Journal of
Education and Practice
(JEP)

COLLEGE CONVERSION INTO QUARANTINE CENTER: STUDENTS' PERCEPTION ON SAFETY AT KENYA MEDICAL TRAINING COLLEGE, MOMBASA

Marsellah Ogendo[1], Garama Mramba[1], Rhoda Nchogu[1], Rachael Mwende[1], Winnie Barawa[1], Caroline Mramba[1], Rita Miriti[1] Jeniffer Mwema[1], Dominic Mutonga[1], Dorcas Ngechu[1], Japheth Ogada[1], Florence Hawa[1], Florid Ogall[1], Jane Kima[1], Jeniffer Mbwika[1], Brenda Kalama[1], Jacob Seremwo[1], Jane Ocholla[1] Jasper Mbunga[1], Lucas Ruwa[1]

CARI Journals

Journal of Education and Practice
ISSN 2520-467X (online)
Vol.4, Issue No.3, pp 13 - 25, 2020
www.carijournals.org

COLLEGE CONVERSION INTO QUARANTINE CENTER: STUDENTS' PERCEPTION ON SAFETY AT KENYA MEDICAL TRAINING COLLEGE, MOMBASA

Authors: Marsellah Ogendo[1], Garama Mramba[1], Rhoda Nchogu[1], Rachael Mwende[1], Winnie Barawa[1], Caroline Mramba[1] , Rita Miriti[1] Jeniffer Mwema[1], Dominic Mutonga[1], Dorcas Ngechu[1], Japheth Ogada[1], Florence Hawa[1], Florid Ogall[1], Jane Kima[1], Jeniffer Mbwika[1], Brenda Kalama[1], Jacob Seremwo[1], Jane Ocholla[1] Jasper Mbungu[1], Lucas Ruwa[1]

Affiliation:

1- Kenya Medical Training College (KMTC)

Corresponding Authors

Marsellah Ogendo KMTC mogendo@kmtc.ac.ke
Garama Mramba KMTC cgarama@kmtc.ac.ke
Rhoda Nchogu KMTC rnchogu@kmtc.ac.ke

Abstract

Purpose: The aim of the study was to determine the perception of students of Kenya Medical Training College Mombasa on its safety after conversion into a quarantine center.

Methodology: The study was conducted at KMTC Mombasa, using a descriptive cross-sectional design, where students were selected using multistage sampling. Sample size determination was done using Fischer's statistical formula at a confidence level of 95% (p=95%). Data was collected using a structured online survey questionnaire and a focused group discussion. Analysis of data was done using SPSS and results presented in Excel tables and narrations.

Findings: 65.2% (165) of the students felt the college was safe for resumption of studies while 34.8% (88) felt the college was unsafe. 56% (93) of those who felt the college was safe stated that safety is a personal responsibility and that they would observe the recommended measures. 22% (36) had confidence that the institution would implement all the measures possible to ensure safety of the facility upon reopening. Two reasons advanced by the students as to why they felt the college was unsafe were; proximity of the college to an isolation center and interaction with other students cited by 31% (27) and 30% (26) of the students respectively. The study demonstrated a significant relationship between students' department and how comfortable they were to use the hostels after getting back to college (p=0.036). Students felt safest to use the library while the toilets were the least safe.

Unique contribution to theory, practice and Policy: The perception of students towards safety of their learning institution after its use as quarantine center during a pandemic has not been reported in literature. The findings of this study are important for leaders and policy makers across sectors in guiding decision making in instances where public facilities may need to be converted to serve other purposes. Stakeholders may have reservations as to whether the usual users are going to feel safe in such facilities after its temporary use.

Keywords: *Conducive, COVID-19, Kenya Medical Training College, Mombasa, Perception, Quarantine centre, Safety, Student*

1.0 INTRODUCTION

COVID-19 was first reported in Wuhan City, China, in December 2019 as a disease caused by the novel coronavirus SARS-CoV-2 (WHO 2020). According to Dryhurst *et al.* (2020), COVID-19 is a highly infectious disease which caused an epidemic that turned into a global pandemic between January and April 2020. COVID-19 has several signs and symptoms, which are listed by Ding *et al.* (2020) as fever, cough, wheezing, dyspnea, and pneumonia. Infection can lead to severe acute respiratory syndrome, kidney failure and death. However, by the time of this study there was no effective treatment or vaccine for COVID-19 hence controlling its spread was necessary, Nussbaumer-Streit *et al*. (2020).

