



Students' Satisfaction with Learning Resources and Facilities During the COVID-19 Pandemic: A Study from a Saudi Health Science University

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ABSTRACT

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Aim: Student satisfaction with learning resources and facilities plays a critical role in their academic success and overall educational experience. This study aims to evaluate the satisfaction of health sciences students in Saudi Arabia with their learning resources during the COVID-19 pandemic, focusing on their initial encounter with English as the medium of instruction. Understanding this is valuable because it sheds light on how students adapt to new learning environments and resources, especially under challenging circumstances like a global pandemic. **Methodology:** To conduct the study, a questionnaire was designed and electronically distributed to students across three campuses in Saudi Arabia, targeting both male and female participants. Statistical analysis, using the Kruskal-Wallis test in R, revealed that overall student satisfaction with learning resources was slightly above average. **Results:** Notably, significant differences were found in satisfaction levels across the three campuses and between male and female

students. Additionally, students from the College of Applied Medical Sciences reported the highest satisfaction levels. **Conclusion:** These findings highlight the influence of gender and college affiliation on students' experiences with learning resources, emphasizing the need for targeted improvements in educational support across different demographics. This study provides valuable insights into the factors influencing student satisfaction, helping institutions tailor their resources to better meet diverse student needs, especially in a post-pandemic learning landscape.

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Introduction

The significance of studying student satisfaction with learning resources and facilities cannot be overstated, as it is closely tied to the overall quality of education and student experience (Ye & Phongsatha, 2024). In an educational institution, learning resources, facilities and related services support the core functions and objectives of education (Van Deuren & Lhaden, 2017a). These resources and facilities support and enable teaching, learning, and researching on campus. A positive academic environment, supported by adequate resources, fosters student engagement, motivation, and academic success (Weerasinghe & Fernando, 2018). Conversely, dissatisfaction with these resources can lead to negative outcomes such as disengagement, reduced academic performance, and even dropout (Mulyono et al., 2020; Wong & Chapman, 2023). In fact, physical environment not

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only facilitates academic learning but also provides spaces for social interaction and collaboration, which are critical for the holistic development of students, particularly in health sciences where teamwork and communication are key skills.

Learning resources and infrastructural facilities like classrooms, library, internet access, computer laboratories, campus climate, cafeterias and hostels, therefore, contribute to achieving student satisfaction holistically. These factors keep students engaged and committed to their studies and ensure higher success and retention rates. The higher is the success and retention, the greater is the level of student satisfaction. The availability of well-designed, accessible facilities ensures that students have the resources they need to thrive both academically and socially, which is even more critical during times of crisis like the COVID-19 pandemic. Investing in high-quality learning resources and facilities is not just an operational necessity but a strategic priority that directly influences student satisfaction, retention, and the long-term reputation of health sciences programs.

In Saudi Arabia, there is a scarcity of studies on this topic, particularly in the context of a global crisis like COVID-19. This study addresses this gap, offering valuable insights into how students perceive the learning facilities provided during this period. Furthermore, this study becomes even more critical in the context of the COVID-19 pandemic, when universities had to rapidly adapt to remote learning and other unprecedented challenges, a problem much discussed in studies (Gantasala et al., 2022; Malkawi et al., 2020; Zeng & Wang, 2021). While this study aims to evaluate the satisfaction level of health sciences students in Saudi Arabia with their learning resources during the COVID-19 pandemic, the focus remains on the quality and management of educational services and administrative personnel which play a key role in achieving a higher student satisfaction level. To achieve this objective, the study framed the following two research questions: (1) Is there any significant difference in students' satisfaction with learning resources and facilities in terms of gender, college affiliation, and campus? (2) If there is a significant difference, is there any predictor of students' satisfaction? Could gender, college affiliation, and campus predict it?

The unique contribution of this study lies in the fact that it sheds light on how students adapt to new learning environments and resources, especially under challenging circumstances like a global pandemic. Contextually, and to make this study address the localized issues, this study also examined the influence of gender and college affiliation on students' satisfaction level, besides that of learning resources and other support services. It is expected that this study would provide valuable insights into the factors influencing student satisfaction, helping institutions tailor their resources to better meet diverse student needs, especially in a post-pandemic learning landscape.

