

Research Article**The Attitude of Physical Therapy Students Towards Online Education During COVID-19**Rameesha Qazi^{1*}, Danish Attique², Sadia Batool³, Sahar Fatmi⁴¹Hamza Medical Center, Rawalpindi, Pakistan²Shifa International Hospital, Islamabad, Pakistan³PainFix Clinic, Abid Hospital Islamabad, Pakistan⁴Department of Rehabilitation Sciences Shifa Tameer e Millet University, Islamabad, Pakistan*Correspondence: rameesha.qazi1092@gmail.com

© The Author(s) 2023. This article is licensed under a Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>.

Abstract

This study aimed to determine the attitude of physical therapy students toward online education during the coronavirus disease (COVID-19). An analytical cross-sectional survey was conducted on 406 physical therapy students after the approval of the institutional review board & ethics committee (IRB&EC) of Shifa Tameer-e-Millat University. Using a non-probability convenient sampling technique, participants were selected from different universities in Pakistan. Physical therapy students of both genders, aged between 18 to 24, were included. The sample size was calculated by Rao software, and responses were collected through a self-structured online survey. Cronbach's alpha was also applied to check the internal consistency of our self-structured questionnaire, which reached acceptable reliability of $\alpha = 0.77$. The total valid responses were 387. The results show that 65 (16.8 %) were males, and 322 (83.2%) were females. The student satisfaction showed a moderate positive correlation ($r= 0.039$, $p= 0.442$) with the student's attitude toward online education. The study concludes that physical therapy students in Pakistan are not satisfied with the online education system introduced due to the current situation of lockdown. It further concluded that the online education system for physical therapy students in Pakistan is not effective.

Keywords: Attitude, student satisfaction, internet, physical therapy, distance learning, e-learning, COVID-19**1. Introduction**

In 2020, online learning became compulsory in many countries as there was no choice left for the institutes due to the spread of a virus known as the severe acute respiratory syndrome (SARS) coronavirus 2 (SARS-CoV-2). It led to lockdowns around the globe because of its increasing cases due to social interaction. Many countries went into lockdown, and governments worldwide advised their people to quarantine themselves and avoid going outside. Shops, malls, offices, and educational institutes were closed, and those still working practiced SOPs strictly to avoid the spreading of the virus. As educational

institutes are crowded environments, many countries have shifted traditional classroom education to online classes to keep the students safe at home and not waste their time. Many schools and universities shifted to online courses to avoid wasting students' time (Mahmoud, El Magrabi, and Mohamed 2015) However, online schooling, a new way of learning for many, was also worrying not just for the students but also the parents (Yatrakis and Simon 2002) Theoretical and clinical knowledge are equally important in medical education and related fields. Clinical education is an important part of healthcare training and requires access to

Table: 1. Overall attitude of physical therapy students toward online education.

	Questions	Responses	Frequency	Cumulative %
A	Are the students happy with their online course?	Agree	256	27.1%
		Neutral	247	12.7%
		Disagree	1162	60.0%
B	Do the students anticipate a good future?	Agree	403	20.8%
		Neutral	301	15.5%
		Disagree	1231	63.6%
C	Do students face accessibility issues?	Agree	792	40.9%
		Neutral	169	8.7%
		Disagree	974	50.3%
D	Are the students satisfied with teachers attribute towards online classes?	Agree	696	35.9%
		Neutral	354	18.2%
		Disagree	884	45.6%
E	Are the students satisfied with their learning	Agree	400	20.6%
		Neutral	289	14.9%
		Disagree	1102	56.9%

patients, without which clinical practice environment cannot be recreated in a classroom(Rowe 2012). Physical therapy is a medical field requiring face-to-face learning or clinical exposure to practice. A physical therapist focuses on maximizing movement status or condition, functional independence, and general ability while preventing (or minimizing) secondary complications and optimizing safety through physical means, which cannot be learned without hands-on practice (Lee and Yankee 2021). This field requires more clinical knowledge and experience than theoretical information, which is very difficult to learn through online lectures (Masrom, Alwi, and Asshidin 2019).

Online education has become mandatory in Pakistan due to the current situation of COVID-19. It is at a very initial stage as it's a new method of learning . There was little training provided to the faculty or staff and students for online learning. Therefore, there have been several

complaints, especially from the student body, concerning the quality and effectiveness of the online education systems in Pakistan. This study was designed to determine the attitude of physical therapy students towards online education during COVID-19 and to find out if the online education system, applied in its current form, is effective. We hope that this study will help find the satisfaction level of physical therapy students towards online learning. It will also help determine the effectiveness of online education and provide useful data for policymakers to understand and develop constructive, successful, and efficacious methods of delivering curriculum online.

2. Methodology

The study has been approved by the institutional review board & ethics committee (IRB&EC) of Shifa Tameer-e-Millat University Islamabad, Pakistan. This was a descriptive cross-sectional survey completed over six

Table 2. Responses for Students attitude toward online education.

Question	Responses	Frequency	Percentage	Cumulative %
Online education in Physical Therapy is my choice of education in a degree course.	AA	10	2.6%	13.2%
	A	41	10.6%	
	AD	130	33.6%	78.3%
	D	173	44.7%	
I would recommend many others to join these online courses	AA	6	1.6%	12.5%
	A	42	10.9%	
	AD	129	33.3%	73.6%
	D	156	40.3%	
I find it difficult to learn using this online course session	AA	144	37.2%	73.6%
	A	141	36.4%	
	AD	24	6.2%	18.1%
	D	46	11.9%	
TOTAL		387	100%	100%

Table 3. Responses showing the effectiveness of online education.

