

Interactions With COVID-19 Content On Social Media: Outcomes Of Social Media Use On Student KAPs

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ABSTRACT

In two years, COVID-19 has seen drastic developments in the world stage, so knowledge, attitudes, and practices (KAPs) on the disease may likewise be changing with it, which is the exigence of this study. One objective of this study is to find if there is a difference in KAP between social media platforms by doing Kruskal-Wallis H tests. Another objective is to compare results with past literature from the beginning of the pandemic by doing a multiple linear regression (MLR) and comparing the results for shared survey questions. A convenience sample of 52 students from a high school in the U.S. was surveyed, finding that less of them saw COVID-19 vaccinations as effective when compared to other prevention measures (75% vs. ~85%), 32.7% incorrectly responded that asymptomatic people cannot spread the disease, and that social media is the predominant channel of information on COVID-19 for them. Compared to other studies, the sample was not as risk perceptive in their attitudes and had lower adherence to the preventive practices. The survey responses were further turned into KAP scores to be used in the H tests and MLR. These found no significant difference in KAP scores between Twitter, Tik Tok, Instagram, and YouTube users, and predicted that holding more knowledge on the disease will lead to more practices being taken, while attitudes predicted no significant impact on the number of practices taken. With these lapses in KAPs, more awareness efforts on COVID-19 should be directed to students at the school of study.

Introduction

The announcement of COVID-19 as a global pandemic on March 11th, 2020, by the WHO marked an alarming period as the world was overtaken by the virus. This necessitated an expedient public health campaign by world governments to promote preventive measures against the disease, such as lockdowns, mask wearing, and self-isolation (AJMC, 2021). The U.S. was no exception to this, where former president Donald Trump subsequently declared a state of national emergency, and states followed to enact a lockdown, which was stringently backed by the CDC (AJMC, 2021).

With these developments, swaths of schools across the U.S. were quick to disband face-to-face learning, which left students at home. While at home, youth were left with social media to safely interact with others, which is a practice that is still strong up to this present study (Cauberghe et al., 2021). This raises an especially important concern of how they base their health decisions for COVID-19 on social media, since much of the existing literature has found that people use it as the predominant source of information on the disease (Aynalem et al., 2021; Campbell et al., 2021; Lahiri et al., 2021; Nemat et al., 2021; Singh & Balhara, 2021). However, none of these studies have collected information on what social media platforms were specifically used, which is problematic given that the platforms moderate COVID-19 content differently, as explained in a Harvard study by Krishnan et al. (2021). This may have a direct influence on the KAPs of adolescents. Something that further

meddles the results of these studies was that they were conducted at the beginning of the lockdowns, so with all of the time that has elapsed since then, their findings may not be applicable to high school students in the 2021-2022 school year, which is the anticipated implication of this study.

To address these gaps, the research question posed for this study will be: Is there a difference between select social media apps, such as Tik Tok and Instagram, and the knowledge, attitudes, and practices (KAPs) that students from a certain high school have for COVID-19? To address this question, this study will look at how KAP metrics may differ between social media users of different platforms. A sub-question adding on to this will see if knowledge and attitude metrics are reliable predictors for taking more practices against the disease. This sub-question is similar to what has been studied by the observed literature. Lastly, another sub-question compared the KAP survey responses to past studies to see if there would be significant differences from 2020 to 2022.

Literature Review

Former research on a population's handling of COVID-19 is based on a model of knowledge, attitudes, and practices (KAPs), where studies have chosen to study all three parts or only some of them. Surveys are used to gather data on these parts, which makes it simple to compare the studies, being the focus of this literature review. This comparison is also done to identify common factors for the observed trends and find gaps in the literature that may be addressed in this present study. Convenience samples were used for all of these studies.