Literature Review

Satisfaction is a consequence of the fulfilment of needs and expectations of a specific service and the perception of the quality of that service. Student satisfaction has been related to the student's perception of the quality of education (Van Deuren & Lhaden, 2017a). Student satisfaction could also be related to various services that the school provides; therefore, it can be defined based on different approaches and focus, but most importantly it should be examined from an educational perspective (Al-Sheeb et al., 2018; Van Deuren & Lhaden, 2017a). In recent years, there has been a focus on student-centered learning instead of a traditional teacher-oriented approach, and on understanding student

satisfaction (Al-Sheeb et al., 2018; van Deuren & Lhaden, 2017b). Research has consistently shown that the quality of campus infrastructure, including social spaces, auditoriums, and libraries, has a significant impact on student satisfaction (Hanssen & Solvoll, 2015). Understanding students' perceptions allows universities to address potential gaps and continuously improve their services, ensuring that students have access to the necessary tools and support for their success (Cahyono et al., 2020; Kanwar & Sanjeeva, 2022). The lack of these resources has serious implications not only for the students' academic and social experiences but also for the university's long-term reputation.

Investing in factors that enhance student satisfaction with learning resources and facilities is especially important in health sciences colleges, particularly during the COVID-19 pandemic (Kazzaz et al., 2020; Madkhali et al., 2021; Rasheed & Rashid, 2024). Additionally, student satisfaction is a key factor in gaining support from both the government and legislative bodies. By understanding and addressing these factors, law making institutions and organizations can improve both student success and retention rates, ensuring a higher level of student satisfaction and a stronger reputation in the educational landscape (Ye & Phongsatha, 2024). A good governance ensures facilities are designed, built and made available for facilitating smooth operations of an organization (Alkhateeb & Abdalla, 2021; Kärnä et al., 2013; Sibai et al., 2021). The high satisfaction levels also enable universities to attract new students, secure funding, and maintain a competitive edge in the higher education landscape (Alkhateeb & Abdalla, 2021; Sibai et al., 2021). Studies have consistently shown that a significant proportion of students who leave college do so during or at the end of their first year (Al-Sheeb et al., 2018). This early attrition not only reflects potential issues in the transition to university life but also highlights gaps in institutional support systems that can affect student well-being and academic engagement.

Student life is influenced by different factors that can lead to student satisfaction. Apart from teaching effectiveness, campus climate also has a very strong impact on student satisfaction. Facilities like classrooms, library, internet access, computer laboratories, social areas, cafeterias and hostel facilities can directly or indirectly influence the student's overall education (Rasheed & Rashid, 2024; Weerasinghe & Fernando, 2018). Factors such as the quality of academic resources, support services, campus facilities, and the availability of guidance, particularly for first-year students, play a crucial role in determining whether students stay engaged and committed to their studies. The effective management of these facilities plays a crucial role in achieving the broader objectives of educational institutions by providing students with the necessary infrastructure that supports both academic performance and overall college functionality (Al-Kadri et al., 2020; Kärnä et al., 2013).

Additionally, when it comes to learning resources and facilities, students regularly interact with administrative staff whose primary role is to facilitate access to these resources and provide support when needed. The quality of this interaction and the efficiency of the services provided by the administrative staff are critical factors in shaping students' overall satisfaction with the learning environment. Administrative staff organizes and coordinates teaching and other campus related activities and regularly interacts with the students. For some students, limited or negative interactions with the administration may reinforce perceptions of the system as a cumbersome and unhelpful bureaucracy (Weerasinghe & Fernando, 2018). With students' experience of institution facilities, they often interact with administrative staff. Student satisfaction is not only influenced by the

facilities but may also be influenced by students' interaction with non-academic or administrative staff who manage the facilities (Azam, 2018).

The quality of administrative staff includes reliability, responsiveness, empathy, fairness and cooperation with students (Weerasinghe & Fernando, 2018). Many of the studies have debated that the quality of administrative staff may not necessarily lead to student satisfaction but could also result in negative impact due to lack of empathy, reliability of the administrative staff (Pathmini et al., 2014). Thus, it is essential to be aware of the role of administrative staff in providing a satisfactory experience for the students on learning resources and facilities. Research has also indicated that while the presence of administrative staff may not directly result in heightened student satisfaction, their absence or ineffectiveness often leads to a significant decline in student perceptions of the institution (El-Hilali et al., 2015; Van Deuren & Lhaden, 2017a; Wilson et al., 2020). In other words, administrative staff may not always be the primary driver of student satisfaction, but their unavailability or poor performance can be a major source of dissatisfaction. Studies have also highlighted the importance of having friendly, approachable, and proactive administrative personnel who are responsive to student needs (Azam, 2018; Wilson et al., 2020). Such staff members play a key role in helping students navigate academic challenges and access necessary resources, which can significantly enhance their overall college experience. The availability of helpful administrative support has been shown to positively influence student satisfaction, reinforcing the notion that quality student services are integral to a positive academic environment.