Question	Responses	Frequency	Percentage	Cumulative %
Lack of hands-on experience with computers and the internet.	AA	85	22%	56.4%
	A	133	34.4%	
	AD	31	8%	34.9%
	D	104	26.9%	
I am facing technical issues due to outdated software and hardware.	AA	77	19.9%	49.9%
	A	116	30%	
	AD	35	9%	41.3%
	D	125	32.3%	
My performance is being affected due to unscheduled load shedding during online classes.	AA	123	31.8%	65.9%
	A	132	34.1%	
	AD	18	4.7%	27.2%
	D	87	22.5%	
TOTAL		387	100%	100%

months after the approval of the study. The data was collected from physical therapy students from different universities in Pakistan who were taking online classes during the COVID-19 pandemic. Four hundred six physical therapy students were enrolled through non-probability convenient sampling.

The data collection instrument was a structured questionnaire with five divisions. These divisions were; A. Are the students happy with

their online courses? B. Do the students anticipate a good future? C. Do students face accessibility issues? D. Are students satisfied with the teacher's attitude toward online classes? and E. Are the students satisfied with their learning?

Under each division, there are five subdivisions related to it, and each subdivision could be marked as either absolutely agree (AA), agree (A), I don't know (N), disagree (D), or absolutely

Table 4, Pearson correlation coefficient of effectiveness of online education system with Physical therapy student's attitude toward online education.

Variables	Correlation coefficient (r-value)	P-value
Effectiveness of online education system	0.039	0.442
Physical therapy student's attitude towards online education		

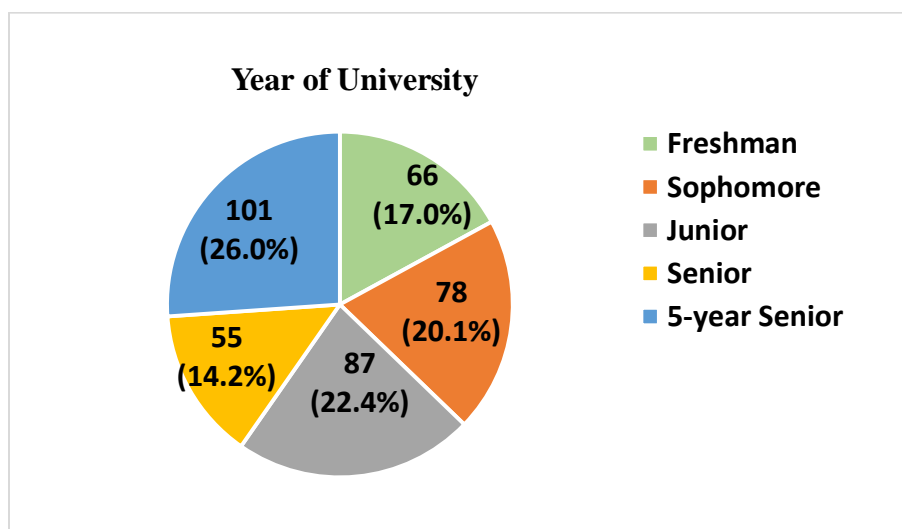


Figure 1. Distribution of students based on a year in University

disagree (AD). Therefore, in this questionnaire, there are a total of 25 questions, and we followed five-point Likert scale grading. 'Absolutely agreed' is graded one, 'agreed' is graded two, 'I don't know' is graded three, 'disagreed' is graded four, and 'absolutely disagreed' is graded five. Data was collected directly from the students through Google Forms and analyzed through SPSS software. A Chi-square test was applied to find out the association between students' attitudes and the effectiveness of the online education system.

3. Results

There was a total of 387 participants; among them, 65 (16.8 %) were males, and 322 (83.2%) were females, 66 were Freshman, 78 were Sophomore, 87 were Junior, 55 were Senior,

whereas 101 were enrolled as 5-year Seniors (Fig: 1). About half, 173 (44.7%) disagreed that physical therapy was their education of choice as a degree course whereas 130 (33.6%) absolutely disagreed. Only a very small number of participants admitted that physical therapy was their own choice. The majority were unfamiliar with the online education system as 136 (35.1%) disagreed, and 90 (23.3%) absolutely disagreed with the statement "I was aware of this online educational system before online classes". The majority of the students did not agree (38.2% disagreed, 23.3% absolutely disagreed) about their potential being rightly utilized in online classes, whereas a smaller number of students admitted to this statement. Approximately 40% of students were satisfied with teacher attention, with 124(32%) agreeing and 7.5% absolutely

