

Virtual but essential: Students' use of online resources for sexual and reproductive health information during COVID-19 pandemic in Ghana

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Abstract

Despite the disruptions in various sectors of society because of the COVID-19 mitigating measures, the existence of technological innovations provided alternative means to addressing most of the challenges brought about by the pandemic. The novelty of the COVID-19 pandemic led to an increase or introduction of and adoption of novel ways of accessing healthcare information and services. Although there are evidence of the youth seeking for sexual and reproductive health information from the internet, there is limited literature on whether the COVID-19 protocols influenced the use of internet information by the young adults in low-and -middle income countries. Using a convenience sample of 367 respondents from six public universities in Ghana, we investigated students use of the internet for information on sexual and reproductive health (SRH) amid the COVID-19 pandemic. The internet sources used by students before and during the pandemic was mainly search engines. Apart from the use of search engines, all the other internet sources saw a decrease in the percentage of students who relied on the internet for information on SRH during the pandemic. This calls for further investigations into why the proportion of students who use social media for SRH information declined during the pandemic.

Article History: Received 28 July 2023

Accepted 24 November 2023

Keywords: Sexual and reproductive health, internet sources, COVID-19, students, young adults

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Introduction

Many young people in low- and middle-income countries continue to receive information on sexual and reproductive health from parents, peers, family members and teachers with only a few resorting to the media (Gyan et al., 2017; Mcharo et al., 2021). Other means of information and communication have emerged since the development of accessible and user-friendly information and communication technology. New communication technologies, especially the advent of the internet particularly, social media have changed the communication landscape for the youth. Young people tend to be enthusiastic about technology, especially the use of the internet for information about their education, purchasing, as well as healthcare including sexual and reproductive health (Asante, 2021; Ussher et al., 2023). Evidence from the global north indicates that sexual and reproductive health information from the internet has the potential to help young people practice safe sex. Studies suggest that the use of online sources for sexual and reproductive health information provided users with some form of privacy and anonymity (McMullan, 2006; Rea et al., 2022). This feature of the use of internet has the potential to bring great relief to most young people in low- and middle-income countries markedly in societies where issues about sex are taboo or too sensitive to be discussed. Other researchers also argue that the use of online resources offers users multiple sources of health information (Eleuteri & Toso, 2023). Social media for instance makes access to information more interactive as well as available in real time, in the process, it provides a wide range of content although young adults may be superficially engaged on them (Olamijuwon et al., 2021).

Although young people have varied uses of online resources, this study focuses on describing students' use of the internet for information on sexual and reproductive health before and during the outbreak of the COVID-19 pandemic. The outbreak of the novel coronavirus disease (COVID-19) which was first declared in China in December 2019 and declared a global pandemic on March 11, 2020, by the World Health Organization, necessitated changes in the way we lived due to the nature of how the disease spreads. Several countries adopted or put in place measures such as restrictions on human movement and public gatherings generally to curb the rapid spread of the corona virus. These measures, however, ended up disrupting daily life and in-person participation in activities. Despite the disruptions in various sectors of society because of the COVID-19 mitigating measures, the existence of technological innovations provided alternative means or approaches to addressing most of the challenges brought about by the pandemic. To ensure the continuity of daily life and in-person participation in activities, most activities took place online instead of face-to-face participation or meetings. Thus, the pandemic led to most societies leaning towards online activities (Nguyen et al., 2020; Pierce et al., 2021; Ussher et al., 2023; Wijesooriya et al., 2020). For instance, e-learning, online shopping (e-shopping) and online health (mHealth) were used where possible to replace in-person work, healthcare, education, shopping, and meetings.