COVID-19 Knowledge

For knowledge, a prolific finding across studies was that social media is largely used to learn about diseases. A study in the *Journal of School Health* conducted an online survey in March 2020, where they found that students at a public high school in Georgia were more likely to get their information about COVID-19 from peers or social media instead of authority figures such as healthcare, schools, or the news media. This also coincided with an increase in screentime that was reported by the students. School administrators only referred high achieving students to the survey, which makes these results more convincing (Campbell et al., 2021). Likewise, in a survey conducted by Sharanisha et al. (2021) at the same time, it was revealed that 520 out of 600 respondents, which were sampled from Saudi Arabian students pursuing professional studies, got their information on the coronaviruses from social media. With Singh & Balhara (2021) and Paschke et al. (2021) finding an unhealthy increase in social media screentime among Indian university students and German youth respectively after the pandemic started, the significance of social media as an information medium is further compounded. A survey by Goyal et al. (2021) was the only notable exception for this trend, where only a quarter of their sample of 230 dental students in India used social media as the main source of information on diseases. For the rest of the sample, half used web browsers, a tenth used newspapers, and another tenth used T.V.

In spite of social media being a major source of information on diseases, gaping holes were evident for knowledge. A concerning finding from the Campbell et al. (2021) study on Georgia high school students was that almost none of the respondents answered that COVID-19 is a dangerous threat for teens. The researchers suggest that this may cause them to be careless and thus further facilitate community spread of the virus. This contradicts the other findings of the survey, which were that almost all students understood the symptoms of the disease and how to do social distancing and quarantining, so they should know that COVID-19 is dangerous. However, the question is worded confusingly, which may explain this unusual result. For Sharanisha et al.'s (2021) study, it was discovered that while almost their entire sample of graduate school students have heard of the coronavirus family, only half have heard of COVID-19 in that family and correctly understood that a treatment existed for it.

Contrary to these poor findings, in a survey of 546 university students in Ethiopia by Aynalem et al. (2021), which also took place in March 2020 and found social media to be the predominant channel of information, it was found that they understood the risks to youth better when compared to high school students from the Campbell et al. (2021) study, and in deep contrast to Sharanesha et al.'s (2021) study of graduate students, 95% correctly answered that while treatments do exist for the disease, there is no cure for it. Moreover, social media users had more knowledge on COVID-19 than nonusers. This discrepancy in results may be attributed to what social media platforms were used, though the data for this was not gathered in any of the studies. For this reason, the survey for this present study will collect information on the social media platform used.

COVID-19 Attitudes

Social media usage may be a contributor to the low mental health and the poor outlooks on the situation of the pandemic, which were seen in two surveys administered through social media posts in mid-2020. Moy & Ng (2021) found from 367 Malaysian university students that almost all believed that COVID-19 would spread in their communities, that it was difficult to control, and that it restricted their social activities. Following with this, half of the sample saw COVID-19 news on social media as worrying, which the researchers point to as one stressor that can explain the trend of declining mental health during the pandemic. Lahiri et al. (2021) had a similar discovery, finding in a survey of 1,249 Indian adults that those who were exposed to COVID-19 news on social media were more likely to be distressed. This possible link between mental health and social media may help explain the preventive measures that teens take, which is the focus of this study.

A survey by Zeballos Rivas et al. (2021) observed this link between attitudes and practices, finding that they had a strong relationship with each other, especially in social media users. In their survey, which focused on 886 residents throughout Bolivia and was distributed through a social media post, almost all of the respondents strongly agreed that COVID-19 is dangerous and very likely to infect them. This showed that almost everyone had a moderately high, risk perceptive attitude for COVID-19, which was also seen to occur with the high acceptance noted for vaccines and the other preventive measures. Risk perception was even higher for social media users, which also correlated with a higher acceptance of these behaviors. These findings provide evidence that attitudes can be an effective predictor of practices taken, which supports the first sub-question of this present study.