A study conducted by Geldsetzer (2020) on knowledge and perception on COVID-19 in the general public found out that a population which had been exposed to the virus was deemed unsafe for interaction. He also reported that 27.6% of participants refrained from eating at Chinese restaurants citing fear of virus existence. In addition, 29.7% of US respondents and 40.7% of UK respondents stated that if they were an Uber driver, they would at least sometimes refuse rides to passengers with East Asian-sounding names to reduce their risk of infection. The general public displayed lack of confidence in both people and facilities which have been exposed to COVID-19. The above study presents the same dilemma of KMTC Mombasa students who will be exposed to the same facilities and environment that was used by COVID-19 contact cases.

Medical students are mainstream population in most university hospitals making them a vulnerable group to the COVID-19 pandemic. In a survey by Al-Rabiaah *et al.* (2020), it was noted that there was increased risk perception among Iranian medical students towards COVID-19. Great significance was reported between the departments (Emergency room and other wards) and risk perception. Interns displayed low risk perception while stagers (students) displayed high risk. It was inferred that interns' greater experience and higher self-confidence in caring for patients led them to perceive lower risk and experience less stress and anxiety as compared to the stagers (students). Those who were training in the emergency department reported low risk perception as opposed to those who were being trained in other wards such as Internal medicine and surgery. However, it was noted that most medical students displayed moderate level of knowledge generally on COVID-19 and its preventive measures a factor that had significance on their perception and also their preventive behaviors.

Adongo, *et al (*2017) observed that Personal Protective Equipment worn by health care workers to provide care to Ebola patients in Ghana elicited fear and anxiety among community members. It created a notion that the disease is highly infectious and hence shaped their attitude and influenced their behavior towards measures put in place by the disaster preparedness response team to control the disease. There was a lot of resistance to disease management protocols as myths and misconceptions built up due to the images portrayed by these PPEs in the televisions. The discriminatory attitude was observed among health care workers too based on reported evidence of death of doctors from Ebola. It was concluded that health education and awareness on Ebola was key in undoing negative attitude towards Ebola treatment and management measures, an aspect that is relatable to the COVID-19 pandemic.

Khasawneh, *et al* (2020) assessed Jordanian medical students on their attitude towards corona virus. It revealed that most participants had good level of knowledge and good attitude towards COVID-19. Their participation in provision of health care services during their clinical rotation tend to put them at risk of contracting as well as transmitting the corona virus. On assessing their major sources of information on COVID-19, it showed that online platforms were the major searched areas, not only for medical information but other information too.

In another study, by Ilesanmi and Alele, (2016) perception of students was different based on year of study such that senior secondary class students were found to have significantly good knowledge of Ebola Virus Disease compared to those in the junior secondary class. In addition, an association was also established between education and health such that the higher the level of education, the better the health seeking behavior and healthier outcomes. In Kenya, KMTC has been on the frontline in strengthening the war against the COVID-19 pandemic by establishing quarantine centers within its campuses across the country (KMTC 2020). Furthermore, the attitude of KMTC students is also not known, even though educational environment does greatly affect the teaching and learning according to Gilavand, (2016). Therefore, this study focuses on the perceptions of KMTC Mombasa campus students with regard to the safety of college infrastructure before and after its use as a quarantine center.

Problem statement

The Kenyan Ministry of Education declared 2020 a dead year academically and that learning institutions would reopen in January 2021. Several selected schools, colleges and universities were converted to provide quarantine services and had continued to do so since March 2020 up to the time of data collection. There was no clear framework on how to maintain safety of the students upon resumption of college activities. This necessitated the need to find out the students' perception on safety towards the college facilities.

2.0 METHODOLOGY

The study was a descriptive cross-sectional design done at KMTC-Mombasa. Multi stage sampling was used to select the participants (students), N=850, n=264. Sample size determination was done using Fischer's statistical formula (p=95%). Total participants who responded were 253 (*n=253*). A structured questionnaire was administered through online surveys and focused group discussions conducted via KENET platform (an online Educational platform that allows web conferencing and meetings). Simple descriptive to bivariate analyses were carried out using SPSS 26. Presentation of the results was done by use of graphs, pie charts and tables

3.0 RESULTS

3.1 Demographics of respondents

Table 1: Distribution of Respondents by Age, Gender, Department and Year of study

Demographics	Category	Frequency(n=253)	Percentage (%)
Age (Years)	18-20	61	24.1
	21-24	114	45.1
	25-29	55	21.7
	30 and above	23	9.1
Gender	Male	101	39.9
	Female	152	60.1
Department	Clinical Medicine	57	22.5
	Nursing	107	42.3
	Pharmacy	41	16.2
	Health Records	21	8.3
	Occupational Therapy	11	4.3
	Medical Imaging Science	16	6.3
Year of study	1st year	80	31.6
	2nd year	79	31.2
	3rd year	78	30.8
	4th year	16	6.3

Table 1 shows 45% (114) of students are within the age group of 21-24 years while 9.1% (23) are aged above 30 years. This data is consistent with findings of Garland et al (2016) which indicated that this age bracket (16-25 years) is the average age for joining tertiary institutions. Majority of KMTC students are admitted immediately after secondary school education and tend to belong to 16-25 years.