The novelty of the COVID-19 pandemic led to an increase or introduction of and adoption of novel ways of accessing healthcare information and services. This adaptation by members of society reiterates Giddens' (1984) structuration theory, which posits that individuals rationalise and make use of the opportunities or resources available to them in the society to address or meet their needs. Although the individual finds him/herself in a society where there are existing institutional norms and values, in the face of a challenge the individual carves his/her way around the institutions to solve or address the challenge. With the restriction of movements and gatherings during the early days of the global COVID-19 pandemic, educational institutions were closed, and students had to leave campus. Not being able to interact with peers and service providers on a face-to-face bases, it was expected that students will adapt new ways of going about their lives. Students who used the internet to meet their sexual and reproductive health needs before the outbreak of the pandemic are expected to continue to use it even when they are faced with strict COVID-19 mitigating measures.

Studies have shown the importance of the internet as a source of information for young people and for that matter their sexual and reproductive health (Buhi et al., 2009; Guilamo-Ramos et al., 2015). Evidence from the global north suggest that the internet has great potential in providing the youth with sexual and reproductive health information to encourage safe sex (von Rosen et al., 2017). However, studies on the use of the internet for sexual and reproductive health information are inconclusive on its use and impact among young adults in low-and-middle income countries, especially in sub-Saharan Africa (Iliyasu et al., 2017; Nwagwu, 2007). Although there are evidence of the youth seeking for health information, specifically sexual and reproductive health from the internet, there is limited literature on whether the COVID-19 protocols influenced the use of internet information by the youths in low-and -middle income countries. Recent studies on COVID-19 and the use of internet, suggests that a lot of activities that were carried out on a face-to-face bases before the outbreak of the pandemic were moved online (Nguyen et al., 2020; Pierce et al., 2021; Ussher et al., 2023). This paper seeks to investigate whether there was a significant difference in students' reliance on the internet for information on sexual and reproductive health before or during the outbreak of the COVID-19 pandemic. The specific research questions were: 1) what are the various online sources students use to access information on sexual and reproductive health before and after COVID-19 pandemic? 2) what specific search engines did students use to access information on sexual and reproductive health before and after COVID-19 pandemic? and 3) which social media sources/platforms did students use to meet their sexual and reproductive health needs before and after COVID-19 pandemic?

Methods

Study design

An online cross-sectional survey was used for the current study. This was deemed appropriate because it permits data to be collected from a large group of people with diverse sub-groups at a specific period in time and conclusions about that population to be made (Creswell, 2018; Sarantakos, 2013). Since this study was carried out during the outbreak of the COVID-19 pandemic, there were constraints in terms of mobility across geographical areas. Thus, an online cross-sectional survey was the only relevant scientific approach that could be used.

Sample and sampling approach

Graduate and undergraduate students from six public universities in Ghana made up the study's sample of respondents. The justification for selecting these universities is because, following the shutdown of the physical campus due to directives from the Ghanaian government, these six universities switched to online teaching and learning for their degree programmes. This therefore makes these universities the prime candidates for sharing experiences with using online platforms. In terms of their fields of specialisation, these six universities are also the most diverse. Considering this, a cluster sampling method was used. This was accomplished by collecting each of the six universities' student mailing lists. Following that, emails with a link to the data collection form were sent to all the discovered common students' email addresses. The link was also shared on students WhatsApp group platforms and learning management systems to increase the response rate for participation in the survey. In the first month, email reminders were sent out every two weeks using the same emailing mechanism. Following that, a weekly and subsequently a daily reminder was sent out. As of the 2020 academic year, the total number of tertiary students in Ghana was 547,000 across all postsecondary institutions (Statista, 2021). Using the sample size computation recommended by Krejcie and Morgan (1970), the required sample size was 384. In the process, 367 people took part in the survey. This yielded a 96% response rate.

Sampling and data collection

Due to the outbreak of the COVID-19 pandemic and its protocol, which restricted movements and social contact, we employed a convenience sampling technique in recruiting respondents for the study. A user-friendly questionnaire was designed on google platform and the link was shared on various student platforms including WhatsApp, Learning Management Systems (LMS) for universities that had access as well as students' email. Students who received these links on their various platforms and were willing to participate in the study by filling in the questionnaire became our sample for the study. To avoid duplication of respondents, the Google form was designed

in a way that students could only answer questions after inputting their student email addresses, which allowed them to only respond once. The link was made available to students between December 2020 and May 2021, after which we closed the link. Overall, a total of 367 students completed the survey.