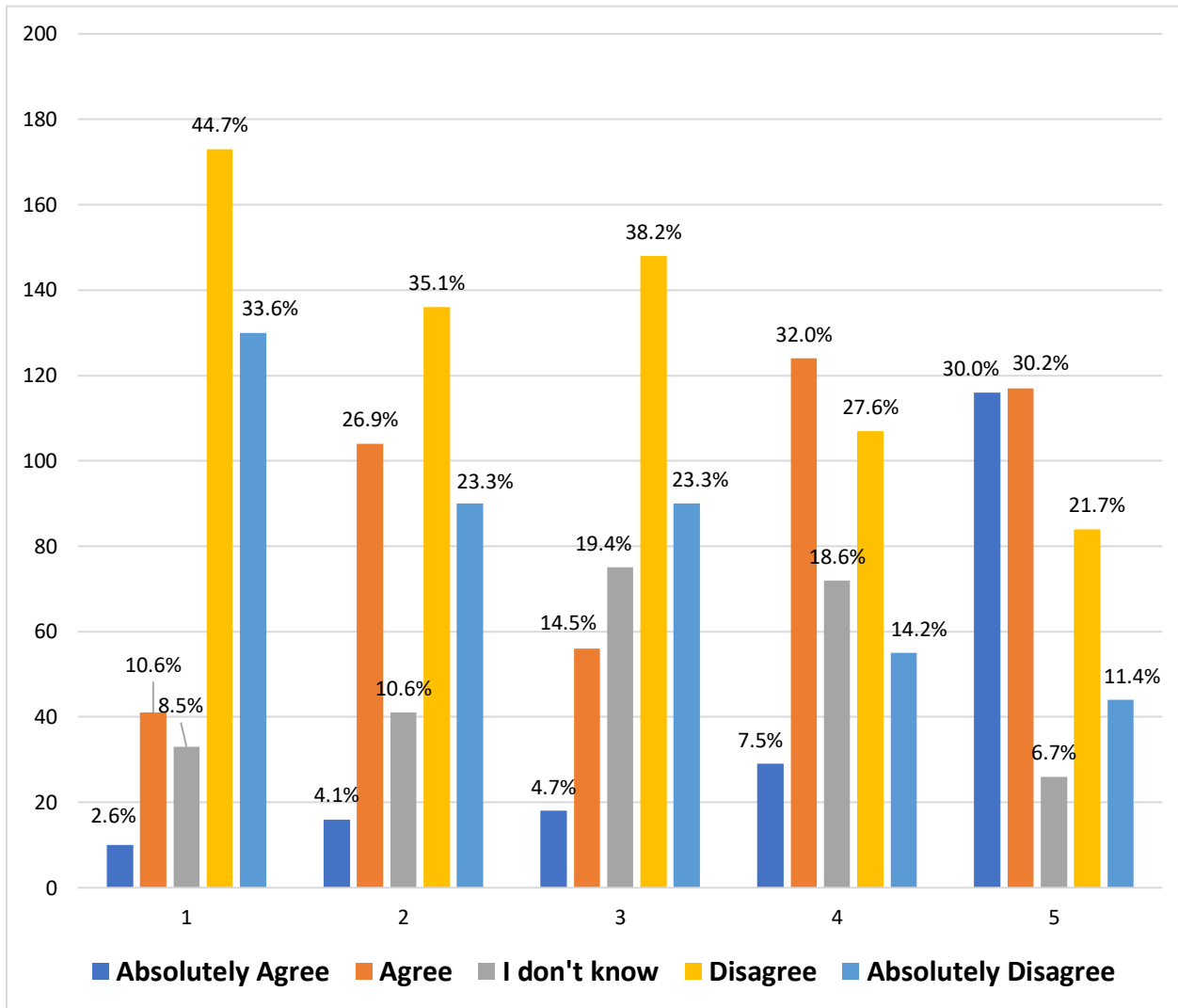


Figure 2. Are the students happy with their online course?

1. Online education in Physical Therapy is my choice of education in a degree course
2. I was aware of this online educational system before online classes
3. I feel that my potentials have been rightly utilized in online classes
4. I receive proper attention from the teacher during an online session
5. My extracurricular activities and hobbies have effected during these online classes

agreeing with the statement, "I receive proper attention from the teacher during an online session. A majority (60%) agreed that their extracurricular activities and hobbies were being affected during these online classes, showing that most students share a common thought (Fig: 2).

The number of students in favor of not recommending the online course to others was greater than those in favor of recommending it, as 156(40.3%) students disagreed, whereas

129(33.3%) absolutely disagreed with recommending it to others. Only a small fraction of students was in favor of recommending it to others. This means most students do not recommend others to join online courses. The majority of the students did not agree, i.e., 138(35.7%) disagreed, and 95(24.5%) absolutely disagreed with receiving the theoretical knowledge that is associated with patient assessment and treatment, whereas only a minority agreed to it. An overwhelming