Gender was defined as biological characteristic of being either male or female. 60.1% (152) of the respondents were female. This is a true representation of total gender distribution in KMTC Mombasa where female are 60.1% (504).

Department was defined as the course in which the student is enrolled. The findings reveal that majority of the students are in the Nursing department 42% (107). This is because nursing department has two intakes per year unlike other departments that have one intake and it extends to three and a half years while the other courses range between two and three years' academic years.

Year of study was defined as the academic year of the student as stipulated by KMTC curriculum. 6.3% (16) of the respondents were from fourth year of study and from nursing department which offers three and half years.

3.2 Perception of Students towards Safety of College After Its Use as a Quarantine Centre.

Perception referred to how students viewed, understood and regarded the institution after being used as a quarantine center during COVID-19 pandemic. The perception of students was important as it would help the college in planning and implementation of safety measures for resumption of college activities.

Table 1: Student awareness on college being used as a COVID-19 quarantine Center

Awareness	Frequency	Percentage
Yes	227	89.7
No	26	10.3
Total	253	100.0

Awareness referred to respondent's recognition of KMTC Mombasa campus being a quarantine center. The respondents were asked to state whether they were aware or not by indicating Yes (Aware) or No (Not Aware). 89.7% (227) were aware that the college had been temporarily converted to a quarantine center while 10.3% were unaware despite the information on conversion of KMTC Mombasa to quarantine center being in the public domain i.e. social media and main stream channels. According to Billups (2011) most students indicated moderate to extensive awareness of student's life programs in campus. However, their level of awareness greatly depended on how deeply the students were actively involved in those college programs.

Quarantine is a new concept and may not be well understood by the populace. Furthermore, not all students have constant access to smart phones and main stream media. This study recommends that targeted information on important issues should be relayed officially to students as key stakeholders. There is need for further research to determine why some students may fail to know vital public information regarding their institution.

Table 2: Safety of students while in college from COVID-19

Safety	Frequency	Percentage
Yes	165	65.2
No	88	34.8
Total	253	100

Safety in the study meant being protected from the risk of getting COVID 19 upon resumption to college. This aspect was important as its affects how students perceive the college after being used as a COVID 19 quarantine center. The participants were asked if they will feel safe from COVID 19 once they come back to school by indicating Yes for Safe and No for Not Safe. The results indicated that 65.2% (165) felt safe to resume while 34.8% (88) felt unsafe to resume. Several reasons were given as summarized in Figure 1 and Figure 2.

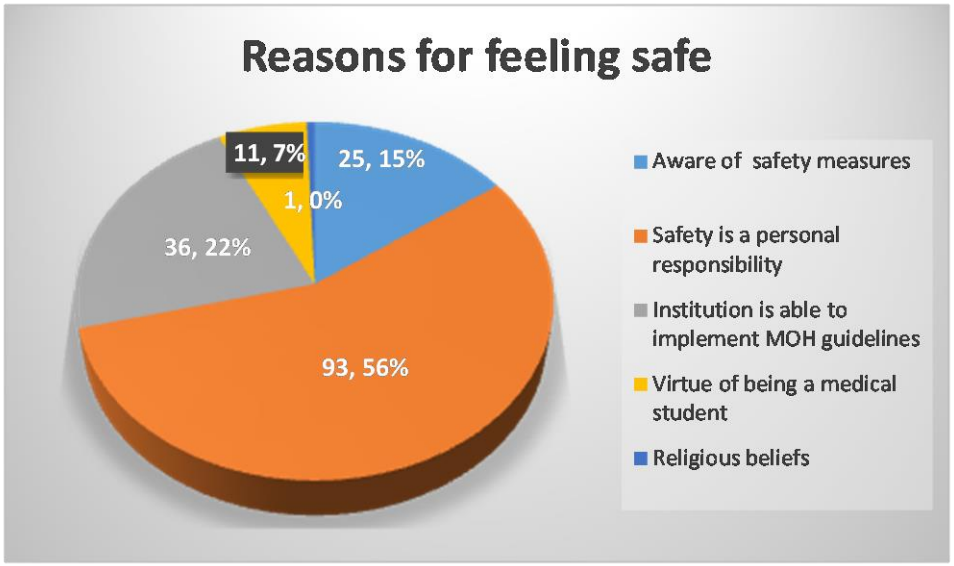

Figure 1: A Pie chart on reasons why they will be safe from Covid-19 when they come back to KMTC- Mombasa

In Figure 1, 56% (93) stated that safety is a personally responsibility and they would take it upon themselves to protect themselves from getting infected with COVID-19.