COVID-19 Practices

Adherence to the COVID-19 prevention guidelines was somewhat universal. About three quarters of the Georgian, Saudi Arabian, and Ethiopian student samples from Campbell et al. (2021), Sharanesha et al. (2021), and Aynalem et al. (2021) respectively practiced hand washing, paying attention to symptoms, and not touching one's face, while about half avoided crowds. Social media was reported to be the dominant channel of information used in these studies. Meanwhile, Wu & Munthali (2021) saw an almost unanimous adoption of these practices in their social media survey of 300 foreign exchange students in China. Both researchers point to a study that accredits this high rate of adherence to the extensive awareness campaigns in the country (Zhong et al., 2020).

A study by Kebede et al. (2020) was the only notable outlier for practices, where 929 Ethiopians reported in a survey that almost everyone in their country took poor measures for the disease, such as in using crowded public transport, living and working in crowded places, shaking hands, not caring about the symptoms of COVID-19, and not using face masks and hand sanitizers. The respondents cited financial issues as the reason for these habits, since many could not pursue safer jobs or afford face masks. Considering that this study did

not collect any data on social media or any other channels of information used to learn about the disease, social media may be a prominent cause for these poor practices, which is why it warrants an in-depth analysis in this current study.

Methods

Participants

A public high school in the Southeastern U.S. was chosen to be the site of this cross-sectional study, with all students at the school being included in the population of the study. An online survey was used in order to safely gather responses from this large population. The online survey that was to be distributed was approved by the Institutional Review Board for the school district. To distribute the online survey, a QR code which linked to a Microsoft Forms was displayed on a large paper poster and personally presented by the author to students at the cafeteria and library during lunchtime. Upon scanning the code, they were sent to an informed consent form, which explained the purpose of the study and their rights as a voluntary participant in it, plus more on Appendix A. After saving the URL, they could complete the consent form at home and then respond to the survey questions, which were on the next page. Incentives were offered in the form of candy, which was handed out after the data collection period ended. A convenience sample of 52 students was achieved through this process. This period of data collection spanned for two weeks starting on January 11, 2022, where the survey was then made unavailable afterwards.

Data Instrument

The survey for this study is designed around a model of knowledge, attitudes, and practices (KAPs), containing twelve, five, and seven questions on the three parts respectively, along with two questions on demographic information. These questions are available for viewing in the results section. The KAP model aligns with the goals of the study since adherence to the COVID-19 prevention guidelines may be dictated by one's knowledge and attitudes on the disease. It is reasonable to assume that more favorable practices would be seen in those who hold high knowledge and cautious, risk perceptive attitudes on COVID-19. The KAP model is also useful for examining how users of different social media platforms may differ, which can be done by comparing their scores for the three components.

The first part of the knowledge section of the survey contained six questions. These collected information on how frequently COVID-19 content was encountered on social media, social media screen time, and the channels of information (T.V., radio, internet, etc.) used to learn about the disease. The former question was adapted from Zeballos Rivas et al. (2021). Meanwhile, the latter question was adapted from a similar study by Campbell et al. (2021), and unique to this survey, it had a complementary question to it which asked what specific social media platform was used, since there are no studies as of yet that collects information on what platform was used, even though they may all handle COVID-19 content differently, and thus dictate students' KAPs towards the disease. This is evident in the case of Facebook, where COVID-19 posts are fact checked. This is also evident in the fact that some studies strongly differ in KAP results, which may be correlated to the different social media platforms used by students.

The second part of the knowledge section of the survey had six questions and was used to calculate the student's score for knowledge. This part questioned them about their awareness of the symptoms of COVID-19 and their awareness on the new Omicron variant of the disease. It also asked them about the effectiveness of the prevention measures, such as vaccination, hand washing, and social distancing. All of the questions were answered as true or false, except for the last one that asked what preventive measures were effective, which

was multiple selection. These questions for the second part of the knowledge section came from studies conducted by Aynalem et al. (2021) and Belete et al. (2021). Selecting a correct choice gave one point towards their score for knowledge, while one point was only subtracted if an incorrect choice was chosen in the multiple selection question. A max of 10 points is attainable for the knowledge section.

