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Making COVID-19-Related Decisions: A Qualitative Study of University Students

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Abstract

Background: SARS-Cov-2 (Coronavirus Disease or COVID-19) has greatly impacted society since its first documented case in the United States. Specifically, college students have had to modify their campus behavior to minimize the spread of the virus. *Purpose:* The purpose of this study was to identify benefits and barriers to testing, reporting, and quarantining of undergraduate college students attending a large southeastern university. *Methods:* Undergraduate students were asked to complete an open-ended Qualtrics survey to share their perceived benefits and barriers to engage in behaviors to detect and prevent the spread of COVID-19. Through the use Grounded Theory, data were analyzed to determine codes and subsequent themes related to the probes. *Results:* Themes emerged in the categories of (a) Influencing Factors, and (b) Outcomes of the Health Behavior, with twelve and six themes respectively. Emphasis on disclosure of COVID-19 status could be beneficial in preventing the spread of the virus on large college and university campuses. *Conclusion:* The data collected in this study can be used to inform COVID-19-related policies and health communication campaigns at similar colleges and universities.

Keywords: COVID-19, prevention, health belief model, college students, health behavior

Making COVID-Related Decisions: A Qualitative Study of University Students Introduction

Since its discovery in 2019, SARS-Cov-2 (Coronavirus Disease or COVID-19) has changed the land scape of practices. Presently, there have been over 278 million confirmed cases and over 5.4 million deaths worldwide (World Health Organization [WHO], 2021). In the United States (U.S.), there have been 56 million cases and 825,000 deaths to date (Centers for Disease Control and Prevention [CDC], 2022). The proliferation of this virus has been caused by poor adherence to public health recommendations to slow the spread of the virus, the incidence of virus mutations, and a variety of additional reasons.

With the declaration of the COVID-19 pandemic in March 2020, the U.S. swiftly experienced a temporary "shutdown," to reduce the risk of virus transmission. Schools, businesses, universities, and large gatherings were closed in attempts to slow the spread of the virus. Public health guidelines recommended to socially and/or physically distance in public or quarantine at home to reduce the spread of the virus (O'Conner & Evans, 2020). On a community level, these public health guidelines served to provide safeguard and protection from the transmission of COVID-19. Yet, on an individual level, adhering to these guidelines proved difficult with some individuals unwilling to make personal changes to reduce the community spread of COVID-19 (O'Conner & Evans, 2020).

Simultaneously, many colleges and universities cancelled in-person classes and transitioned to online-only instruction (NCSL, 2020). Early evidence suggests negative relationships between academic motivation and sense of belonging and COVID-19-related distress (Marler et al., 2021; Usher et al., 2021). The lack of academic motivation and self-regulation to complete academic tasks stimulated some colleges and universities to quickly return to in-person instruction (Usher et al., 2021). These initiatives relied on students returning to campus under guidelines that would minimize the risk of contracting the virus, including measures taken for prevention, diagnosis, and treatment.

COVID-19-related behaviors determine if an individual, or more specifically, a university student, will follow public health guidelines and disclose their COVID-19 status (O'Conner & Evans, 2020). Disclosure of status is imperative to prevent and monitor the spread of the virus and safeguard the community (O'Conner & Evans, 2020). Knowing how to approach college students to encourage engagement in preventive behaviors, therefore, is critical. Information specifically regarding the benefits and barriers to engaging in desirable behaviors is paramount in minimizing the risk of outbreaks on a university campus. The purpose of this study was to identify benefits and barriers to COVID-19 testing, reporting, and quarantining of undergraduate college students attending a large southeastern university.

Methods

The COVID-19 Student Campaign Survey was conducted by the Cowbell Well campaign. This committee was developed to design and implement COVID-19-related health communication campaign materials for Mississippi State University and the Starkville, MS community

(Mississippi State University, 2020). This was a cross-sectional study. Students interested in participating were prompted to complete the survey, and informed consent was obtained prior to data collection.

Participants

In total, seventy-two undergraduate students completed an open-ended questionnaire about their views and experiences with COVID-19. Participants in this study were recruited via the Student Activities Portal within their university student accounts. Students were not compensated for their participation in this study.