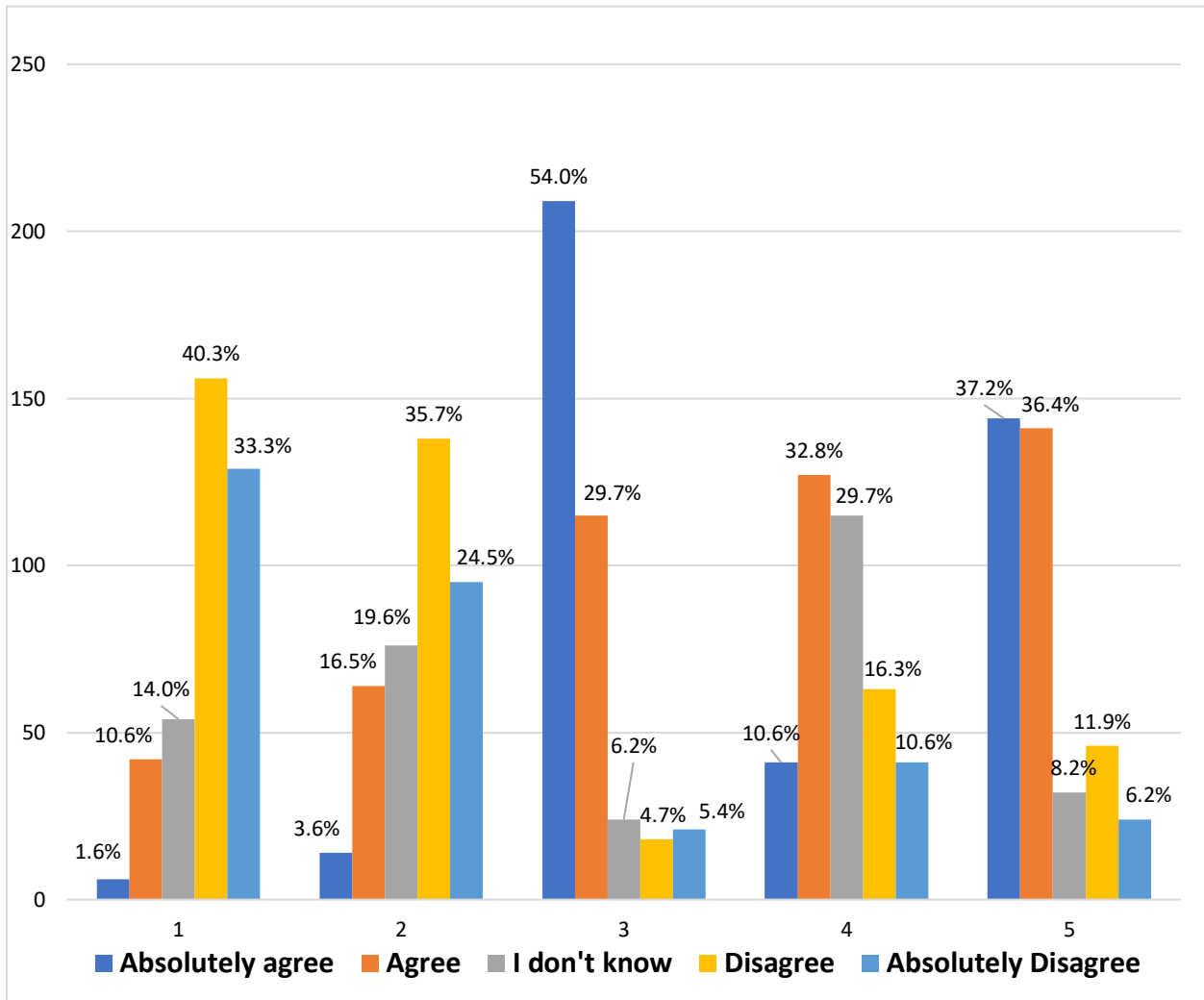


Figure 3, Do the students anticipate a good future?

1. I would recommend many others to join an online course
2. The theoretical teaching is mostly associated with patient assessment and treatment during online classes which will help me enhance my skills in the future.
3. I feel that my online learning will affect my clinical practice in the future.
4. I believe looking back on what I have a learned in a course will help me to remember it better
5. I find it difficult to learn using this online course session

majority believed that online learning would affect their clinical practice in the future (absolutely agreed 54%, agreed 29.7%). A significant fraction of the students agreed to finding it difficult to learn using online course sessions (Fig: 3).

A significant majority agreed that their academic performance got affected due to unscheduled load-shedding (power outages) during online classes". Slightly more than 50% were able to

connect easily to different educational applications provided by teachers (Fig: 4).

About two-thirds of the students agreed that the instructor was prepared for class and presented the material in an organized manner. About half the students agreed that the instructor assigns fair grades". More than 85% of students agreed that by using online classes the interaction with teachers is reduced. About two-thirds were not satisfied with the clinical discussion with teachers at this level in online classes". About