In the attitudes section of the survey that followed, there were five risk perception statements that focused on students' worries about the disease. These statements were adapted from Zeballos Rivas et al. (2021) and Moy & Ng (2021), who both in turn had adapted it from a study by Wong et al. (2007), which was conducted during the SARS epidemic. These series of questions were answered on a 5-point Likert scale and were used to calculate the score for attitudes. Points were given based on the difference between 3 and their response on the scale, which ranged from 1-5, 1 being strongly disagree, 3 being neutral, and 5 being strongly agree. With this scoring system, the score for attitudes could range from -10 to +10. A negative score denoted disregard for the disease, a positive score signified high caution, and a score closer to 0 denoted indifference.

The last section of the survey focused on practices, where it asked what prevention or safety measures students took for the disease. The practices questioned were handshaking, hand washing, wearing face masks, social distancing, and avoiding crowded places, which were adapted from studies by Belete et al. (2021) and Aynalem et al. (2021). Although vaccination status would be a useful metric to include in the survey, it was not collected due to privacy and legal concerns. These questions were only scored for correctness, so selecting a wrong choice would not deduct a point. A max of seven points is possible for this section.

Data Analysis

The results of the survey were exported to Microsoft Excel for data analysis, where the knowledge, attitude, and practice (KAP) section scores could then be calculated manually for each of the 52 respondents, which is shown in Appendix B. To answer the research question of this present study, which was to see if there would be differences in KAP scores between users of different social media platforms, Kruskal-Wallis H tests were done in the discussions section. To test the first sub-question of this study, a multiple linear regression was done in the discussions section to analyze the correlation of knowledge and attitude scores on practice scores. This will help to see if knowledge may help to promote better practices, since knowing about the preventive measures may not necessarily lead to one practicing them. Aynalem et al. (2021) focused on the relationship between knowledge and practices in their study. This sub-question will also help to see if attitudes may be an important facilitator for taking the prevention practices seriously, which was seen to be true in a study by Zeballos Rivas et al. (2021). For the second sub-question, which is covered in the results section, the survey findings were compared with past research from the start of the pandemic.

Results

52 respondents from the school of study were recorded for the online survey. This convenience sample was collected in two weeks starting on January 11, 2022. Table 1 shows that demographically, this sample was about halfway split between the genders and contained about the same number of students from each grade level, except for 12th grade, which had around two times more students when compared to other grade levels. This discrepancy may be attributed to the biased nature of a convenience sample, which does lead to some uncertainty when the results of this sample are used to make KAP assumptions about the population of this study. However, the results of this survey should still accurately represent the students at this school since the sample had a modicum of randomness in it and did not exclude any segment of the population – almost every

student had a phone that could access the survey, the data collection period spanned throughout two weeks, and the sample was collected at the cafeteria and library.

Table 1. Demographics of the sample.

Gender	Frequency	Percent
Male	23	44.2%
Female	27	51.9%
Other	2	3.8%
Grade level	Frequency	Percent
9 th	10	19.2%
10 th	9	17.3%
11 th	12	23.1%
12 th	21	40.4%

Some KAP trends can be noted in the survey responses. In Table 2, it is seen that out of all respondents, knowledge on COVID-19 was reported to have come from multiple sources, such as social media (71.2%), the internet (69.2%), and even radio (19.2%) surprisingly, which was not a trend seen in any of the observed literature. Only 5.8% used newspapers, and none selected religion. For those who selected social media, YouTube was the most popular platform used (35.1%), which was trailed by Instagram (24.3%), Tik Tok (18.9%), and Twitter (10.8%) for the main social media platform used to learn about the disease. 7.7% selected other, though invalid responses were provided. Snapchat, Reddit, and Facebook were also selectable options for this question, but not chosen by anyone. In this same subset of all social media users in the survey, social media screen time was largely centered around 5+ hours a week (64.9%) and 1-4 hours a week (32.4%), encounters with COVID-19 content on social media was frequent, with many experiencing it daily (51.4%) or weekly (43.2%), and about half used social media as the main source of information on COVID-19 (54.1%). These results illustrate the predominant influence of social media on teen behaviors.