Methodology

Research Design

The study adopted a quantitative research design to ascertain students' experiences and satisfaction level for the learning resources and facilities during COVID-19 pandemic. The participants of the study rated statements of a semi-structured questionnaire on a Likert scale. This study design enables measuring rating scores as a representation of the performance of different academic settings in providing advice and support services.

Sampling

The sample of this study comprised both male and female students from three college campuses of Applied Medical Sciences in Saudi Arabia. A purposive sampling technique based on snowballing methods was used to collect data from 1784 health sciences students, 1084 female and 700 male students. These participants belonged to three campuses of a university: Al Ahsa (254 students), Jeddah (531 students), and Riyadh (991) students. These students were pursuing their studies in six colleges: College of Applied Medical Sciences (CAMS, 632 students), College of Dentistry (COD, 82 students), College of Medicine (COM, 500 students), the College of Nursing (CON, 458 students), College of Pharmacy (COP, 49 students), and College of Public Health and Health Informatics (CPHHI, 64 students).

Instrument and Data Collection

A questionnaire was electronically distributed during the second semester of the 2019-

2020 academic year to all the campuses of three colleges. The questionnaire comprised two sections: the first section asked information about their gender, campus and college; the second section included seven statements about students' experience of learning resources and facilities during COVID-19 pandemic. These statements were: Statement 1: "Classrooms (including lecture rooms, laboratories etc.) are attractive and comfortable." Statement 2: "Student computing facilities are sufficient for my needs." Statement 3: "The library staff are helpful when I need assistance." Statement 4: "I am satisfied with the quality and extent of materials available in the library." Statement 5: "The library is open at convenient times." Statement 6: "Adequate facilities are available for extra-curricular activities (including sport and recreational activities)." Statement 7: "Adequate facilities are available at this institution for religious observances." The students were asked to rate these statements on a scale from 1 to 5 with 1 = strongly disagree and 5 = strongly agree. Overall, the ratings on all questions were above average as in Table 1.

Data Analysis

The data collected through questionnaire was tested first for its rating scores, to find out whether it differed significantly between male and female students, as well as between different campuses and academic groups. Next, the main research question was tested to find out whether demographic characteristics such as gender, campus affiliation, or academic group membership could predict the rating scores in an ordinal logistic regression analysis. Statistical analysis, using the Kruskal-Wallis test in R, revealed that overall student satisfaction with learning resources was slightly above average

Results

Table 1 presents the mean, median and standard error of mean of the given 7 statements. This reveals that except for two statements, No. 5 and 6, all statements have a higher median in the given responses.

Table 1

Mean Values for Each of The Analyzed Questions

Statement	Mean	Median	SEM
1.	3,59	4,00	0,03
2.	3,56	4,00	0,03
3.	3,67	4,00	0,03
4.	3,61	4,00	0,02
5.	3,51	3,00	0,03
6.	3,50	3,00	0,03
7.	3,74	4,00	0,03

Note. SEM = standard error of the mean

Next, several strategies were adopted to address Content Validity, Face Validity, and External Validity of the survey statements and establish credibility and accuracy of the survey's measurements. The Content Validity ensures that the survey comprehensively covers all aspects of student satisfaction with learning resources and facilities. To achieve this, the survey questions were developed based on an extensive review of existing literature, focusing on the key factors affecting student satisfaction in academic

environments, especially during and post the COVID-19 pandemic. Additional inputs from experts in education, psychology, and health sciences were sought to verify that all relevant domains (e.g., quality of resources, accessibility, support services) were adequately represented. By ensuring that the survey covered the full scope of the topic, content validity was established.