- "I will not engage in groups and I will be able to maintain social distancing and keep following all the measures provided by the health organisation despite all the temptations."
- "We are adults and we can try adhere to the protective measures to the later"
- "As long as I'm wearing PPEs and observing social distancing and washing hands ,then I'll be good"

22% (36) had confidence in the institution that it will implement all the measures possible to ensure the facility is safe upon reopening. This implies that the students have confidence that the preventive measures recommended by GoK will be implemented. 15% (25) emphasized on being aware of preventive and control measures to protect themselves from COVID 19, 7% (11) felt assured by virtue of being medical students. They felt safe because they would be learning in a medical institution where they are assured of safety.

- "Because I know that KMTC Mombasa is place where doctors and nurses are trained so it is safer there because our teachers are also trained medics so they can teach us and see how we can defeat COVID-19".

1% believed that God would protect them from the infection and hence felt safe to resume.

- "God is above all. He will protect us."

However, unlike the findings of Gaetan *et al.* (2020) where majority of subjects were fearful of corona virus pandemic, our study highlights that 65.1% felt safe to use the facility after being used as a quarantine center.

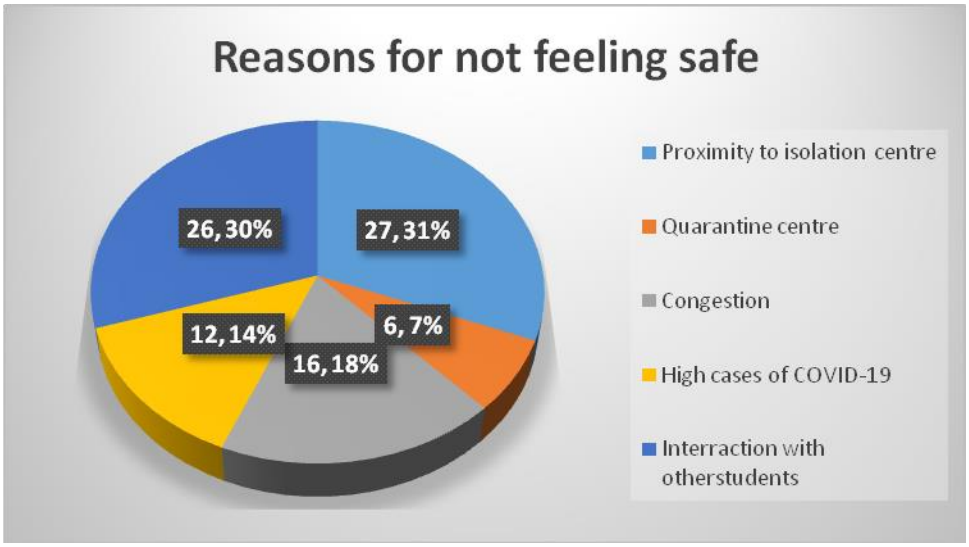

Figure 2: A Pie chart on reasons why they will not be safe from Covid-19 when they come back to KMTC- Mombasa.

In Figure 2, proximity to an isolation centre and interaction with other students (61%) were the major reasons why the students felt unsafe to return to school. Very few students felt unsafe because the facility had been converted into a quarantine centre (7%). Other reasons given included the risk of increased congestion upon resumption and the aspect of students coming from different regions. The study supports the findings of Gaetan *et al*. (2020), that the increased fear of corona virus among individuals is mainly because of its major effect on personal health, unknowingly spreading it to other people and lack of discipline on the public to follow control guidelines. They stated that the media played a major role in influencing the level of safety uncertainty.