Table 2. Information on content mediums used by the sample to learn about COVID-19.

Do you use social media to learn about COVID-19? (i.e. YouTube or Tik Tok)	Frequency	Percent
Yes	37	71.2%
No	15	28.8%
What other sources helped you learn about the disease? Select all that apply.	Frequency	Percent
Internet	36	69.2%
Government (WHO, CDC, local/state health departments)	30	57.7%
T.V. news media	32	61.5%
Radio	10	19.2%
Religion	0	0%
Newspapers	3	5.8%
In-person conversations, such as with friends or family	35	67.3%
None of the above / I have not heard about COVID-19	2	3.8%
Other	1	1.9%
What is your screentime on social media?	Frequency	Percent
Less than 1 hour a week	1	1.9%
1-4 hours a week	12	23.1%
5+ hours a week	24	46.2%
(does not use social media to learn about COVID-19)	15	28.8%

What social media platform do you mainly use to learn about the disease?	Frequency	Percent
YouTube	13	25.0%
Instagram	9	17.3%
Tik Tok	7	13.5%
Snapchat	0	0%
Twitter	4	7.7%
Reddit	0	0%
Facebook	0	0%
Other _____	4	7.7%
(does not use social media to learn about COVID-19)	15	28.8%

Looking back to all respondents in Table 3, for knowledge, almost all have said that COVID-19 is dangerous to youth, not just the elderly. This is a true fact, but a study by Campbell et al. (2021) at a public high school in Georgia found that only 2.6% knew this, though that question in their study was worded confusingly. There was a lapse in knowledge seen in this sample when 32.7% said that asymptomatic people cannot spread the disease. This result was similar to a finding by Campbell et al., but widely differed with Aynalem et al.'s (2021) study on Ethiopian university students, which saw many of them pass this question. Lastly of note for knowledge, in Table 4, practices that were reported to be effective by the sample included social distancing (88.5%), wearing face masks (86.5%), hand washing (86.5%), self-isolating (82.7%), getting vaccinated for COVID-19 (75.0%), using ivermectin (5.8%), and getting injected with disinfectants (7.7%). Not as many students seemed to be supportive of vaccinations when compared to the other preventive measures, and conflictingly, almost all of those who selected ivermectin or disinfectant also selected vaccinations.

Table 3. Sample's knowledge of COVID-19.

n = 52	Yes	No	I do not know
Do you know about the Omicron variant of COVID-19?	46 (88.5%)	6 (11.5%)	0 (0%)
Some symptoms of COVID-19 include coughing, fevers, loss of smell/taste, and/or shortness of breath.	51 (98.1%)	1 (1.9%)	0 (0%)
Symptoms of COVID-19 may appear 2-14 days after being exposed to it	47 (90.4%)	2 (3.8%)	3 (5.8%)
It is impossible to catch COVID-19 from someone who looks healthy (asymptomatic people cannot spread the disease)	17 (32.7%)	34 (65.4%)	1 (1.9%)
Although youth are less likely than older people to develop severe cases of COVID-19, the disease should still be taken seriously by them	46 (88.5%)	2 (3.8%)	4 (7.7%)

Table 4. Additional knowledge on COVID-19.

Select all of the ways that are effective at reducing the spread and/or protecting yourself from COVID-19.	Frequency	Percent
Social distancing	46	88.5%
Wearing a face mask when indoors	45	86.5%
Quarantining/isolating yourself	43	82.7%
Getting a COVID-19 vaccination	39	75.0%
Hand washing	45	86.5%
Using ivermectin	3	5.8%
Getting injected with disinfectant	4	7.7%

I do not know	1	1.9%
None of the above	4	7.7%

In Table 5, for attitudes, the risk perception statements with a lot of agrees or strongly agrees were about worrying for loved ones, Omicron spreading quickly, and COVID-19 existing in the community for a long time, which were findings shared with Malaysian university students at the beginning of the lockdown (Moy & Ng, 2021). Most of the respondents were neutral on catching COVID-19, which was also similar to Moy & Ng. The most disagrees or strongly disagrees was seen in a statement for COVID-19 being difficult to prevent, which was contrary to what was seen by Moy & Ng, where most agreed with it. This may be indicative of more confidence in the response to COVID-19 when compared to the beginning of the pandemic.