The Face Validity ensures that the survey appears, on the surface, to measure what it is supposed to measure. While this is a more subjective form of validity, it was still important to ensure that the survey items were clear, relevant, and understandable from the perspective of the respondents. A pilot study with a small group of students was conducted to ensure the questions made sense to them and that they believed the questions were appropriate for measuring their satisfaction with learning resources and facilities. The feedback gathered from this process helped refine the wording of questions, further enhancing the survey's face validity. External Validity refers to the generalizability of the findings. By collecting data from a diverse sample of health sciences students across different campuses and academic groups, the study ensured that the survey results could be applied to the broader population of students. This diversity in the sample increased the likelihood that the findings would reflect the overall trends in student satisfaction, not just those of a specific subset. By addressing these various forms of validity, the study ensured that the survey provided an accurate representation of health sciences students' satisfaction with learning resources and facilities during the COVID-19 pandemic. These efforts enhance the credibility of the findings, making the conclusions drawn from the data more reliable and applicable to real-world contexts.

The software R (version 4.0.3, R Core Team) was used to analyze if question scores were influenced by gender, academic group, and campus. We performed non-parametric Kruskal-Wallis tests on each of the seven statements, with gender, academic group, or campus as independent variables and rating score as dependent variable. Separate analyses were conducted due to lack of participant ID information. Kruskal-Wallis tests compared rating scores between males and females, and between campuses and academic groups. When significant main effects were found, the Tukey and Kramer test was used for subsequent pairwise comparisons. We then used ordinal logistic regression with the `polr()` library in R to determine if gender, campus, or academic group could predict rating scores. The `brant()` library from the MASS package was used to examine the parallel regression assumption. Females were the baseline level for gender, Al Ahsa for campus, and CAMS for academic groups.

Table 2

Differences Among Males and Females

Statement	Chi-Square	P-value	Female Rating	Male Rating
1	22.79	<0.001	3.49	3.76
2	12.34	<0.001	3.5	3.66
3	12.34	<0.001	3.6	3.8
4	6.06	0.013	3.55	3.70
5	0.64	0.42	3.49	3.53
6	6.07	0.013	3.44	3.60
7	2.91	0.088	3.7	3.8

As a results of the students' response to the seven statements about learning resources and facilities, there was significant difference between male and female students in chi-square and p-values, as seen in Table 2.

Furthermore, as in Table 3, no differences were found across the three campuses in statement 1 ($\chi^2 = 0.54$, $df = 2$, $p = 0.76$), statement 2 ($\chi^2 = 2.0$, $df = 2$, $p = 0.36$), statement 3 turned out to be significant ($\chi^2 = 7.18$, $df = 2$, $p = 0.027$), but post hoc pairwise comparisons resulted in no significant differences (all p 's > 0.8). Statement 4 was significant ($\chi^2 = 9.32$, $df = 2$, $p = 0.009$) and post hoc pairwise comparisons revealed a significant difference between Riyadh and Jeddah ($p = 0.047$, Riyadh = 3.68, Jeddah = 3.53), but not between Riyadh and Al Ahsa ($p = 0.062$; Al Ahsa = 3.49) and Jeddah and Al Ahsa ($p = 0.92$). Statement 5 was not significant ($\chi^2 = 2.92$, $df = 2$, $p = 0.23$), statement 6 ($\chi^2 = 3.22$, $df = 2$, $p = 0.19$), while statement 7 was significant ($\chi^2 = 13.89$, $df = 2$, $p < 0.001$). Post hoc comparison revealed a significant difference between Riyadh and Jeddah ($p = 0.0013$; Riyadh = 3.82; Jeddah = 3.61), but not between Riyadh and Al Ahsa ($p = 0.33$; Al Ahsa = 3.7) and not between Jeddah and Al Ahsa ($p = 0.46$).

Table 3

Differences Among Campuses

Statement	Chi-Square	P-value
1	0.54	0.76
2	2.0	0.36
3	7.18	0.027
4	9.32	0.009
5	2.92	0.23
6	3.22	0.19
7	13.89	<0.001