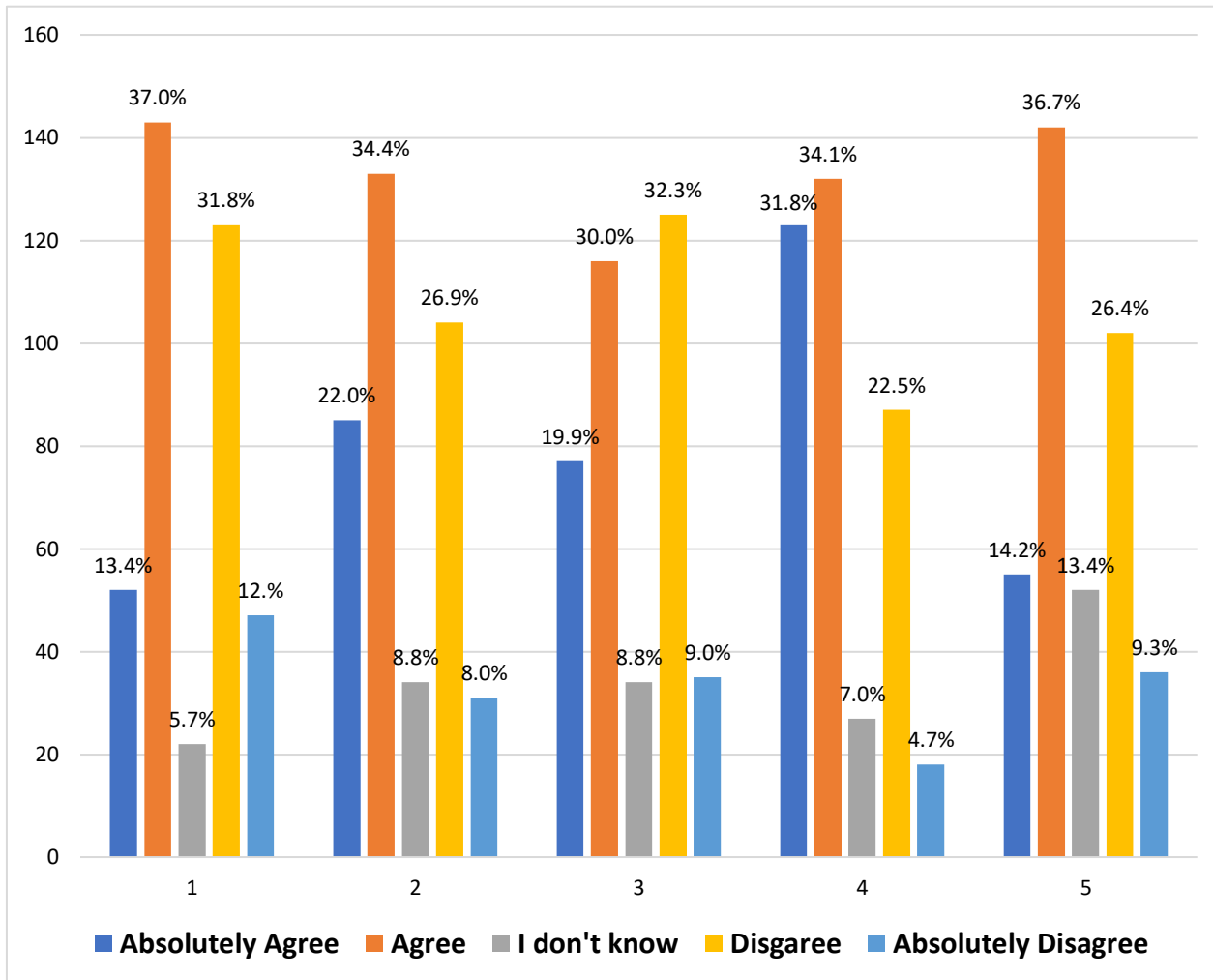


Figure 4, Do students face accessibility issues?

1. I am able to easily access the internet as needed for my studies
2. Lack of hands-on experience with computer and internet
3. I am facing technical issue due to outdated software and hardware
4. My performance is being affected due to unscheduled load shedding during online classes
5. I am able to easily connect to different educational applications provided by teachers

40% of students found the instructor's feedback helpful, which supported their learning (Fig: 5). More than 80% of students did not find that online learning was helping more in gaining knowledge compared to classroom teaching. Most of the students disagreed that the self-learning opportunities provided by online learning enhanced their knowledge. About half the students did not agree that the clinical teaching available online to the students is appropriate". About three-quarters of the students did not agree that 'they were learning

more in the online system and progressing' (Fig: 6). About 60.0% of students disagreed that they were happy with their online courses. A majority of the responses, 231 (63.6%), also disagreed that they anticipate a good future. A Chi-square test was applied to find out the association between students' attitudes and the effectiveness of the online education system. The correlation between the variables was analyzed through Pearson's correlation test. Effectiveness of the online education system showed a moderate positive co-relation ($r = 0.039$) with