Table 5. Attitudes of the sample towards COVID-19 according to five risk perception statements.

n = 52	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I feel that I might be infected by COVID-19 at any moment	4 (7.7%)	8 (15.4%)	26 (50.0%)	12 (23.1%)	2 (3.8%)
I worry that my family members and friends will be infected by COVID-19	1 (1.9%)	3 (5.8%)	17 (32.7%)	23 (44.2%)	8 (15.4%)
I feel that the Omicron variant will spread quickly	4 (7.7%)	2 (3.8%)	17 (32.7%)	20 (38.5%)	9 (17.3%)
I feel that COVID-19 will persist in the community for a long time	4 (7.7%)	2 (3.8%)	16 (30.8%)	19 (36.5%)	11 (21.2%)
I feel that COVID-19 is difficult to prevent	4 (7.7%)	15 (28.9%)	21 (40.4%)	9 (17.3%)	3 (5.8%)

Despite overwhelmingly noting that the prevention measures were effective as a part of their knowledge, noticeably less students in this study had taken to applying them in their daily routines as observed in the practices section of the survey, illustrated in Table 6. About 80% said that they practiced hand hygiene, around 50% avoided handshakes, avoided crowded places, social distanced at least six feet, and wore face masks, and 21.2% were keen on spending no more than 15 minutes a day nearby a stranger while indoors.

Table 6. COVID-19 preventive practices taken by the sample.

n = 52	Yes	No	I do not know
Have you tried to avoid handshakes because of COVID-19?	26 (50.0%)	21 (40.4%)	5 (9.6%)
Have you practiced hand washing with soap and water for at least 20 seconds, especially after coughing/sneezing or being in a public place?	43 (82.7%)	7 (13.5%)	2 (3.8%)
Do you try to avoid crowded places?	28 (53.8%)	21 (40.4%)	3 (5.8%)
If soap and water are not available, do you use hand sanitizers containing at least 60% alcohol?	44 (84.6%)	5 (9.6%)	3 (5.8%)
Do you wear face masks when indoors?	34 (65.4%)	15 (28.8%)	3 (5.8%)
If you are indoors and within 6 feet of a stranger, do you try to spend no more than 15 minutes a day with them?	11 (21.2%)	36 (69.2%)	5 (9.6%)
Do you try to social distance at least 6 feet away from people?	24 (46.2%)	22 (42.3%)	6 (11.5%)

When comparing these findings to other studies, in Aynalem et al. (2021), which was on university students in Ethiopia, 90% of them reported that they avoided crowded places, which is much higher than the 50% figure from this study. In Belete et al. (2021), which was about visitors in Ethiopian hospitals, 70% said that they avoided crowded places, which is still much higher than seen in this study. Something also unusual in the results was that 50% avoided handshakes, which strongly differed from Belete et al., where 90% said that they did it. Levels of face masking were also 20% lower when compared to Belete et al., while levels of social distancing were very similar to the same study. The Aynalem et al. and Belete et al. studies took place in early 2020, while this present study was conducted in early 2022, so it is interesting to see this progression in practices happening in the results.

Discussions

Testing for Significant Differences Between the Survey Scores of Social Media Platforms

To test the research question of this study, which was to see if students using different social media platforms would score differently on the survey, H tests were conducted in Microsoft Excel. The steps for conducting the H tests are explained in Appendix C. P-values of 0.84, 0.78, and 0.75 were found for knowledge, attitude, and practice scores respectively, which are all greater than $\alpha = 0.05$, so this provides evidence that there was no significant difference in survey scores between Instagram, Tik Tok, Twitter, and YouTube users at the school of study. With this conclusion, it is not appropriate to provide a follow up on how the findings seen in the existing literature may be affected by one's social media preference. Further refinement of the survey design could help to establish a new understanding for this research question, which is explained in the limitations section.

Finding The Correlation of Knowledge and Attitude Scores On Practice Scores

The first sub-question of this study was about the correlation of knowledge and attitude scores on practice scores. A multiple linear regression was done to find if this correlation was significant, and the steps for conducting this analysis is explained in Appendix D. From the summary output table in Table 7, it was found that when taken as a set, knowledge and attitude scores (the predictor variables) accounted for 21% of the variance in practice scores (the criterion variable). It is difficult to predict human behavior, so being able to account for 21% of the variance shows that there is a substantial correlation between the predictor variables and the criterion variable. When looking at the predictor variables individually, knowledge score had a p-value of 0.0016, which is less than α , so it had a significant effect on practice scores, while attitude score had a p-value of 0.94, which is greater than α , so it did not have a significant effect on practice scores. More specifically, every 1 point increase in knowledge score led to a predicted 0.38 ± 0.11 point change in practice score, while every 1 point increase in attitude score only led to a predicted -0.0067 ± 0.085 point change in practice score.

Table 7. Summary output table for the multiple linear regression.

$r^2 = 0.21$	coeff	std err	t stat	p-value	lower	upper	vif
Intercept	0.92	0.93	0.99	0.33	-0.94	2.78	
Knowledge score	0.38	0.11	3.33	0.0016	0.15	0.60	1.19
Attitude score	-0.0067	0.085	-0.080	0.94	-0.18	0.16	1.19

A similar study conducted by Aynalem et al. (2021) also found that knowledge was correlated with more practices taken, which suggests that education on COVID-19 can mediate better handling of the pandemic. However, the risk perception statements for this survey, which were taken from Zeballos Rivas et al. (2021)

and Moy & Ng (2021), did not appear to influence how many practices were taken, which was not the case for Zeballos Rivas et al. where they found it to be a significant contributor to it. The Bolivian sample of Zeballos et al.'s study was found to have held strong risk perception sentiments, whereas the sample of this present study was indifferent to the risk of COVID-19, having an attitude score tending close to 0. These differences in results may be due to the large timeframe difference of this study, which has taken place long after the lockdowns ended. Meanwhile, their study took place at the beginning of the lockdown, which may explain the strong risk perception sentiments.

Implications

As seen in the survey results, many students base their health decisions for COVID-19 on social media, showing the insurmountable influence that it has on public health and safety. In considering the lapses in knowledge and practices from the survey responses, such as in the lower acceptance rate noted for vaccinations when compared to the other preventive measures, and the relative lack of risk perception as observed in the attitude scores, this leads to the need for better COVID-19 awareness not only at school, but also on social media and many other channels of information, such as in-person chats and the internet, which may be the best ways to deliver this message. The effects of this approach were apparent in a study by Wu & Munthali (2021), where they saw an almost unanimous adoption of the preventive measures in their survey of 300 foreign exchange students in China.

Limitations

The new understanding for the research question would be more profound if the survey design had considered how social media platforms moderated their COVID-19 content, since they may play a prominent role in one's views, and thus affect KAP on COVID-19, so future researchers should study how they affect KAP responses. One way to do this would be to show a social media post about COVID-19 that is marked with a fact checking note to some students in the survey, while other students would be shown ones from other social media platforms or not be shown it at all, and then compare the KAP scores between the groups. The same survey questions and statistical calculations from this study can still be used. This proposal would also help to expand the number of social media platforms analyzed, since it could be used to look at Facebook, WhatsApp, and other social media platforms that were not selected by any of the respondents in this study.

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