Measures/data collection tools

The study questionnaire was developed by the authors to investigate students' use of internet sources for their academic work, sexual and reproductive health, and economic purposes. In this paper, we will only focus on the aspect of the questionnaire that measured students' use of internet sources for information on sexual and reproductive health. The details of the questionnaires used are as below.

We assessed sociodemographic characteristics such as gender, age of participants, relationship status and religious affiliation. This was followed by asking students to identify the various internet sources they turn to for information on sexual and reproductive health. Participants were provided with a list of internet sources to select and choose. They were allowed to select as many options as possible. The options provided to them were social media platforms, search engines, entertainment/news portals and specialised blogs. Out of the internet sources, search engines and social media platforms were the most used sources for meeting students SRH needs (see results section). We subsequently explored these 2 sources further by asking students to identify which search engines and social media platforms they used most.

Data analysis

For the analysis of the survey data, the statistical software IBM SPSS version 23 was used. Descriptive statistics were used to describe the data. We specifically used means, standard deviations, frequencies, and percentages to describe the data. We also used bar graphs to explore the various sources of information for students SRH information before and during the pandemic.

Results

Socio-demographic characteristics of participants

A total of 367 students from 3 Universities in Ghana completed the online survey. Approximately 56% were females with the 44% being males. Although 3.3% of the respondents did not indicate their relationship status, majority of the participants were single (76%) with 12.8% and 7.9% indicating that they were "in a relationship" and married respectively. In terms of age, the mean age of the respondents was approximately 24 years (SD = 5.7 years).

Students' sources of internet information for SRH needs before and during the pandemic

Students were asked to identify the various online sources they used to access information on sexual and reproductive health. Among the internet sources used by students, search engines were the most preferred source of information before and during the pandemic. The data indicates that 66.7% of the respondents relied on search engines for information on their sexual and reproductive health both before and during the pandemic. Thus, the outbreak of the pandemic did not affect the use of search engines by students. The data shows that apart from the use of search engines, all the other online sources saw a decrease in the percentage of students who relied on them for information for their sexual and reproductive health during the pandemic. Before the outbreak of the pandemic, 64.6% of the respondents relied on social media for information with respect to their sexual and reproductive health, however the proportion decreased to 45.3% during the pandemic.

Specialized blogs were used by a few students (16.7%) before the outbreak of the pandemic, however, this decreased drastically to 2.4% during the pandemic. Largely, most students did not rely on online entertainment news portals for information on sexual and reproductive health and this could be attributed to the content of these news portals. In all only 6.3% of the students identified the online entertainment news portal as a source of information for their sexual and reproductive health. However, during the pandemic, no student turned to this source.