Finally, as seen in Table 4, we analyzed rating scores across academic groups and seven statements. As a result, there was a significant main effect of academic group in statement 1 ($\chi^2 = 13.17$, $df = 5$, $p = 0.022$). Further pairwise comparisons revealed no significant differences (all p 's > 0.15). Furthermore, we found no significant differences in statement 2 ($\chi^2 = 4.28$, $df = 5$, $p = 0.51$), statement 3 ($\chi^2 = 9.13$, $df = 5$, $p = 0.104$), and statement 4 ($\chi^2 = 6.11$, $df = 5$, $p = 0.29$). Statement 5 resulted in a marginally significant effect ($\chi^2 = 10.96$, $df = 5$, $p = 0.052$), but post-hoc comparisons resulted in no significant differences (all p 's > 0.1). Statement 6 was significant ($\chi^2 = 22.17$, $df = 5$, $p < 0.001$). Post-hoc pairwise comparisons resulted in significant differences between CAMS and COM ($p = 0.021$; CAMS = 3.65, COM = 3.46), CAMS and CON ($p = 0.04$, CON = 3.44), and CAMS and COP ($p = 0.014$, COP = 3.00). No other differences reached the significance level ($p > 0.2$). Finally, statement 7 was significant ($\chi^2 = 13.63$, $df = 5$, $p = 0.018$). However, none of the post-hoc comparisons turned out to be significant (all p 's > 0.2).

Table 5 presents prediction for all seven statements. In the prediction of rating scores in statement 1, we found that COM had a significant effect (Estimate = -0.279, standard error = 0.115, z-value = -2.42, $p = 0.015$, OR = 0.75). In other words, as the academic group moves from the CAMS baseline to the COM, the odds of observing category 1 of the rating score versus the other 4 categories increased by 25%. CPHHI was also a significant predictor (Estimate = 0.540, standard error = 0.237, z-value = 2.27, $p = 0.023$, OR = 1.71). Finally, gender was a significant predictor (Estimate = 0.55, standard error = 0.104, z-value = 5.35, $p < 0.001$, OR = 1.74). No other predictors resulted in significant effects (all p 's > 0.1).

Table 4

Differences Among the Academic Groups

Statement	Chi-Square	P-value
1	13.17	0.022
2	4.28	0.51
3	9.13	0.104
4	6.11	0.29
5	10.96	0.052
6	22.17	<0.001
7	13.63	0.018

In statement 2, COM was a significant predictor (Estimate = -0.24, standard error = 0.11, z-value = -2.05, $p = 0.039$, OR = 0.78). Just as described above, when the academic group changed from the CAMS baseline to COM, the odds of observing category 1 of rating score vs. other 4 categories increased by 22%. Gender was also a significant predictor (Estimate = 0.32, standard error = 0.10, z-value = 3.10, $p = 0.002$, OR = 1.38). No other predictors resulted in significant effects (all p 's > 0.1). In statement 3, there was a marginally significant predictor of CPHHI (Estimate = 0.46, standard error = 0.23, z-value = 1.92, $p = 0.053$, OR = 1.58). The gender was again a significant predictor (Estimate = 0.37, standard error = 0.10, z-value = 3.55, $p < 0.001$, OR = 1.44). In statement 4, there was a significant predictor of COM (Estimate = -0.27, standard error = 0.11, z-value = -2.38, $p = 0.017$, OR = 0.76). The gender was also a significant predictor (Estimate = 0.31, standard error = 0.10, z-value = 2.94, $p = 0.003$, OR = 1.35). Finally, the Riyadh campus was a significant predictor (Estimate = 0.33, standard error = 0.13, z-value = 2.42, $p = 0.015$, OR = 1.39).

Table 5

Prediction for Statement 5 - 11

Statement	Predictor	Estimate	Standard Error	Z-value	p-value	OR
1	COM	-0.279	0.115	-2.42	0.015	0.75
1	CPHHI	0.540	0.237	2.27	0.023	1.71
1	Gender	0.55	0.104	5.35	<0.001	1.74
2	COM	-0.24	0.11	-2.05	0.039	0.78
2	Gender	0.32	0.10	3.10	0.002	1.38
3	CPHHI	0.46	0.23	1.92	0.053	1.58
3	Gender	0.37	0.10	3.55	<0.001	1.44
4	COM	-0.27	0.11	-2.38	0.017	0.76
4	Gender	0.31	0.10	2.94	0.003	1.35
4	Riyadh campus	0.33	0.13	2.42	0.015	1.39
4	COM	-0.27	0.11	-2.36	0.018	0.76
5	Gender	0.21	0.10	2.01	0.045	0.76
6	COM	-0.38	0.11	-3.37	<0.001	0.67
6	COP	-0.99	0.28	-3.46	<0.001	0.37
6	Gender	0.26	0.10	2.53	0.011	1.3
7	COM	-0.29	0.11	-2.51	0.012	0.74