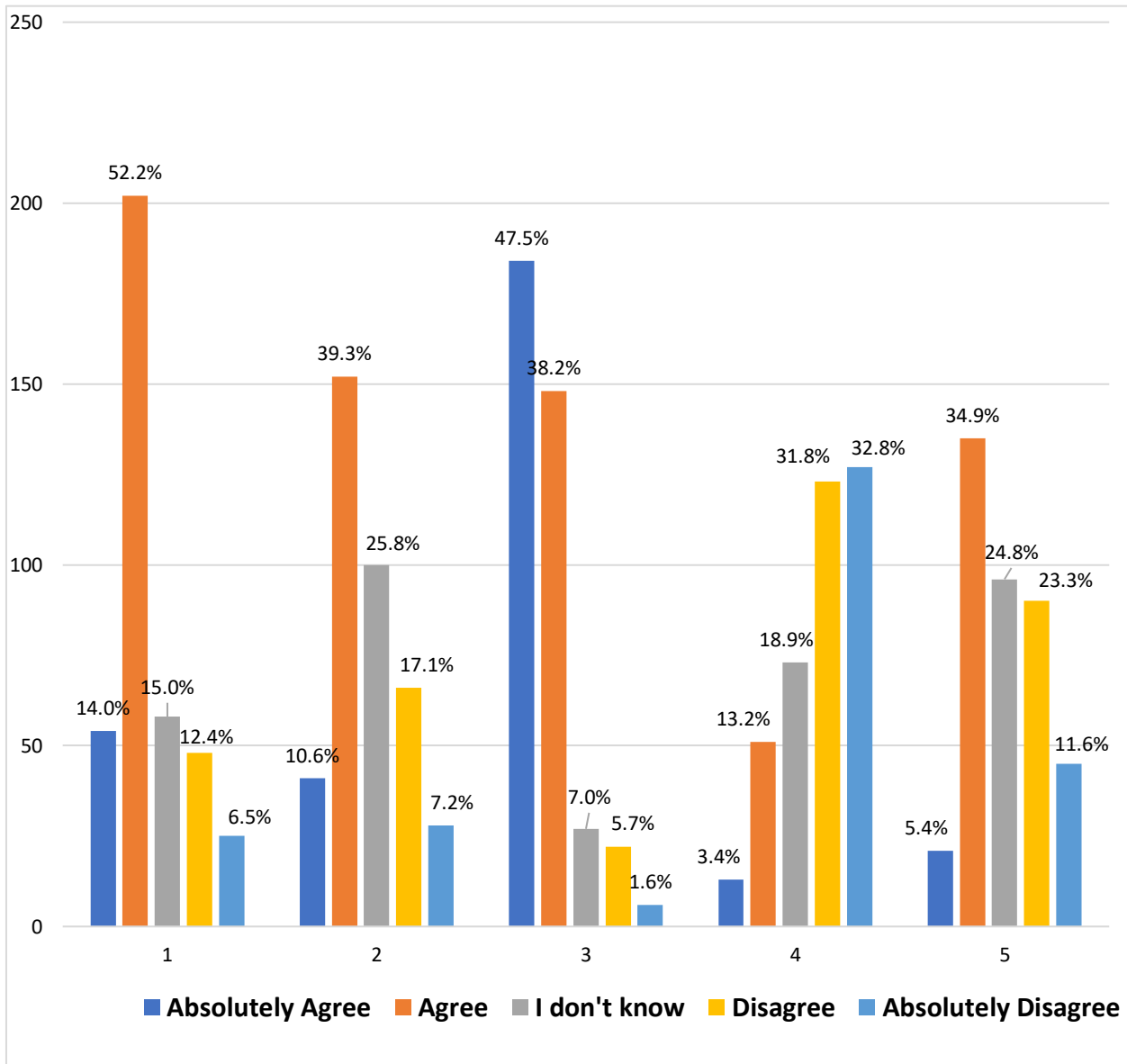


Figure 5. Are students satisfied with teachers attribute towards online classes?

1. The instructor was prepared for class and presented the material in an organized manner
2. The instructor assigns grades fair
3. By using online classes the interaction with teachers is reduced
4. I am satisfied with the clinical discussion from teachers at this level in online classes
5. The instructors' feedback was helpful and supported my learning

physical therapy student's attitudes towards online education. Both show non-significant associations ($p > 0.05$). Table 4 shows the results of this test.

Reliability analysis was carried out on the "Student's attitude towards online education during the COVID-19" scale comprising 25 items. Cronbach's alpha showed the

questionnaire to reach acceptable reliability of $\alpha = 0.77$.

4. Discussion

Studies have shown that students face several issues during online learning, such as. A study conducted on the students of Victoria University, Melbourne, Australia, showed that