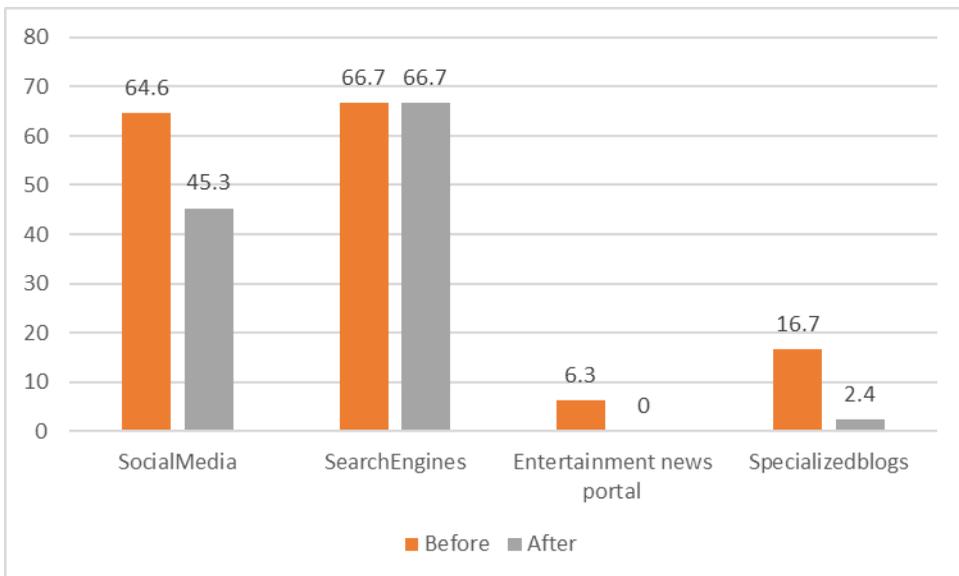


Figure 1: Internet sources used before and during the pandemic

Search engines used by students for their SRH needs before and after COVID-19 pandemic

We went on further to examine the specific sources under each internet source available for use by students for their sexual and reproductive health information. With respect to search engines, respondents were asked to identify the various search engines (Google, Siri, Alexa and Bing) they relied on to meet their sexual and reproductive health needs. Before the outbreak of the COVID-19 pandemic 95.6% of the respondents indicated that they used the google search engine to search for information on sexual and reproductive health. The percentage of the respondents who used the google search engine, however, decreased slightly to 80.5% during the pandemic. The next search engine patronized by our respondents was Siri. Before the pandemic, 15.6% of the respondents turned to Siri to meet their SRH needs, however this declined to 4.9% during the COVID-19 pandemic. Although no student relied on Alexa before the pandemic, 4.9% of the students indicated that they relied on Alexa to meet their SRH needs during the pandemic. In the case of Bing, 11.1% of the respondents relied on it before the pandemic, however, no student relied on it during the pandemic.

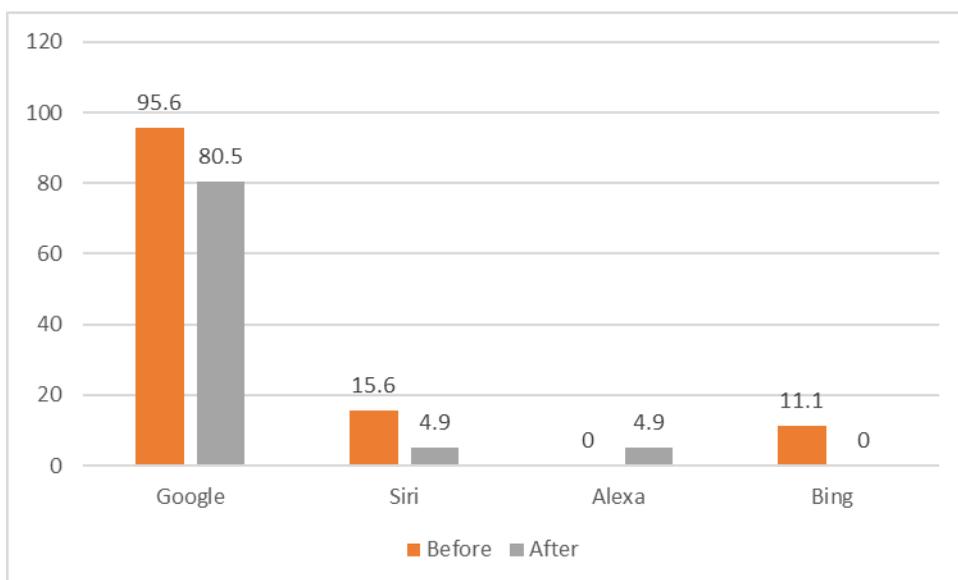


Figure 2: Search Engine used for SRH information before and during the pandemic

Students use of social media for SRH information before and during COVID-19 pandemic

Another internet source used by respondents is social media. Social media has gained wide popularity among youth and is used for all purposes. For this study, we focused on the various social media platforms used by students to meet their sexual and reproductive

health needs. These social media platforms include Instagram, Facebook, WhatsApp, TikTok, YouTube and Twitter. Although students had the opportunity to specify other social media sources, none identified other sources apart from these. Our data indicated that more than half of the students (59.5%) relied on WhatsApp for information on SRH before the outbreak of the COVID-19 pandemic. This decreased to 22.6% during the pandemic. YouTube was another social media source patronized by our respondents with 40.5% of the respondents relying on it for information on SRH before the pandemic, this also declined to 32.3% during the pandemic. Indeed, as described in Figure 3, students relied on all the social media sources both before and after the outbreak of the pandemic except for TikTok which was not identified as a source of information during the pandemic.