In statement 5, there was a significant predictor of COM (Estimate = -0.27, standard error = 0.11, z-value = -2.36, $p = 0.018$, OR = 0.76). The gender was also a significant

predictor (Estimate = 0.21, standard error = 0.10, z-value = 2.01, $p = 0.045$, OR = 0.76). In statement 6, there was a significant predictor of COM (Estimate = -0.38, standard error = 0.11, z-value = -3.37, $p < 0.001$, OR = 0.67). The COP was a significant predictor too (Estimate = -0.99, standard error = 0.28, z-value = -3.46, $p < 0.001$, OR = 0.37). The gender was also a significant predictor (Estimate = 0.26, standard error = 0.10, z-value = 2.53, $p = 0.011$, OR = 1.3). Finally, in statement 7 there was a significant predictor of COM (Estimate = -0.29, standard error = 0.11, z-value = -2.51, $p = 0.012$, OR = 0.74). No other predictors were significant (all p 's > 0.1).

Discussion

This study explored the impact of learning resources and facilities quality on students' satisfaction during COVID-19 pandemic through electronically delivered survey. The survey explored students' responses to seven statements related to the quality of learning resources and facilities. The students' response differed significantly based on their gender. The male students were more satisfied about the learning resources and facilities than female students. Additionally, students' responses did differ significantly based on their campus, especially between Riyadh and Jeddah. Overall, Riyadh had the highest satisfaction although the three campuses were built in the same period by the same contractor with the same standards of facilities. However, each campus was structured differently in terms of size and availability of resources and support. Riyadh had the biggest campus and offered more resources. This explained why there is a significant difference among the three campuses according to students' satisfaction.

Each academic group in the three colleges responded differently to the seven statements about learning resources and facilities. Students' satisfaction with CAMS, for example, was high when compared with other colleges for most of the statements. Also, COM is a significant predictor of student satisfaction although the prediction is still low, around 20%. These results were beneficial for the university leaders to make sense of how these first-year students really saw the university as a higher education institute on the aspect of providing sufficient learning resources and facilities.

Student satisfaction, particularly among first-year college students, has become a critical area of focus for higher education institutions due to the high dropout rates observed in this sample. This attrition could be due to the transition to university life but it also highlights gaps in institutional support systems that can affect student well-being and academic engagement. From a financial perspective, retaining current students is significantly more cost-effective than recruiting new ones. The costs associated with marketing, admissions processes, and onboarding new students can be substantial. Retention, on the other hand, maximizes the return on the initial investment made in recruiting students and fosters a stable, long-term enrollment base, which is essential for the financial health of any institution. For Saudi institutions, where improving educational outcomes and ensuring long-term success are national priorities, retaining students has broader implications for the country's educational goals and workforce development.

Therefore, identifying the key factors that contribute to overall student satisfaction is not just a matter of improving the student experience but also of sustaining institutional success. The study identified factors such as the quality of academic resources, support services, campus facilities, and the availability of guidance, particularly for first-year

students, playing a crucial role in determining whether students stay engaged and committed to their studies. It was unanimously agreed by most participants that Saudi health colleges need to improve student retention rates by enhancing their satisfaction levels, especially during the COVID-19 pandemic. The educational institutions should not only provide students with the necessary infrastructure to maintain their academic performance but also take adequate measures of their effective management. Well-maintained and thoughtfully designed facilities contribute to a conducive learning environment, which in turn fosters student engagement and success.

The differences observed in this study among various colleges and campuses within the same Saudi university can be attributed to the varying levels of sophistication and availability of learning resources and facilities. These disparities in infrastructure and support services are likely to impact student satisfaction, as students from campuses with more advanced resources tend to have a better academic experience. This finding aligns with a growing body of research that highlights the significant relationship between the quality of educational institution facilities and student satisfaction. Studies such as those by Weerasinghe and Fernando (2018), Van et al. (2020) and Azam (2018) have consistently shown a statistically significant correlation between the two, underscoring the crucial role that well-developed facilities play in enhancing students' academic and social experiences.

Given this evidence, it becomes clear that investment in campus facilities is not just a matter of improving aesthetics or infrastructure, but an essential strategy for fostering student engagement, retention, and overall satisfaction. For Saudi universities, this insight is particularly important as they seek to enhance their reputation and compete globally. By prioritizing the development of high-quality, accessible, and innovative learning environments, universities can improve the student experience and, in turn, achieve higher levels of student satisfaction. This is especially crucial in a post-pandemic context, where remote and hybrid learning models have placed even greater demands on institutions to provide flexible and comprehensive learning resources. As such, this study reinforces the need for continuous investment in educational facilities to both elevate the quality of education and secure long-term student satisfaction.