Table 3: Safety in hostels (Cross tabulation Accommodated in hostels and safety to reuse of hostels)

Accommodated in Campus		Not safe	Safe	Totals
	Yes	124	40	164
	No	72	17	89
Total		196	57	253

In Table 3, students' response when asked to state their level of comfort to use the hostels after resuming college is shown. Majority of students who were previously accommodated in the campus hostels reported not being comfortable to use the hostels citing that it was the same hostels where the quarantine clients were accommodated. Equally majority of those who were previously not accommodated in hostels shared a similar feeling. Sawyerr and Yusof (2013) reported majority of students (66.6%) show dissatisfaction with hostel facilities in campus due to

them being below minimum standards. This may imply that the students perception of the hostels not being safe can be attributed to other reasons other than being used for quarantine purposes.

The cross tabulation however counters the general feeling of students (65.1%) that they are safe to resume school activities as stated in Table 2. This however presents a normal response as students in India at University of Agricultural Sciences protested against use of their hostels as COVID-19 quarantine center (The New Indian Express, July 2020). Nazzir and Predretti (2015) emphasized that to promote positive perception towards institutional facilities, there is need to consider form of design and maintenance of existing facilities e.g. improving on physical attributes of the institutions.

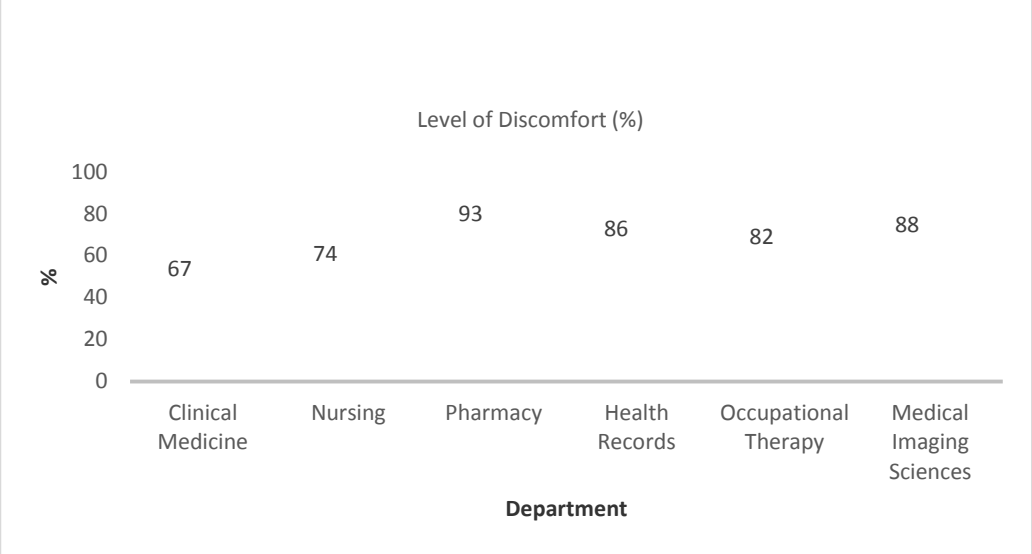

Figure 3: Level of discomfort in relation to department

There is significant relationship between department and level of comfort to use the hostels after resuming college activities (p=0.036). This demonstrates that students from departments that interact frequently with patients (Clinical Medicine and Nursing) in clinical areas found the hostels to be safer for reuse after reopening. This may be because these students find accommodation within the hostels to be convenient in the achievement of their educational goals. The hostels are more practically accessible to the clinical areas. In addition, KMTC curriculum guides for more hours of clinical rotations for the former as compared to the other departments (Pharmacy, Medical Imaging, Health records and Occupational Therapy).