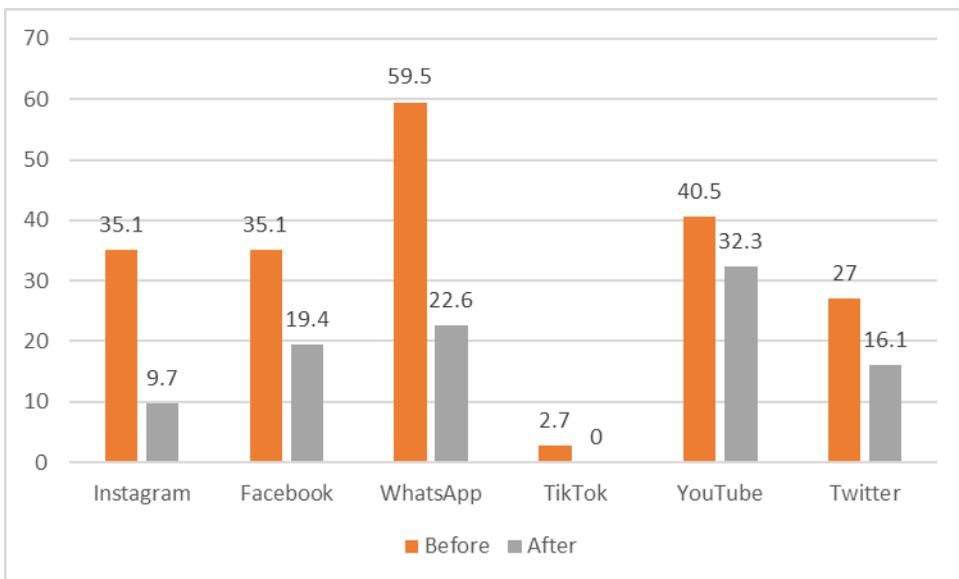


Figure 3: Social media used for SRH information before and during the pandemic

Discussion

This study was conducted among university students to explore the use of the internet for information on sexual and reproductive health information and its relationship with the practice of safe sex before and during the COVID-19 pandemic. From the descriptive analysis, this study observed that indeed before the outbreak of the pandemic, some students relied on the internet for information on sexual and reproductive health. This is not peculiar to students in Ghana alone but has become a common practice among the youth. Studies have indicated that most youth are seeking information on STIs, contraceptives and relationship advice from the internet (Finn et al., 2023; Ibegbulam et al., 2018). Among the internet sources used by students, search engines were the

most used before and during the pandemic. This is in line with other studies that found that many users access health information including sexual and reproductive health information using the search engines (De Choudhury et al., 2014; Purcell, 2011). Search engines have been identified as the first-place users of the internet to search for information on specific topics (Finn et al., 2023; Ibegbulam et al., 2018; Purcell, 2011). Such platforms make the process of finding information on the internet quick and simple, hence its popularity among most end-users. According to Finn et al. (2023), the internet is used by the youth because it provides them with privacy. Despite the outbreak of the pandemic, students' search for information on the internet was not affected since respondents who were already using the search engines before the pandemic continued to use this internet source even during the pandemic. General purpose search engines mainly, Google and Bing were the most popular among the respondents, an observation which cuts across the globe (Purcell et al., 2012). It is argued that Google is easily and readily available, hence it was not surprising to see a lot of students identifying it as a source of information for their sexual and reproductive health.