The study also found out that students regularly interact with administrative staff and request them to provide learning resources and facilities. The participants emphasized that the quality and efficiency of the administrative staff can shape students' overall satisfaction. Any negative experience or interactions with the administration may give birth to negative perceptions about the system. This is consistent with findings of (Weerasinghe & Fernando, 2018), which addressed the issues of cumbersome and unhelpful bureaucracy. Likewise, studies (Van Deuren & Lhaden, 2017a; Wilson et al., 2020) also agreed that absence or ineffectiveness of the administrative staff can result in a significant decline in student perceptions of the institution. Considering these findings, Saudi universities must prioritize the training and development of their administrative staff. Continuous professional development should focus on equipping staff with the skills necessary to effectively interact with students, guide them in the use of learning resources, and resolve issues swiftly and empathetically. Additionally, universities should implement regular assessments of administrative services, using clear and measurable criteria to ensure that staff performance aligns with the institution's goals of providing high-quality student support. Such initiatives would help to foster a more student-centered environment, contributing to higher levels of

satisfaction with the university's learning resources and facilities.

Conclusion

This study examined the satisfaction of health sciences students in Saudi Arabia with the learning resources and facilities they encountered during the COVID-19 pandemic, particularly focusing on their first exposure to English as the medium of instruction. The findings indicate that overall student satisfaction was slightly above average, with significant differences in satisfaction levels based on campus location, gender, and college affiliation. The College of Applied Medical Sciences students expressed the highest level of satisfaction, while female students reported higher satisfaction compared to their male counterparts. The results also suggested that while learning resources were generally adequate, there were variations across campuses and student demographics that influenced their experiences. These findings emphasize the importance of addressing specific student needs to improve resource allocation and accessibility across campuses. Furthermore, the transition to English as the medium of instruction appeared to present additional challenges for certain groups, potentially influencing their satisfaction levels.

Despite the overall positive feedback, the study highlights areas for improvement in ensuring equal access to high-quality learning resources across all campuses. Future efforts should focus on addressing the disparities in satisfaction among different student groups, particularly those who may face unique challenges in adapting to new learning environments.

This study has several limitations. First, the data was collected using self-reported measures through an online questionnaire, which may introduce response bias, as students might overestimate or underestimate their satisfaction levels. Additionally, the study was conducted in only three campuses of a single health sciences university in Saudi Arabia, limiting the generalizability of the findings to other institutions or countries. The study also focuses on a specific period (the COVID-19 pandemic), which may not fully reflect the normal learning experience. Finally, although statistical tests were conducted, causality cannot be inferred due to the cross-sectional nature of the study. Future research should consider expanding the scope of the study to include a broader range of universities and academic disciplines, both within Saudi Arabia and internationally, to obtain a more comprehensive understanding of student satisfaction with learning resources. Longitudinal studies could also be conducted to track changes in satisfaction over time, particularly in the post-pandemic period, to see how institutions adapt to new educational challenges. Additionally, qualitative research methods, such as interviews or focus groups, could provide deeper insights into students' experiences and offer more nuanced perspectives on the factors influencing their satisfaction.

The findings of this study carry important implications for educational policymakers. Institutions should prioritize equitable access to learning resources across different campuses and address the specific needs of students based on their gender and college affiliation. The significant differences in satisfaction between male and female students suggest that tailored support systems may be required to meet the distinct needs of these groups. Furthermore, policymakers should consider providing additional resources and support for students transitioning to English as the medium of instruction, especially in health sciences programs where language barriers may impact learning outcomes. Finally, this study underscores the need for continuous assessment and improvement of learning

resources and facilities to ensure they meet the evolving needs of students in a post-pandemic world. Developing policies that promote inclusivity, equal access, and adaptability in educational resources will be key to enhancing student satisfaction and success in the long term.

Conflict of Interest

The authors have no conflict of interest.

Ethics Approval & Funding

The research was approved by the IRB Committee from King Abdullah International Medical Research Center (KAIMRC), with reference number: RYD-20-419812-108479.

Data Availability

Data is available upon request.

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