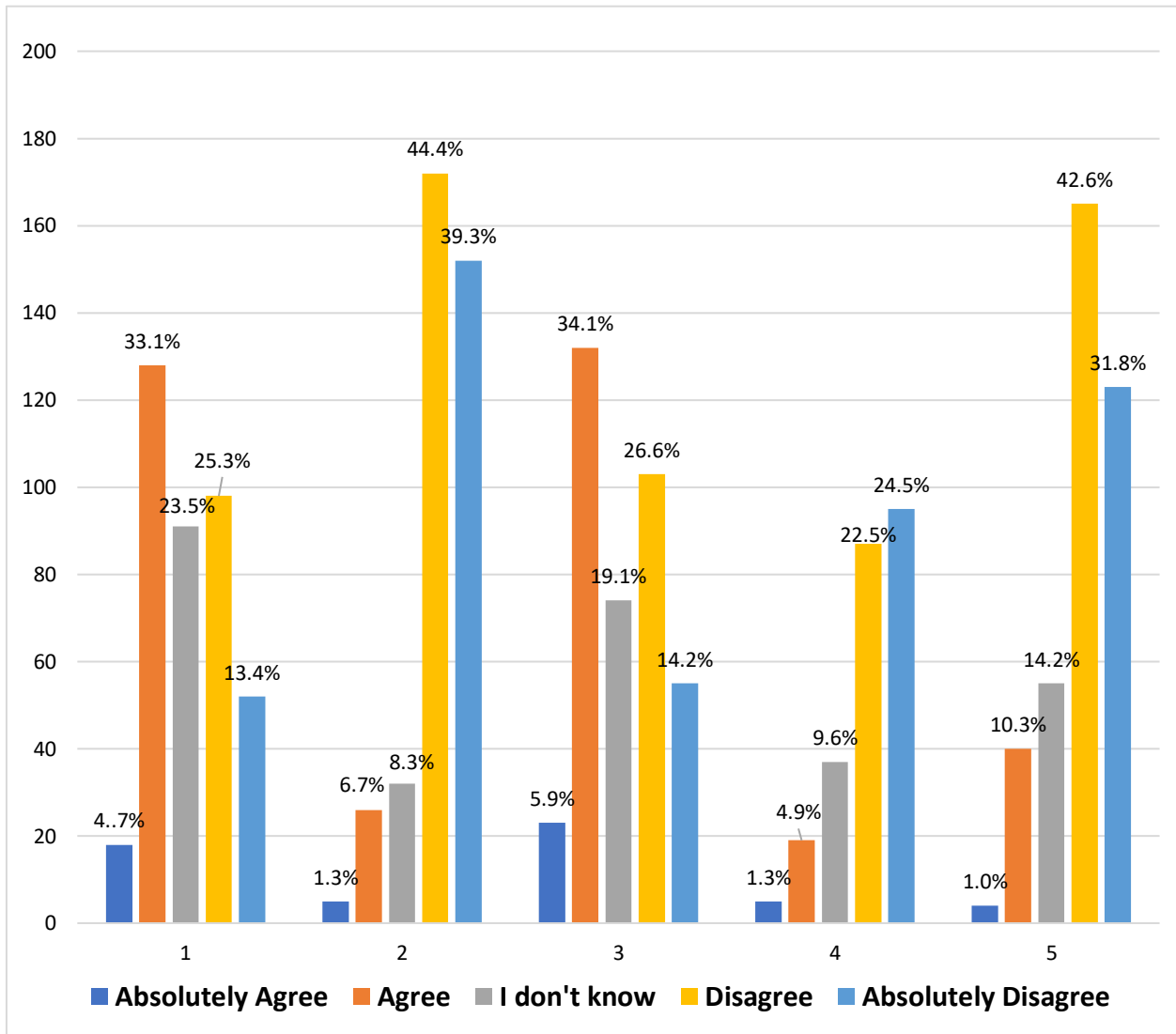


Figure 6, Are the students satisfied with their learning?

1. I feel this online education system is developing fast.
2. I feel more of online teaching helps to gain knowledge then classroom teaching.
3. Self-learning enhances my learning and I have opportunities for self-learning in my courses.
4. I feel clinical teaching available online to the students is appropriate.
5. I feel I am learning more and more in the online system about my courses are progressing

online learning was less effective as the majority of the students, 314 (97%), considered social interaction an important part of learning through classroom teaching (Wong and Fong 2014). Mitchell and Iris Geva-May also showed in their study that e-learning wasn't effective as classroom teaching as the respondents believed that the workload was excessive and required extra effort (Mitchell and Geva-May 2009). In compliance with this, another study conducted

in Pakistan to determine the perceptions of students regarding e-learning during COVID-19, at a private medical college shows similar findings concluding that medical students preferred face-to-face learning over online learning in Pakistan during COVID-19.

The current study also shows that the majority of the students (84%) believed that student-teacher interaction has reduced, and 69% found the quality of e-learning unsatisfactory (Smart

and Cappel 2006). E-learning requires motivation and mastery in time management and communication skills. Scientific fields require practical work with hands-on practice, which is neglected during online learning (Ayvaz Reis 2010). Rowe and colleagues make a similar point and state that online learning is ineffective for the field that requires a lot of practical work and needs social interaction and an environment to foster it, which is not possible during online education. Another study states that students faced technical problems during online learning, and they considered social isolation a leading cause of dissatisfaction in students (Abbasi et al. 2020).

Farahat and colleagues revealed that the students were unsatisfied and had a negative attitude toward e-learning as they believed it was a hard way to learn (Farahat 2012). Low satisfaction levels with this learning mode may be due to internet access issues and the e-learning standard (Rhema, Miliszewska, and Sztendur 2013). While investigating the challenges of implementing e-learning in Pakistani universities, Qureshi and colleagues found that seventy-two percent of students believed face-to-face interaction was preferable (Ijaz A. Qureshi 2012). The three top factors that were affected by online learning include the willingness of the students to study online, the study material used, and the finances required (Jegade and Kirkwood 1994). The results of our study reinforce these claims that students may not be willing to learn online.

In comparison, some studies revealed that students were more satisfied with the online learning mechanisms. Many students found it to be better and more informative (Perrin 2015). Many studies revealed that students were satisfied because they believed that online learning mechanisms helped them continue their education during the pandemic. But the factors affecting online learning mechanisms vary from country to country. Students in developed states have more access to advanced

technology (George et al. 2014). Unfortunately, Pakistan, a developing country, does not have advanced information technology infrastructure. Therefore, the experiences of students vary from one geographical region to the other depending upon several factors.

In a study conducted in India, contrary to our study, 76% of students showed a positive and satisfactory attitude toward e-learning. This deviation might be due to the difference in the type of degree program, teacher's cooperation, and familiarity with technology usage (Rafiq, Hussain, and Abbas 2020). Another study conducted at the University of South Australia, Adelaide, supports this finding, and the reasons for its deviation include students' interest in the course taught (Mishra and Panda 2007). A study conducted that included bachelor students as their sample population also shows a satisfactory attitude towards online education. The major factor for such difference was due to part-time jobs of students who preferred online education to eliminate travel time (Urbina, Villatoro, and Salinas 2021).

Our study has some limitations. The first was that our research is confined to physical therapy students only. There were high chances of response biases due to a lack of face-to-face interaction with participants. Also, we were unable to get responses from students living in remote areas due to their internet access issues.

5. Conclusions

The study concludes that the physical therapy students in Pakistan were dissatisfied with the online education system introduced due to COVID-19 lockdown. It also found that the online education system for physical therapy students in Pakistan does not seem effective. Further, the internal consistency of our self-structured questionnaire has acceptable reliability, which means most items appear to be worthy of retention, and effectiveness of the online education system shows a moderate

positive correlation with physical therapy students' attitudes toward online education.

Conflict of interest

The authors declare that they have no conflicts of interest to disclose.

Funding

There was no specific funding available for this project.

Study Approval

Institutional review board and ethics committee of the Shifa Tameer-e-Millat University approved this study.

Consent Forms

Each participant signed a consent form. These forms are available with the authors.

Authors Contributions

RQ conceptualized the study and wrote the initial manuscript, DA, and SB helped with the literature search analysis and writing the first draft, DA, and SB did the data collection and review of the studies, and SF wrote the final manuscript.

Acknowledgments

The corresponding author acknowledges the support of the Shifa Tameer e Millat University throughout the project.

References

Abbasi, S., T. Ayoob, A. Malik, and S. I. Memon. 2020. "Perceptions of students regarding E-learning during Covid-19 at a private medical college." *Pak J Med Sci* no. 36 (Covid19-s4):S57-s61. doi: 10.12669/pjms.36.COVID19-S4.2766.

Ayvaz Reis, Zerrin. 2010. "Investigating the Attitude of Students Towards Online Learning." *IJE* no. 2:35-47. doi: 10.4018/jea.2010100103.

Farahat, Taher. 2012. "Applying the technology acceptance model to online learning in the Egyptian universities." *Procedia-Social and Behavioral Sciences* no. 64:95-104.

George, Pradeep Paul, Nikos Papachristou, José Marcano Belisario, Wei Wang, Petra A Wark, Ziva Cotic, Kristine Rasmussen, René Sluiter, Eva Riboli-Sasco, and Lorainne Tudor Car. 2014. "Online eLearning for undergraduates in health professions: a systematic review of the impact on knowledge, skills, attitudes and satisfaction." *Journal of global health* no. 4 (1).

Ijaz A. Qureshi, Khola Ilyas, Robia Yasmin, Michael Whitty. 2012. "Challenges of Implementing E-Learning in a Pakistani University." *Knowledge Management and E-Learning* no. 4 (3):310-324.

Jegade, Olugbemi J, and Jannette Kirkwood. 1994. "Students' anxiety in learning through distance education." *Distance education* no. 15 (2):279-290.

Lee, Tori K, and Eva L Yankee. 2021. "A review on Parkinson's disease treatment." *Neuroimmunology and Neuroinflammation* no. 8:222.

Mahmoud, Safaa Rashad, Neama Mohamed El Magrabi, and Fatma Rushdy Mohamed. 2015. "Faculty of nursing teaching staff members and students attitudes toward e-learning." *IOSR Journal of Nursing and Health Science* no. 4 (4):36-45.

Masrom, Umi Kalsom, NANM Alwi, and Nor Hazlin Nor Asshidin. 2019. "Understanding learners' satisfaction in blended learning among undergraduate students in Malaysia." *Universal Journal of Educational Research* no. 7 (10):2233-2238.

Mishra, Sanjaya, and Santosh Panda. 2007. "Development and factor analysis of an instrument to measure faculty attitude towards e-learning." *Asian Journal of Distance Education* no. 5 (1):27-33.

- Mitchell, Betty, and Iris Geva-May. 2009. "Attitudes affecting online learning implementation in higher education." *International Journal of E-Learning & Distance Education/Revue internationale de e-learning et la formation à distance* no. 23 (1):71-88.
- Perrin, Donald G, Elizabeth Perrin, Brent Muirhead, and Senior Editor Muhammad Betz. 2015. *International journal of Instructional Technology Distance Learning* no. 12 (7):1-61.
- Rafiq, Faiza, Shafqat Hussain, and Qaisar Abbas. 2020. "Analyzing students' attitude towards e-learning: A case study in higher education in Pakistan." *Pakistan Social Sciences Review* no. 4 (1):367-380.
- Rhema, Amal, Iwona Miliszewska, and Ewa Sztendur. 2013. Attitudes towards e-learning and satisfaction with technology among engineering students and instructors in Libya. Paper read at Proceedings of the informing science and information technology education conference.
- Rowe, M Frantz. 2012. "J., & Bozalek, V.(2012) The role of blended learning in the clinical education of healthcare students: A systematic review." *Medical Teacher* no. 34 (4).
- Smart, Karl L, and James J Cappel. 2006. "Students' perceptions of online learning: A comparative study." *Journal of Information Technology Education: Research* no. 5 (1):201-219.
- Urbina, Santos, Sofía Villatoro, and Jesús Salinas. 2021. "Self-Regulated Learning and Technology-Enhanced Learning Environments in Higher Education: A Scoping Review." *Sustainability* no. 13 (13):7281.
- Wong, Lily, and Michelle Fong. 2014. "Student attitudes to traditional and online methods of delivery." *Journal of Information Technology Education: Research* no. 13 (1):1-3.
- Yatrakis, Pan G, and Helen K Simon. 2002. "The effect of self-selection on student satisfaction and performance in online classes." *International Review of Research in Open and Distributed Learning* no. 3 (2):1-8.