More than half of the respondents sourced their sexual and reproductive health information from social media before covid. However, the number of respondents who used information from social media for their sexual and reproductive health decreased during the COVID-19 pandemic. Although this number decreased during the pandemic, it still suggests that most young people used this media to acquire SRH information. Studies carried out during the COVID-19 pandemic suggest that although most people turned to social media, it was to seek emotional and practical social support (Lisitsa et al., 2020), this could explain the low use of this source for SRH information. This is not surprising since social media has become an alternative platform for sharing and seeking information (Paul & Dredze, 2011). Social media to a large extent is shaping youth behaviour including their sexual behaviour since it provides them with such information (Stevens et al., 2017). These allow users to share and receive information from their contacts and others on any topic including sexual and reproductive health. The main social media platform used by the respondents was WhatsApp. Users of WhatsApp use this media to share information instantly with their contacts or networks through text messages, sharing of videos, pictures, or audios. Several studies argue that WhatsApp plays an important role in health information sharing, which when applied to educating and informing the youths on their sexual and reproductive health would yield positive results (Stevens et al., 2014). For instance, Pfeiffer et al. (2014) found that adolescents in Tanzania, accessed sexual and reproductive health information through the internet on Facebook. A study on students aged 18-24 years in Tanzania identified that students' preferred source of SRH information was the media (Mcharo et al., 2021).

Apart from the use of search engines, all the other internet sources saw a decrease in the percentage of students who relied on the internet for information on sexual and reproductive health during the pandemic. This calls for further investigations into why the proportion of students who use social media for SRH information decreased. Largely,

access to internet has improved greatly in most African countries, however, factors such as poverty, cost of devices and internet data may influence the use of internet (Asante, 2021; West, 2015). Although accessing information on the internet comes at a cost, students have access to free data when they are on campus and thus, could easily go online for free when school was in session (Asante & Hiadzi, 2018). However, this access was curtailed when in the early days of the outbreak of the pandemic, students had to stay home. When students had access to free internet on campus, they used the information from online sources. Once the universities were closed due to COVID-19 protocols, the proportion of students who used information from the internet declined. This could explain why the number of students who used the internet to meet their sexual and reproductive health needs declined during the pandemic. The decline in the use of internet sources during the pandemic compared to before the pandemic among students is indicative of the digital divide that exist in most societies, with socioeconomically disadvantaged groups having limited access to internet data for regular use. For students to benefit from this technological revolution, there is the need for internet data to be free and/or affordable for all to access and use.

Limitation

One notable limitation in this study pertains to the potential for sample bias. Since this study was carried out during the outbreak of the COVID-19 pandemic, there were constraints in terms of mobility across geographical areas. Thus, an online cross-sectional survey was the only relevant scientific approach that could be used. The selection of participants might inadvertently favour individuals who are already users of the internet because the survey was done online. This could result in an underrepresentation of all students. Consequently, the findings may not capture the full spectrum of experiences and perspectives present among university students. Another limitation of the study has to do with the sensitive nature of the topic. Discussing sensitive topics such as sexual behaviour might have influenced the responses of the respondents leading to social desirability bias. We recommend that future studies should employ multiple data collection methods aside online surveys to capture the views of all students to provide a holistic view on the topic.

Conclusion

Since the outbreak of the COVID-19 pandemic, most activities have been moved online and thus, more people seek, share, and receive information through the internet. Among students, the internet was not only a means for acquiring an education during the pandemic but also a source of information on sexual and reproductive health. The internet plays an important role in providing young adults with information that goes a long way to help them practice safe sex. In as much as students relied on internet sources for information before the pandemic, this changed for some students during the pandemic because they had to move away from their free source of internet data (campus residence). As such, all barriers to the use of the internet in low- and middle-income countries should be removed to encourage more young adults to use this alternate source of information for their sexual and reproductive health even during a pandemic. In a pandemic situation, in order not to lose out on the gains and strides made with making sexual and reproductive

health information available to all through the internet, governments should reduce or put in place measures that could reduce cost of internet data, at least for the young adults.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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