.85(1.42-10.44)	1.28(0.32-5.11)
	BSc degree	124(34.8)	96(27.0)	1.66(1.05-2.62)	1.20(0.65-2.20)
	Diploma	49(13.8)	63(17.7)	1	1
Experience on SMN	≥ 10 years	28(7.9)	13(3.7)	2.60(1.28-5.25)	1.97(0.77-5.01)
	6-10 years	52(14.6)	18(5.1)	3.48(1.92-6.30)	2.05(0.99-4.23)
	≤ 5 years	111(31.2)	134(37.6)	1	1
Device access	Yes	185(52.0)	142(39.9)	4.99(1.98-12.59)	1.91(0.488-7.50)
	No	6(1.7)	23(6.5)	1	1
WiFi/broadband internet access	Yes	142(39.9)	67(18.8)	4.23(2.70-6.64)	2.45(1.38-4.33) *
	No	49(13.8)	98(27.5)	1	1
Mobile internet	Yes	172(48.3)	116(32.6)	3.82(2.14-6.82)	1.62(0.688-3.85)
	No	19(5.3)	49(13.8)	1	1
Electricity availability	Yes	132(37.1)	73(20.5)	2.82(1.82-4.35)	1.10(0.60-2.03)
	No	59(16.6)	96(25.8)	1	1
Basic computer training	Yes	132(37.1)	34(9.6)	8.62(5.30-14.01)	2.58(1.37-4.85) *
	No	59(16.6)	131(36.8)	1	1
Computer skill	Good	103(28.9)	22(6.2)	7.60(4.47-12.94)	3.28(1.71-6.29) *
	Poor	88(24.7)	143(40.2)	1	1
Privacy	Concerned	103(28.9)	106(29.8)	0.65(0.42-0.99)	0.74(0.42-1.31)
	Not-concerned	88(24.7)	59(16.6)	1	1
Trustworthiness	Trustworthy	160(44.9)	93(26.1)	3.99(2.44-6.53)	1.94(0.98-3.84)
	Not-trustworthy	31(8.7)	72(20.2)	1	1
Usefulness	Useful	176(49.4)	104(29.2)	6.88(3.72-12.72)	3.56(1.57-8.04) *
	Not-useful	15(4.2)	61(17.1)	1	1

^{*}Significant at p-value<0.05.

Finally, health professionals who perceived the usage of social media for COVID-19 as useful were 3.56 times more likely (AOR = 3.56, 95% CI: 1.57–8.04) to use social media for COVID-19 than those who perceived it not useful.

The multivariable model result showed that educational level, experience with SMN, device access, mobile internet, electricity availability, trustworthiness, and privacy concern did not have a significant association with health professionals' usage of social media for COVID-19-related information.

Discussion

The study aimed to assess healthcare professionals' use of social media to access COVID-19-related information and associated factors in Bahir Dar city health centers in Ethiopia. This is the first study on health professionals to show how they use social media to access COVID-19-related information. According to the findings of this study, social media platforms can be used as a source of pandemic information in developing countries where electronic health information sources are limited. The survey findings will provide additional knowledge on social media platform usage statistics for pandemic information, as well as guidance for policymakers and ministries in implementing appropriate social media platforms for health professionals to disseminate information about current pandemics and future emergencies.

We found that about 54% of the participants had good usage of social media for COVID-19-related information. Respondents age, Internet access, basic computer training, computer skill, and usefulness were found to have a significant association with health professional usage of social media for COVID-19-related information. Most health professionals are interested more in passive activities such as reading social media postings related to COVID-19, liking COVID-19-related social media postings, browsing social media photos related to COVID-19, and checking COVID-19-related Facebook pages.

This study indicated that more than half of the health professionals have good usage of social media for COVID-19 information. This finding is lower than a study done in Uganda, the results of their study showed that 75.8% usage of social media for COVID-19-related information. On the other hand, this finding is slightly lower than a study finding from Egypt, with 65.8% physician utilization of social media for knowledge dissemination during the COVID-19 virus outbreak. 21

The difference might be due to the differences in study participants between the studies, previous studies were conducted in hospitals while this study is conducted in the health centers. This could be explained because in Ethiopian conditions health centers have less access to the internet and low information communication technology infrastructure. ²⁸ This implied that special attention regarding internet

availability and information communication technology should be given at the health center level in Ethiopia. This could be due to these tiers of health system structure were more close to the community and if we provide quality services we can improve the health care quality as well as the people's life in this pandemic or future emergencies. In addition, the lower level of social media utilization might be due to differences in measuring instruments or time restrictions.³³ This study has tried to eliminate recall bias by considering social media use at least once in the past month.³⁷