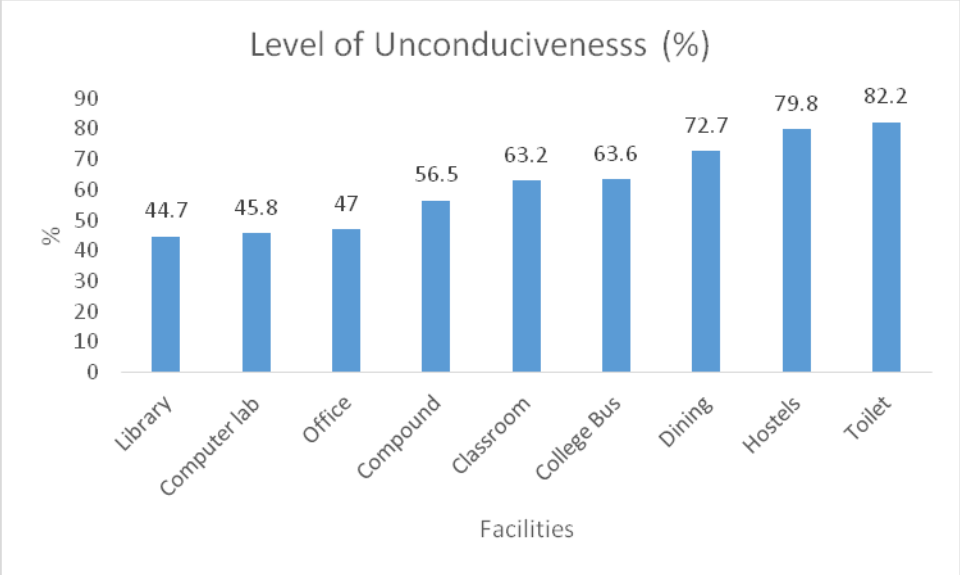

Figure 4: Level of unconduciveness towards college facilities

In the study unconduciveness referred to unfavorable state for use of college facilities after resumption of college facilities. Students presented least level of unconduciveness for use of library (44.7%) while highest level of unconduciveness for use was displayed towards toilets (82.2%). This indicates that facilities used frequently by students e.g. toilets, hostels, dining hall were regarded as highly infectious zones with regards to COVID-19. There is minimal interaction among students in the library, computer laboratory and offices due to their setup which allows for physical distance. These places were perceived as more conducive. There is increased risk of infection with COVID-19 in the toilet due to frequent flashing that releases the corona virus as aerosols exposing the students to fecal oral transmission, (Knvul, 2020). Knvul also stated that the virus overstays on toilet surfaces (door knobs, toilet seats) increasing the chances of contracting the virus. In addition poor ventilation in the toilets has been cited by Al Tompkins (June 2020) to escalate the spread of COVID-19.

4.0 DISCUSSION

The COVID 19 outbreak has been in Kenya since March 2020, the rising number of cases have led to continued use of college facilities as quarantine centers. According to the Kenya Ministry of Education (2020) it is speculated that schools and other learning institutions may reopen in January 2021. The perception of students towards safety of college facilities being used as quarantine centers has a great influence on its use after reopening. According to Dryhurst *et al.* (2020) perception on risk towards contracting COVID-19 is greatly influenced by the source of information. Strategic messaging by leadership of learning institutions through authentic sources, i.e. television, print, institutional website has strong potential to build trust and positive perception towards safety of facilities. She further asserted that if the response is led by proper leadership the risk perception reduces, this concurs with our finding where the respondents felt safe to come back to school because they have confidence that the KMTC management will implement the WHO recommended guidelines to the letter thus ensuring their safety.

According to Amoatemaa, Kyeremeh and Arthur (2017) safe environment is a prerequisite for learning which requires participation from multiple parties within an institution. They also stated that raising awareness on existing threats and preventive measures increases the feeling of safety within schools. Management of KMTC has a responsibility to create awareness among its students on COVID-19n mitigation measures put in place. Amoatemaa *et al.* (2017) in their study focusing on crime levels in schools found that complex factors affect the general perception of safety on campus such as nature of campus, student personal characteristics (age, residence and gender), population and location of school facilities. There is need to investigate these factors for each unique context so that interventions to improve perception of safety are targeted

In an analytic modelling study, by Patiel, Zheng and Walensky, (2020) regular screening of population using rapid, affordable and sensitive (>70%) tests coupled with concrete behavior modifications was estimated to maintain a controllable number of COVID 19 infections and therefore allowing for safe return of students to learning institutions. These findings are relevant in this study as the approach vouches for early detection of COVID-19 positive cases among students hence enabling proper planning for decongestion and minimizing interaction of positive cases. It also helps to restructure the settings of campus facilities enhancing physical distancing and reducing the risk of spread of COVID 19 infection. Consequently, this will rebuild trust and confidence to use the college facilities after conversion as COVID-19 quarantine facilities.

In conclusion, the perception of students towards safety of the college after use as quarantine centre was influenced by different reasons. It is therefore prudent to conduct health education around quarantine practices, involve the students in decision making and have proper communication channels to ensure they are aware of implemented safety measures

5.0 RECOMMENDATIONS

The college should form health education committee and infection prevention committees to spearhead health education and infection activities in the institution. The college should involve students in decision making process e.g. through suggestion boxes, students' leadership body, forums and religious groups. The college should establish proper communication channels for constant relay of information to students on any issues affecting their safety or perception on safety of the institution.