Materials

Theoretical Framework

Survey development and data analysis for this study were guided by the Health Belief Model (HBM). There are six core constructs of HBM: 1) perceived severity, 2) perceived susceptibility, 3) perceived benefits, 4) perceived barriers, 5) cues to action and 6) self-efficacy (Rosenstock, 1974). HBM is defined as a health behavior change model used to predict individuals' responses and change in their behavior in disease prevention (Rosenstock, 1974). HBM is frequently applied in behavioral health-related research to predict the likelihood of health-promoting behavior (Chin & Mansori, 2019). Like other studies, HBM was used to examine the benefits and barriers to COVID-19 behaviors, specifically testing and isolating or quarantining in this study.

Instrument

The survey was designed by the Cowbell Well campaign at Mississippi State University and disseminated online through the Student Activities Portal. The survey was a 12-item, open-ended survey instrument, which focused on the benefits and barriers of COVID-19-related detection, quarantine, and isolation behaviors. HBM guided the development of the questions for the pilot survey (Rosenstock, 1974). Additionally, demographic information was captured including participants' age, classification, gender, race. COVID-19 testing behaviors and preferences were captured on the survey instrument, as well.

Cowbell Well COVID -19 Student Campaign Survey Questions:

Q1: What made it difficult for you to get tested for COVID-19?

Q2: What are the benefits of getting tested for COVID-19?

Q3: If you needed to get tested for COVID-19, what would make it difficult for you?

Q4: What would be the benefits of getting tested for COVID-19?

Q5: When a member of the MSU community gets tested for COVID-19 at an off-campus facility and tests positive, they are supposed to report those results to the MSU Longest Student Health Center. What might make it difficult to do so?

Q6: What would the benefits of reporting COVID-19 test results to the Longest Student Health Center?

Q7: What made it difficult for you to isolate or quarantine?

Q8: What would have made your quarantine or isolation experience better?

Q9: What are the benefits of isolating or quarantining?

Q10: If you had to isolate or quarantine, what would make it difficult for you?

Q11: If you had to isolate or quarantine, what would make that experience better for you?

Q12: What would be the benefits of isolating or quarantining?

Procedures

Students enrolled at a large, southeastern university were invited to complete a survey administered through Qualtrics software. Inclusion criteria were 1) students 2) currently enrolled full-time or part-time in courses at the surveyed university. Those not enrolled in the university were ineligible for participation in this study. Students were recruited via the Student Activities Portal, a platform utilized by students to manage, organize, and maintain membership in various organizations on campus. This portal is only accessible to currently enrolled students. The Qualtrics link was disseminated via the home page of the portal and was open for nine consecutive days in late August and early September following the start of the Fall 2020 semester.

Prospective participants accessed the link and were provided with information about the study and informed consent documentation. Completion of the survey was considered consent for the purposes of this study. All study procedures were approved by the Mississippi State University Institutional Review Board under protocol IRB-20-218.

Data analysis

After the survey was administered via Qualtrics, the raw data was exported to Microsoft Excel and converted into SPSS files. The descriptive statistical reports from SPSS Version 28 were used to prepare the data analysis. Grounded Theory was utilized to make sense of the qualitative data through the development of codes and themes (Tie et al., 2019). This qualitative analysis method was conducted by hand. Each survey response was initially analyzed using open coding, which assigns labels to data to summarize the basic topic of a survey response passage into a word or short phrase, kept as similar to the original phrases as possible (Charmaz, 2006). Axial coding was used to identify the relationships between the codes, and related codes were grouped into two categories: Influencing Factors and Outcomes of the Health Behavior (Charmaz, 2006). Theoretical coding was conducted to assimilate the axial codes and determine the core structure contributing to COVID-related decision making. Once the codes were developed, the themes were identified and documented with corresponding exemplary quotes.

Results

The survey sample consisted of 72 participants between the ages of 19 to 30 years, with a mean age of 24 years (see Table 2). The majority of the participants were female (52%) and undergraduate students (61%). Also, most participants described their race as white (54%). Most participants (72%) had never been tested for COVID-19.

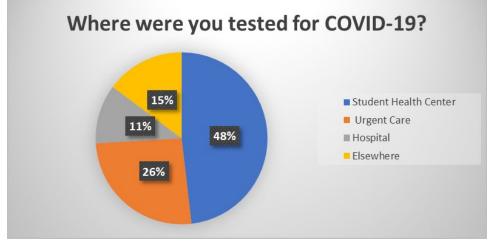
Table 2

Characteristics of Survey Participants		
Sample Characteristic	Frequency	%
Age, years (range $= 19-30$)		
Less than 20	3	4
20 to 22	60	83
Greater than 22	9	13
Classification by Year		
Undergraduate Student	44	61
Graduate Student	12	17
Unclassified	16	22
Gender		
Male	16	22
Female	37	52
Non-Binary	1	1
Prefer Not to Answer	17	24
Race		
White	39	54
Black or African American	9	13
American Indian or Alaska Native	2	3
Asian	2	3
Other	2	3
Prefer Not to Answer	3	4
Hispanic, Latinx, or Spanish Origin	3	4
Did Not Respond	11	15
Have You Ever Been Tested for COVID	-19?	
Yes	20	28
No	52	72

The majority of the participants (48%) who tested for COVID-19 were tested at the campus student health center (Figure 1). Additionally, the majority of the participants (59%) said they would go to the student health center if they needed to be tested for COVID-19 in the future (Figure 2). Participants (57%) preferred to receive information from the university about COVID-19 via email. The university's website ranked as the second preferred method to receive COVID-related information, followed by on-campus signs, then social media.

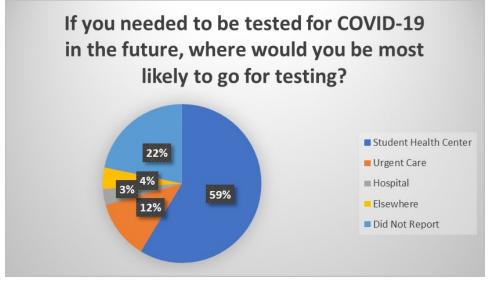
Figure 1

Testing behaviors of undergraduate students attending a large southeastern university





Testing location preferences of undergraduate students attending a large southeastern university



A total of 62 open codes emerged through the data analysis process, which identified reoccurrences and similarities in the qualitative data. The concepts labeled by these codes serve as the link between the data collected and the theory that explains the data (Tie, 2019). The data analysis showed two categories that accounted for variations in the perceived benefits and difficulties related to COVID-19 testing, reporting, and quarantining: Influencing Factors and Outcomes of the Health Behavior. These categories fall under the large umbrella of what can be referred to as "Affective Determinants of Making COVID-related Decisions." This combined the two categories and provided a basis of explanation for the cognitive processes influencing the participants' responses describing the benefits and difficulties of COVID-19 testing, reporting, and quarantining. Themes from each of the two identified categories will be described, including exemplary quotes from each theme.

Influencing Factors contributed most heavily to the participants' responses regarding the benefits and difficulties of COVID-19 testing, reporting, and quarantining. Of the 62 total open codes, 61% were categorized as Influencing Factors. Of the Influencing Factors codes 71% were related to the difficulties surrounding COVID-19 testing, reporting, and quarantining. The most frequent themes of difficulties for COVID-19 testing noted by the participants were waiting, inaccessibility, and inconvenience. Waiting (22%) and inaccessibility (22%) created the most difficulty for the participants to get tested, whereas inconvenience (23%) was seen as the biggest hindrance if the participants were to need to be tested in the future. *Lack of awareness* (18%), *issues with the university's student health center* (15%), and *selfishness* (11%) were the influencing factors related to reporting results to the student health center from a test taken at an off-campus facility. *Social isolation* (30%) and *grocery shopping* (30%) were the influencing factors that made quarantining most difficult. Yet, participants said that *difficulty with accomplishing schoolwork* (21%) would make quarantining difficult if they had to do so. Representative quotes from these influencing factors related to the difficulte:

"I waited 80 minutes in the parking lot after my appointment time to get tested."

"The parking availability at the Longest Student Health Center is very limited and crowded." "Avoiding other people & knowing whether to avoid work until the results are delivered is inconvenient."

"The communication through the phone (with the SHC) is too slow."

"Not having easy access to report a positive test"

"It's a long time with very little contact with others & the Wi-Fi is terrible."

"Being less able to concentrate on class work online than in the classroom."

Several influencing factors were reported to potentially improve a quarantine experience. *Increased food access* (25%) and *improved living conditions* (20%) were reported as factors that would have made the participants' quarantine experiences better. *Increased food accessibility* (28%) and *academic support* (17%) were influencing factors reported to improve a potential quarantine experience, and, notably, *sufficient Wi-Fi* (10%) was also included. Some (17%) of the participants noted that *nothing* would make the experience better if they had to isolate or quarantine. Quotes from these influencing factors with the potential to improve the quarantine experience include:

"A service to grocery shop for me."

"Better delivery service."

"More than a bedroom to stay in & more understanding housemates."

"If I could have been at my apartment."

"Knowing people would bring me my meals."

"Support for food delivery from grocery stores."

"Assurance I would be able to catch up/ maintain being on top of classwork."

"A strong internet connection."

"Nothing it would be miserable."

Outcomes of the Health Behavior positively impacted the participants' responses regarding the benefits of COVID-19 testing, reporting, and quarantining. Regarding testing, *knowledge* (44%),

peace of mind (17%), and *reducing the spread of COVID-19* (28%) were reported as the positive outcomes of getting tested for COVID-19. *Reducing the spread* (56%) and *assurance* (34%) were reported to be the potential benefits of testing. *Data accuracy* (48%) and *contact tracing* (24%) were reported as the potential benefits of reporting test results from another off-campus facility to the MSU SHC. *Reducing the spread of COVID-19* (73%) was the predominant benefit of isolation or quarantine. Quotes from Outcomes of the Health Behavior positively impacting the participants' responses include:

"Knowing whether or not you have COVID."

"Peace of mind, ability to frequent more places with less concern."

"You know if you are positive and have the potential to spread COVID to other people."

"Better isolation strategies, higher confidence in the safety of your peers & social circles."

"I could keep others from being at risk if it proved fatal in their case."

"I would be assured that I don't have it."

"Accurate results for COVID numbers on campus."

"Accurate count of tests & cases."

"Longest could appropriately inform peers and personnel of potential exposure."

"Minimize the potential spread if I have the virus."

Decreased finances (26%) and *mental health issues* (10%) were described as outcomes of quarantine that would prove difficult for the participants. The following quotes depict the potential negative outcomes of quarantining:

"I work two jobs & cannot afford to miss out on an entire pay period."

"Not working & not making money."

"It would take a mental toll."

"I would be sad and lonely."

Discussion

The primary purpose of this study was to explore the potential impact of COVID-19 on university students' COVID-19 related decisions. This study was conducted at a time in which limited face-to-face courses were offered by the university. Therefore, students were still completing coursework, in some capacity, from their. This evolving situation provided an opportunity to capture student perceptions and health-related actions associated with COVID-19 behaviors. The results of this study align with the notion that health-related action depends on the perceived threats, perceived barriers, and perceived benefits, as explained by HBM (Rosenstock, 1974).

The study concludes that the university student participants' decisions around COVID-19 related health behaviors were determined in some part by influencing factors and outcomes of their health behaviors. These data can be used to target health communications to university students, including cues to actions toward positive COVID-19 related decisions. The most frequent difficulties for COVID-19 testing noted by the participants were waiting, inaccessibility, and inconvenience. Increasing the accessibility and availability of on-campus COVID-19 testing sites

could alleviate the barriers to testing and increase the students' likelihood of being tested. Students stated that inconvenience was the biggest hindrance to being tested for COVID-19 in the future. Some research has noted that integrating telemedicine is useful in preventing the spread of COVID-19 (Ohannessian et al., 2020). Data from this study underline the need to consider alternative communication modalities for increased accessibility. Additionally, remote testing locations on campus can improve accessibility and convenience for student healthcare.

According to the results of this study, students would be more likely to report their positive COVID-19 test results to the university's student health center by increasing awareness of their responsibility to do so and reducing the barriers at the university's student health center. As the perception of selfishness among peers was a factor in students failing to report their COVID-19 status, increasing awareness of selflessness associated with COVID-19 may be a potential health prevention strategy. There is growing literature on COVID-19 disclosure decisions, and a model similar to one proposed by Gardner and Jones (2021) could be developed and tailored based on undergraduate students' unique needs. The model as described suggests that a variety of factors including anticipated response, social demographics, and environmental context influence a person's decision to disclose their positive COVID-19 status (Gardner & Jones, 2021). However, the primary goal is to disclose one's status to prevent or slow the spread of the virus. Further inquiry is warranted to discern college students' COVID-19 disclosure decisions, although in the meantime, the disclosure process can begin with health coaching by healthcare providers on how to disclose one's COVID-19 status if there is a positive diagnosis. Student responses also indicate potential efficacy of focused media campaigns addressing the severity of the disease and highlighting personal responsibility to prevent the spread of the virus. Elimination or reduction of barriers to the accessibility of student health services could enhance students' ability to utilize the COVID-19 testing center(s) more conveniently.

The outcomes of the health behavior were more heavily related to the benefits of COVID-19 testing, reporting, and quarantining. The outcomes also aligned with the perceived benefits of making COVID-19 related decisions. Students attributed the decision to being tested for COVID-19 to knowledge of their COVID-19 status, peace of mind, and reducing the spread of the virus. These perceived benefits, which represent the relationship between knowledge and intention, can be utilized to increase self-efficacy in students to make responsible decisions towards reducing the spread of COVID-19 (Chin & Mansori, 2019). University communication campaigns can continue to stress the importance of data accuracy and contact tracing on-campus in their email communications with students. Health communication strategies must include the ongoing benefits of COVID-19 testing and reporting a positive COVID-19 test for students to remain diligent about testing as the pandemic continues (Chin & Mansori, 2019).

Since reducing the spread of COVID-19 was viewed as the predominant benefit to quarantining, the university can use this data to expand on-campus food accessibility and ongoing academic support for students in quarantine. Participants noted that email is the preferred way to receive COVID-19 communication, and a weekly COVID-19 summary email could be disseminated to students to increase their awareness of their personal obligations to follow the COVID-19 related public health guidelines (Chin & Mansori, 2019). Health communication strategies should stress the importance of adherence to these public health guidelines, using their desire for campus to remain open as their greatest advantage. Further research can be conducted on COVID-19 related

disclosure and concealment practices by university students to better understand the habits that students are forming as the pandemic continues.

Recommendations

COVID-19 testing, reporting, and quarantining can best be addressed through a variety of health communication techniques designed specifically for students attending a large, southeastern university. Messages can be disseminated regarding the importance of disclosing one's COVID-19 status to the SHC and to others in the context of it being an act of selflessness aimed at reducing the spread of the virus. Messages that emphasize the benefits of disclosing ones' status can gain the most traction and increase students' efficacy to do so. This can, in turn, increase the accuracy of the positivity data on campus and lead to more efficient contact tracing protocols. These messages can best be disseminated to students via email along with more information about how to best protect oneself and others from contracting the virus.

Limitations

No study is without limitations, and this study is no exeption. While 72 participants is a large sample size for a qualitative study, a limitation of this study includes sample size and student representation. The 72 participants may not be representative of all students on the large southeastern university campus. Future research surveys should be disseminated through campus-wide student email, in addition to the online portal to gain more exposure and increase participation. The other limitation was the number of responses per question. None of the 12 research questions were answered by all 72 participants. There was an inability to further probe or ask for additional information in response to the questions answered. Hence, the research team was limited to the students' often brief, typed responses to the questions. Also, the survey did not ask the participants if they tested positive for COVID-19, only asked if the participants had been tested. This information could have been useful in reference to the results of the study.

In conclusion, the results of this study show promise for informing immediate responses to undergraduate students' engagement (or lack thereof) in measures to contain the spread of COVID-19 on a large university's campus in the southeast. Through focused health communication campaigns, tailored messages can be developed to target the testing, reporting, and quarantining behaviors of undergraduate college students. While the recommendations may be most relevant to the university where the research was conducted, there are implications for similar colleges and universities who may be grappling with appropriate messaging to convey to students to slow the spread of COVID-19, increase testing and policy compliance, and change health behaviors associated with COVID-19 among college students.

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