The respondents stated that they are using different types of social media platforms for COVID-19-related information. Among health professionals, Facebook and Telegram were the most frequently used social media platforms. This finding supports the findings of other studies. ^{20,21} Both studies found that Facebook and WhatsApp were commonly used social media platforms for accessing COVID-19-related information among health professionals, except that in our study telegram is high utilizer than WhatsApp this difference may be due to cross-country differences in the preference of social media platform.

This study also identifies WHO, EPHI, and EFMOH social media pages used as the main source of COVID-19-related data. This result is consistent with previous studies that WHO and ministry of health websites were highly followed pages on social media. ^{21,29} This is due to these websites being mostly trusted sources than other non-professional pages. ²⁹ Health professionals' reason for using social media for COVID-19-related information was mainly to inquire about information related to diagnosis, transmission ways, global and local case and death reports, and updates on prevention methods.

This study indicated that younger health professionals were more likely to use social media for COVID-19 information than older professionals. This may be justified by the fact that younger health professionals are likely to use social media daily and are likely to read and act on social media posts promptly.²² This finding is consistent with other studies.^{22,28} And this implies that older employees need more support to adapt to and use social media as electronic sources of health information.

More than half (58.7%) of the respondents had internet access. It is relatively low compared with studies conducted on health professionals' information, seeking on the Covid-19 Pandemic at the University of Gondar hospital.²⁹ This is because of health professionals working in UoG-hospital had high internet access than professionals working in health centers. However, the two studies found that health professionals who have access to the internet showed significantly better social media utilization for COVID-19 than those who have no internet access.

Additionally, this study found that taking computer training was also another factor that affects the health professional utilization of social media for COVID-19-related information. The result is harmonious with previous

studies.^{28,29} And this result suggests that providing basic computer training and training on accessing electronic health information sources like social media can make a notable difference in social media adaptation for accessing health information.

In this study, we found that basic computer skill is the main factor that was positively associated with health professional utilization of social media for COVID-19-related information. This result is in line with previous studies.³⁸ As indicated by previous studies good computer skill and skill in how to access electronic information sources is the main success factor for e-Health implementation. So, to implement electronic health information sources in times of pandemics, interventions are needed to increase health professional's basic computer skills and the ministry of health should provide effective training on how to utilize electronic health information sources such as social media so that they can access the best evidence about COVID-19 and other pandemics from different sources and decrease their anxiety about technology.

The study also found that perceived usefulness has a positive significant association with health professional utilization of social media for COVID-19-related information. Health professionals refused to use social media for COVID-19 information due to a lack of perceived usefulness even if social media is easy to practice. This finding is consistent with other studies, ^{26,39,40} and the result implied that health professionals need to perceive social media sites as being useful for accessing pandemic information. Therefore, in the delivery of health information through social media and other electronic information sources, there is a need to ensure that social media is improving the intended health outcomes by delivering current information. This is due to social media becoming one of the main sources of broadcasting information because of its wide propagation and its use by all levels of the community. ²¹

Therefore, based on the results of our study, emphasis on technology-based and behavioral variables could positively affect the health professional usage of social media in fighting the COVID-19 pandemic.

Limitation

There are some limitations to this study. Since the questionnaire is self-administered, the information collected was selfperceived, which might have reported bias. Additionally, this study is a cross-sectional survey; the underlying identified associations may contrast across divisions and countries or may even lose their meaning over time.

Conclusion

In conclusion, more than half of the health professionals had good usage of social media for COVID-19-related information. Being young, having computer training and skill, and perceived usefulness contribute to social media usage for COVID-19 information. Providing basic computer training, having internet access in the workplace, and emphasizing the usefulness of social media were recommended to increase usage of social media for COVID-19-related information.

List of abbreviation

COVID-19 coronavirus diseases 2019

e-Health electronic health
AOR adjusted odds ratio
CI Confidence interval
FMOH Federal ministry of health
EPHI Ethiopian public health institute

ICT information communication technology

SMN social media networks

SPSS Statistical Package for Social Science

WHO World Health Organization

Acknowledgements: We would also like to thank the University of Gondar, Institute of Public Health for providing this opportunity to conduct the research. Our acknowledgment also extends to Bahir Dar town administration and health centers in the administration for giving all the necessary information and support.