REFERENCES

Adisa, S., & Simpeh, F. (2019). Student perceptions of the safety and security risk of on-campus student housing facilities. *2019 IEEE Asia-Pacific Conference on Computer Science and Data Engineering (CSDE)*. https://doi.org/10.1109/csde48274.2019.9162378

Adongo, P. B., Tabong, P. T., Asampong, E., Ansong, J., Robalo, M., & Adanu, R. M. (2017). Beyond knowledge and awareness: Addressing misconceptions in Ghana's preparation towards an outbreak of Ebola virus disease. *PLOS ONE*, *11*(2), e0149627. https://doi.org/10.1371/journal.pone.0149627

Al Tompkins,S (2020, June 17). COVID-19 is making it difficult to find a safe public toilet. *Poynter*. https://www.poynter.org/reporting-editing/2020/covid-19-is-making-it-difficult-to-find-a-safe-public-toilet/

Al-Rabiaah, A., Temsah, M. H., Al-Eyadhy, A. A., Hasan, G. M., Al-Zamil, F., Al-Subaie, S., Alsohime, F., Jamal, A., Alhaboob, A., Al-Saadi, B., & Somily, A. M. (2020). Middle East Respiratory Syndrome-Corona Virus (MERS-CoV) associated stress among medical students at a university teaching hospital in Saudi Arabia. *Journal of infection and public health*, *13*(5), 687–691. https://doi.org/10.1016/j.jiph.2020.01.005

Alzoubi, H., Alnawaiseh, N., Al-Mnayyis, A., Abu- Lubad, M., Aqel, A., & Al-Shagahin, H. (2020). COVID-19 - Knowledge, attitude and practice among medical and non-medical University students in Jordan. *Journal of Pure and Applied Microbiology*, *14*(1), 17-24. https://doi.org/10.22207/jpam.14.1.04

Amoatemaa, A., Kyeremeh, D., & Arthur, Y. (2017). Students perception of campus safety: A case of Kumasi campus of University of education, Winneba, Ghana. *Asian Research Journal of Arts & Social Sciences*, *3*(1), 1-9. https://doi.org/10.9734/arjass/2017/32265

Ashraf I. Khasawneh1, Anas Abu Humeidan2, Jomana W. Alsulaiman3, Sarah Bloukh2, Mohannad Ramadan4, Tariq N. Al-Shatanawi5, Hasan H. Awad4, Waleed Y. Hijazi4, Kinda R. Al-Kammash4, Nail Obeidat4, Tareq Saleh1 and Khalid A. Kheirallah4*. (2020, May 29). *Medical Students and COVID-19: Knowledge, Attitudes, and Precautionary Measures. A Descriptive Study From Jordan*. Retrieved September 9, 2020, from https://doi.org/10.3389/fpubh.2020.00253

Billups, F.D (2011). College Student Perceptions of Student Life Programs. NERA Conference Proceedings. Retrieved from https://opencommons.uconn.edu/nera_2011/13

Dryhurst S., Claudia R. Schneider, John Kerr, Alexandra L. J. Freeman, Gabriel Recchia, Anne Marthe van der Bles, David Spiegelhalter & Sander van der Linden (2020) Risk perceptions of COVID-19 around the world, Journal of Risk Research, DOI: 10.1080/13669877.2020.1758193

D'Souza, P. M. (2020, July 2). *Students, colleges in fix as hostels turn Covid centres*. The New Indian Express. https://www.newindianexpress.com/cities/bengaluru/2020/jul/02/students-colleges-in-fix-as-hostels-turn-covid-centres-2164229.html

Education, M. of. (2020). *Kenya_basic_Education_COVID-19_Emergency_Response_Plan-compressed.pdf*. retrieved from https://www.education.go.ke/index.php/downloads

Elnadi, H., Odetokun, I. A., Bolarinwa, O., Ahmed, Z., Okechukwu, O., & Al-Mustapha, A. I. (2020). Knowledge, attitude, and perceptions towards the 2019 coronavirus pandemic: A Bi-national survey in Africa. https://doi.org/10.1101/2020.05.27.20113951

Geldsetzer, P. (2020). Knowledge and perceptions of COVID-19 among the general public in the United States and the United Kingdom: A cross-sectional online survey. *Annals of Internal Medicine*, *173*(2), 157-160. https://doi.org/10.7326/m20-0912

Gilavand A. (2016). Investigating the Impact of Environmental Factors on Learning and Academic Achievement of Elementary Students: International Journal of Medical Research & Health Sciences. Retrieved from5. 360-369.