Availability of data and materials: All the data generated or analyzed during this study are included in this published article.

Contributorship: MDT made significant contributions to the conception, design, data collection supervision, data analysis, interpretation, and write-up of the manuscript. TMY & BFE have contributed extensively revising the manuscript, analysis, and interpretation. JK & MKG were involved in reviewing the manuscript, analysis, and interpretation and all authors have approved the final version of this manuscript.

Conflict of interest: The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical approval: Ethical clearance and approval letters were obtained from the Institutional Review Board (IRB) of the University of Gondar with reference number /IPH/1318/2021. Communication with the city health administration officers, and health center admins was made through a formal letter obtained from the University of Gondar. A supporting letter was also obtained from the Amhara Regional Health bureau. Written consent was obtained from each study participant. Participation was voluntary and participants can withdraw from the study at any time if they were not comfortable with the questionnaire. To keep the confidentiality of any information provided by study subjects, the data collection procedure was anonymous.

Funding: The author(s) received no financial support for the research, authorship, and/or publication of this article.

Guarantor: MDT.

ORCID iD: Masresha Derese Tegegne https://orcid.org/0000-0002-3156-3936

References

- Taylor DB. How the coronavirus pandemic unfolded: a timeline. The New York Times 2020; 15.
- Khedkar PH, Patzak A. SARS-CoV-2: what do we know so far? Acta Physiol 2020; 229: e13470. https://doi.org/10. 1111/apha.13470.
- worldometer. COVID-19 Coronavirus Pandemic. https:// www.worldometers.info/coronavirus/. Published 2022. Accessed June 3, 2022.
- Osseni IA. COVID-19 pandemic in sub-Saharan Africa: preparedness, response, and hidden potentials. *Trop Med Health* 2020: 48: 48.
- BBC. Coronavirus in Africa tracker. https://www.bbc.co.uk/ news/resources/idt-4a11d568-2716-41cf-a15e-7d15079548bc. Published 2022. Accessed June 3, 2022.
- Fox S. The social life of health information. Pew internet & American life project 2009. http://wwwpewinternetorg/Reports/ 2009/8-The-Social-Life-of-Health-Informationaspx. 2009.
- Asemahagn MA. Factors determining the knowledge and prevention practice of healthcare workers towards COVID-19 in Amhara region, Ethiopia: a cross-sectional survey. *Trop Med Health* 2020; 48: 1–11.
- Ullah M. The pandemic of novel coronavirus disease 2019 (COVID-19): need for an immediate action. 2020.
- Batra K, Singh TP, Sharma M, et al. Investigating the psychological impact of COVID-19 among healthcare workers: a meta-analysis. *Int J Environ Res Public Health* 2020; 17: 9096.
- Batra K, Sharma M, Batra R, et al. Assessing the psychological impact of COVID-19 among college students: An evidence of 15 countries. Paper presented at: Healthcare 2021.
- Niles MT, Emery BF, Reagan AJ, et al. Social media usage patterns during natural hazards. *PLoS One* 2019; 14: e0210484.
- Tebeje TH, Klein J. Applications of e-health to support person-centered health care at the time of COVID-19 pandemic. *Telemed e-Health* 2021; 27: 150–158.
- Sharma M, Batra K, Flatt J. Testing the multi-theory model (MTM) to predict the use of new technology for social connectedness in the COVID-19 pandemic. Paper presented at: Healthcare 2021.
- 14. Kietzmann JH, Hermkens K, McCarthy IP, et al. Social media? Get serious! Understanding the functional building blocks of social media. *Bus Horiz* 2011; 54: 241–251.
- Balaji T, Annavarapu CSR, Bablani A. Machine learning algorithms for social media analysis: a survey. *Comput Sci Rev* 2021; 40: 100395.
- DATAREPORTAL. DIGITAL 2020: ETHIOPIA. https://datareportal.com/reports/digital-2020-ethiopia. Published 2020. Accessed June 4, 2022.
- 17. informa. Connecting Africa. https://www.connectingafrica.com/author.asp?section_id=761&doc_id=768066#. Published 2020. Accessed June 3, 2022.
- NapoleonCat. Facebook users in Ethiopia. https://napoleoncat. com/stats/facebook-users-inethiopia/2021/04/#:~:text=There

- %20were%207%20200%20000,group%20(4%20000%20000). Published 2021. Accessed June 3, 2022.
- Alsobayel H. Use of social media for professional development by health care professionals: a cross-sectional webbased survey. *JMIR Med Educ* 2016; 2: e15.
- Olum R, Bongomin F. Social Media platforms for health communication and research in the face of COVID-19 pandemic: a cross sectional survey in Uganda. medRxiv 2020.
- Mohamed-Hussein A, Yassa H, Makhlouf H. Impact of social media on knowledge dissemination between physicians during COVID-19 virus outbreak: a cross sectional survey. medRxiv 2020.
- Murri R, Segala FV, Del Vecchio P, et al. Social media as a tool for scientific updating at the time of COVID pandemic: results from a national survey in Italy. PLoS One 2020; 15: e0238414.
- Saud M, Mashud MI, Ida R. Usage of social media during the pandemic: Seeking support and awareness about COVID-19 through social media platforms. J Public Aff 2020 Nov; 20(4): e2417.
- 24. Al-Dmour H, Salman A, Abuhashesh M, et al. Influence of social media platforms on public health protection against the COVID-19 pandemic via the mediating effects of public health awareness and behavioral changes: integrated model. *J Med Internet Res* 2020; 22: e19996.
- Nisar S, Shafiq M. Framework for Efficient Utilization of Social Media in Healthcare Sector of Pakistan. 2018.
- 26. McGowan BS, Wasko M, Vartabedian BS, et al. Understanding the factors that influence the adoption and meaningful use of social media by physicians to share medical information. J Med Internet Res 2012; 14: e117.
- Ibarra-Yruegas B, Camara-Lemarroy CR, Loredo-Díaz L, et al. Social networks in medical practice. *Medicina Universitaria* 2015; 17: 108–113.
- Alwan K, Ayele TA, Tilahun B. Knowledge and utilization of computers among health professionals in a developing country: a cross-sectional study. *JMIR Hum Factors* 2015; 2: e4.
- Kalayou MH, Tilahun B, Endehabtu BF, et al. Information seeking on COVID-19 pandemic: care Providers' experience at the university of gondar teaching hospital, Northwest of Ethiopia. *J Multidiscip Healthc* 2020; 13: 1957.
- Ajuwon GA. Use of the internet for health information by physicians for patient care in a teaching hospital in Ibadan, Nigeria. *Biomed Digit Libr* 2006; 3: 12.
- Wikipedia tfe. Bahir Dar. https://en.wikipedia.org/wiki/ Bahir_Dar. Published 2022. Accessed June 11, 2022.
- Health APHIP. COVID-19 Surveillance Situational Report-One. http://www.amhara.gov.et/c/document_library/get_file?uuid= 03399c9d-99cb-47d0-a983-91120fc2e21d&groupId=10226. Published 2020. Accessed June 4, 2022.
- 33. Rosen LD, Whaling K, Carrier LM, et al. The media and technology usage and attitudes scale: an empirical investigation. *Comput Human Behav* 2013; 29: 2501–2511.
- 34. Sadore A, Handiso D, Wontamo T, et al. Influence of Social Media Use on Practice of COVID-19 Preventive Measures Among Ethiopian Residents: An Online Cross-Sectional Study. *Disaster Med Public Health Prep* 2021: 1–6. doi:10. 1017/dmp.2021.184.
- Software E. +EpiData Software Download. https://www.epidata. dk/download.php. Published 2021. Accessed June 4, 2022.
- IBM. IBM SPSS Statistics. https://www.ibm.com/uk-en/products/spss-statistics. Published 2021. Accessed June 4, 2022.

- 37. Song H, Omori K, Kim J, et al. Trusting social media as a source of health information: online surveys comparing the United States, Korea, and Hong Kong. *J Med Internet Res* 2016; 18: e25.
- 38. Dias C, Escoval A. Narrowing the skills gap for innovation: an empirical study in the hospital sector. *JMIR Hum Factors* 2014: 1: e3598.
- 39. Salloum SA, Mhamdi C, Al Kurdi B, et al. Factors affecting the adoption and meaningful use of social media: a structural equation modeling approach. *Int J Inf Technol Lang Stud* 2018; 2: 96–109.
- 40. Davis FD, Bagozzi RP, Warshaw PR. Extrinsic and intrinsic motivation to use computers in the workplace 1. *J Appl Soc Psychol* 1992; 22: 1111–1132.