Hager, E., Odetokun, I. A., Bolarinwa, O., Zainab, A., Okechukwu, O., & Al-Mustapha, A. I. (2020). Knowledge, attitude, and perceptions towards the 2019 coronavirus pandemic: A Bi-national survey in Africa. *PLOS ONE*, *15*(7), e0236918. https://doi.org/10.1371/journal.pone.0236918

Ilesanmi O., and Alele F. O. (2016). Knowledge, Attitude and Perception of Ebola Virus Disease among Secondary School Students in Ondo State, Nigeria, October, 2014. *PLoS Curr*. 2016; 8:ecurrents.outbreaks.c04b88cd5cd03cccb99e125657eecd76. Published 2016 Mar 4. doi:10.1371/currents.outbreaks.c04b88cd5cd03cccb99e125657eecd76

Irma Melyani Puspitasari, Lutfiah Yusuf, Rano K Sinuraya, Rizky Abdulah, & Hiroshi Koyama. (2020, July 30). *Knowledge, attitude, and practice during the COVID-19 pandemic: A review*. PubMed Central (PMC). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7407756/#cit0015

Kebede, Y., Yitayih, Y., Birhanu, Z., Mekonen, S., & Ambelu, A. (2020). Knowledge, perceptions and preventive practices towards COVID-19 among Jimma University Medical Center visitors, Southwest Ethiopia. https://doi.org/10.21203/rs.3.rs-25865/v1

Khasawneh, A. I., Humeidan, A. A., Alsulaiman, J. W., Bloukh, S., Ramadan, M., Al-Shatanawi, T. N., Awad, H. H., Hijazi, W. Y., Al-Kammash, K. R., Obeidat, N., Saleh, T., & Kheirallah, K. A. (2020). Medical students and COVID-19: Knowledge, attitudes, and precautionary measures. A descriptive study from Jordan. *Frontiers in Public Health*, *8*. https://doi.org/10.3389/fpubh.2020.00253

KMTC. (2020). The Ministry of Health Receives Donation to boost the war on COVID 19. Retrieved on July 16 2020 from https://kmtc.ac.ke/site/5104

Knvul Sheikh. (2020, June 16). *Flushing the toilet may fling coronavirus aerosols all over*. The New York Times - Breaking News, World News & Multimedia. https://www.nytimes.com/2020/06/16/health/coronavirus-toilets-flushing.html

McFadden, S. M., Malik, A. A., Aguolu, O. G., Willebrand, K. S., & Omer, S. B. (2020). Perceptions of the adult US population regarding the novel coronavirus outbreak. *PLOS ONE*, *15*(4), e0231808. https://doi.org/10.1371/journal.pone.0231808

Nazir, J., & Pedretti, E. (2015). Educators' perceptions of bringing students to environmental consciousness through engaging outdoor experiences. *Environmental Education Research*, *22*(2), 288-304. https://doi.org/10.1080/13504622.2014.996208

Nussbaumer-Streit B, Mayr V, AIulia D, Chapman A, Persad E, Klerings I, Wagner G, Siebert U, Christof C, Zachariah C, Gartlehner G. Quarantine alone or in combination with other public health measures to control COVID-19: a rapid review. Cochrane Database of Systematic Reviews 2020, Issue 4. Art. No.: CD013574. DOI: 10.1002/14651858.CD013574

Paltiel, A. D., Zheng, A., & Walensky, R. P. (2020). Assessment of SARS-Cov-2 screening strategies to permit the safe reopening of college campuses in the United States. *JAMA Network Open*, *3*(7), e2016818. https://doi.org/10.1001/jamanetworkopen.2020.16818

Rubin, J. E., & Crowe, S. E. (2020). Annals of internal medicine®. *Annals of Internal Medicine*, *172*(1), ITC1–ITC14. https://doi.org/10.7326/AWED202001070

Sari, D. K., Amelia, R., Dharmajaya, R., Sari, L. M., & Fitri, N. K. (2020, June 20). *Positive Correlation Between General Public Knowledge and Attitudes Regarding COVID-19 Outbreak 1 Month After First Cases Reported in Indonesia*. PubMed. https://pubmed.ncbi.nlm.nih.gov/32583360/

Taghrir, M. H., Borazjani, R., & Shiraly, R. (2020). COVID-19 and Iranian medical students; A survey on their related-knowledge, preventive behaviors and risk perception. *Archives of Iranian Medicine*, *23*(4), 249-254. https://doi.org/10.34172/aim.2020.06

Toyin Sawyerr, P., & Yusof, N. (2013). Student satisfaction with hostel facilities in Nigerian polytechnics. *Journal of Facilities Management*, *11*(4), 306-322. https://doi.org/10.1108/jfm-08-2012-0041

WHO. (2020). *Coronavirus disease (COVID-19) advice for the public: Mythbusters*. World Health Organisation. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters