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Assessing the Awareness and Preparedness of Students and Teachers regarding the Covid-19 Pandemic in Higher Education institutions of Pakistan (A case study of Kohat University of Science and Technology)

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Abstract: *This study examines the COVID-19 awareness and preparedness of faculty and students at Kohat University of Science and Technology. This study aims to assess knowledge levels, adherence to preventive measures, and preparedness for potential outbreaks among students and teachers. The research was carried out at Kohat University of Science and Technology (KUST) with a sample size of 200, comprising 100 teachers and 100 students. Data were obtained via a self-designed questionnaire. The study indicates that teachers possess greater knowledge and readiness than students in areas such as symptom recognition, hygiene habits, university policies, and virtual education. Gender-based statistical analysis reveals significant differences, with males exhibiting higher mean scores. The study suggests recommendations to enhance knowledge dissemination, preparedness, and safety measures in KUST based on the obtained results.*

Introduction

The Covid-19 pandemic has prompted a drastic reorganization of instructional methods, with the higher education sector being hit the most. This study aims to assess the pandemic awareness and preparedness of students and teachers in Pakistan. By understanding the existing knowledge gaps and potential challenges faced, appropriate measures can be implemented to ensure the safety and well-being of all stakeholders. According to Adams-Prassl, Boneva, Golin, and Rauh (2020), The COVID-19 pandemic has exacerbated social and economic inequalities within society's structures. Approximately 95% of the world's student population has been affected by the worst interruption to education in recorded history, as governments around the world have banned face-to-face teaching in schools as part of efforts to contain the disease. Armoed (2021) described that UNESCO data from April 2020, 188 countries shut down their educational institutions as a result of the global pandemic COVID-19, which is expected to afflict almost 1.6 billion students. The ongoing situation has had a notable impact on individuals' emotional well-being, in conjunction with their physical health. The

individual's perspective on life has been modified, resulting in a change in their priorities with regard to their customary pursuits.(Leung, Lam, & Cheng, 2020). The global crisis can only be brought under control if individuals adhere to the preventive measures advised by their healthcare providers, which include frequent hand washing, wearing face masks, avoiding gatherings, and maintaining appropriate physical distancing.(Marčinko, Jakovljević, Jakšić, Bjedov, & Mindoljević Drakulić, 2020). Comprehensive understanding and implementation of knowledge, attitudes, and practises (KAP) at both large and little levels are imperative in preventing the transmission of a contagious disease. The extent to which people take part in such activities will depend on these considerations (Anwar, Nasrullah, & Hosen, 2020). Due to the novelty and ambiguity of COVID-19, an abundance of guidelines and informational resources have been assembled to instruct individuals on preventative measures against infection. Disseminating information and offering guidance to a heterogeneous and potentially underinformed populace poses a challenging undertaking. The COVID-19 pandemic was characterized by confusion, panic, and misunderstanding, which were attributed to unregulated social media and inadequate crisis communication.(Mohamad & Azlan, 2020). Assessing the population's knowledge, attitudes, and practices (KAP) is the initial step in implementing behavioural change initiatives. The purpose of this evaluation is to determine how open a given community is to change. To effectively address knowledge gaps, correct misconceptions, clarify involved practices pertaining to the disease and highlight the necessity of modifying preventive programmes and health awareness initiatives, it is important to provide fundamental information and enhanced understanding. Infectious disorders are just one of many that have been the focus of research using the Knowledge, Attitude, and Practise (KAP) framework. These studies have been published in a number of countries, including Pakistan, with a focus on the current COVID-19 epidemic. They use a variety of study populations and KAP-based study methods. However, much of the research has only involved medical experts, (Hussain, Garima, Singh, Ram, & Tripti, 2020; Kamate et al., 2020; Mohamad & Azlan, 2020; Nour, Babilghith, Natto, Al-Amin, & Alawneh, 2015; Zhong et al., 2020) Consequently, the researchers aim to conduct further comprehensive investigations on the subject matter. This study aims to assess the preparedness and awareness of students and teachers regarding the Covid-19 pandemic in Pakistani higher education institutions. The study focuses on the Kohat University of Science and Technology's students and faculty members.

The Theoretical Framework of the Study

This study is grounded in the socio-cognitive theory, which posits that the interplay between an individual's cognition and their social environment is the foremost factor influencing their behaviour. This theoretical perspective emphasises the importance of interpersonal relationships, cultural standards, and personal beliefs in shaping human behaviour. The Social Cognitive Theory (SCT) developed by Albert Bandura has been utilised to assess the degree of consciousness and readiness among students and educators in response to the COVID-19 pandemic.

The notion emphasises the significance of the interactive relationship among individuals, their surroundings, and their decision-making processes. Individuals' levels of consciousness and readiness can be significantly impacted by their observations of the surrounding environment. Professionals, peers, and media outlets are potential sources of guidance for educators and learners with regard to health-related concerns. The acquisition of knowledge and the capacity to derive insights from past experiences are influential factors in determining one's state of vigilance and preparedness. Self-efficacy refers to an individual's belief in their ability to successfully achieve a desired outcome or perform a specific task. The aforementioned statement denotes

that it serves as an indicator of an individual's perception of their own value or importance. Individuals who possess a robust belief in their ability to achieve desired outcomes, also known as self-efficacy, are inclined to engage in constructive behaviours such as adhering to regulations and acquiring trustworthy information. Self-efficacy is a construct that pertains to an individual's belief in their ability to successfully execute a particular behaviour or task. The aforementioned notion pertains to the assessment of an individual's level of preparedness and confidence in undertaking proactive measures. Outcome expectations refer to an individual's cognitive appraisal of the anticipated results or consequences of their actions. An analysis of the advantages and disadvantages of preventive measures can shed light on the factors that impact individuals' awareness and readiness, including both barriers and incentives. The anticipation of outcomes plays a significant role in shaping individuals' decisions and actions. Several factors, such as institutional policies, information accessibility, and societal customs, may impact an individual's degree of readiness and consciousness. The aforementioned metrics aid in the assessment of interest, comprehension, preparedness, and the probability of success or failure. The phenomenon of modelling, wherein individuals imitate the activities and behaviours of others, is frequently reported. The employment of behaviour modelling has an impact on the level of individuals' awareness and readiness. The concept of "self-regulation" pertains to the cognitive process of monitoring and managing one's own behaviour. Self-regulation techniques demonstrate both preparedness and flexibility.

Social Cognitive Theory is employed by researchers to assess the level of readiness of both students and educators in response to the COVID-19 pandemic. The document offers directives pertaining to initiatives aimed at promoting educational preparedness and awareness.

Expected Outcomes

This study examines the level of awareness and preparedness among students and teachers at Kohat University. This survey assesses the pandemic awareness, preparedness, and knowledge of universities. This study aids policymakers, administrators, and educators in evaluating gaps in knowledge and preparedness and devising focused initiatives to enhance safety and well-being in universities. The study on Covid-19 and higher education in Pakistan will provide insights for future policies and practises. The findings will indicate areas that need enhancement in education, communication, and health and safety measures at the university.

Objectives of the Study

1. To evaluate the extent of comprehension and awareness among students in higher education institutions regarding the Covid-19 pandemic.
2. To assess teachers' understanding and consciousness of the Covid-19 outbreak and its effects on teaching approaches.
3. To compare the level of understanding and knowledge about the Covid-19 pandemic among students and teachers in higher education institutions.
4. To compare the level of understanding and knowledge about the Covid-19 pandemic among male and female students in higher education institutions.

Research Methodology

This study will employ a quantitative approach involving a three-Likert scale questionnaire. The population of the study was all male, and female faculty and students of the Kohat University of Science and Technology. Through random sampling technique 100 teachers and 100 students in which 50 male and 50 female from each category from teachers as well as from students were selected for the study. A self-made questionnaire was administered to a representative sample of students and teachers from various departments of the KUST. The

survey covered the topics such as knowledge about Covid-19, adherence to preventive measures, challenges faced, and perception of institutional preparedness.

Data collection and analysis

The statistical software package SPSS-22 is utilised for the purpose of data analysis. The following section provides an analysis of the data and its subsequent interpretation.

Table 1. Overall responses related to the knowledge about Covid-19

S. No	Statements	Respondents	N	Mean	Std. Deviation
		Group Statistics			
1	I possess knowledge regarding the symptoms of COVID-19.	Teachers	100	2.80	.532
		Students	100	2.34	.901
1.	To mitigate the spread of Covid-19, it is recommended to practise proper hand hygiene and utilise facial coverings.	Teachers	100	2.82	.539
		Students	100	2.25	.716
2.	It is understood that COVID-19 is transmitted through direct physical contact.	Teachers	100	2.68	.695
		Students	100	2.09	.793
3.	I am familiar with the COVID-19 protocols implemented by the university.	Teachers	100	2.77	.584
		Students	100	2.49	.759
4.	The pandemic precautions implemented by my university are deemed sufficient to ensure the safety of students.	Teachers	100	2.65	.657
		Students	100	2.11	.827
5.	The university has the capacity to manage COVID-19 outbreaks.	Teachers	100	2.87	.464
		Students	100	1.94	.814
6.	I am prepared for engaging in online or remote learning in response to the COVID-19 pandemic.	Teachers	100	2.64	.659
		Students	100	2.20	.853
7.	I possess proficiency in utilising digital academic platforms and technologies.	Teachers	100	2.64	.659
		Students	100	2.18	.783
8.	Amidst the pandemic, the academic institution provided commendable support for remote learning.	Teachers	100	2.55	.702
		Students	100	2.25	.821
9.	I endorse the implementation of COVID-19 safety measures on campus.	Teachers	100	2.44	.783
		Students	100	1.66	.867
	Total	Teachers	100	40.2900	3.51991
		Students	100	31.4000	4.42445

Based on the data presented in the table, some notable findings can be observed:

1. Knowledge of COVID-19 symptoms: Both teachers and students possess some level of knowledge regarding the symptoms of COVID-19. However, teachers seem to have a slightly higher mean response (2.80) compared to students (2.34).

2. Importance of hand hygiene and facial coverings: Teachers and students acknowledge the importance of practising proper hand hygiene and using facial coverings to mitigate the spread of COVID-19. Teachers, on average, have a slightly higher mean response (2.82) than students (2.25).

3. Understanding of COVID-19 transmission: Both groups demonstrate

some understanding that COVID-19 can be transmitted through direct physical contact. However, teachers have a higher mean response (2.68) compared to students (2.09).

4. Familiarity with university COVID-19 protocols: Both teachers and students are somewhat familiar with the COVID-19 protocols implemented by the university. Teachers have a slightly higher mean response (2.77) compared to students (2.49).

5. Perceived sufficiency of pandemic precautions: Both groups have a moderate perception of the sufficiency of pandemic precautions implemented by the university. Teachers, on average, have a higher mean response (2.65) compared to students (2.11).

6. Confidence in the university's ability to manage outbreaks: Teachers express more confidence in the university's capacity to manage COVID-19 outbreaks, as indicated by their higher mean response (2.87). In contrast, students seem less confident (mean response of 1.94).

7. Preparedness for online or remote learning: Both teachers and students report a moderate level of preparedness for engaging in online or remote learning in response to the COVID-19 pandemic. Teachers have a slightly higher mean response (2.64) compared to students (2.20).

8. Proficiency in digital academic platforms and technologies: Both groups claim to possess proficiency in utilizing digital academic platforms and technologies, with teachers having a slightly higher mean response (2.64) compared to students (2.18).

9. Perception of academic institution's support for remote learning: Both teachers and students perceive that the academic institution has provided commendable support for remote learning during the pandemic. Teachers have a slightly lower mean response (2.55) compared to students (2.25).

10. Endorsement of COVID-19 safety measures on campus: Teachers express stronger endorsement of COVID-19 safety measures implemented on campus, with a higher mean response (2.44). In contrast, students endorse these measures to a lesser extent, as indicated by their lower mean response (1.66).

Overall, the table provides an overview of the responses from teachers and students on various aspects related to COVID-19. It highlights similarities and differences in their knowledge, perceptions, and attitudes, which can be further analyzed and discussed in the subsequent sections.

Table 2. Qualification base differences between students' and teachers' knowledge about Covid-19

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total	Equal variances assumed	8.687	.004	15.724	198	.000	8.89000	.56538	7.77506	10.00494

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
	Equal variances not assumed			15.724	188.475	.000	8.89000	.56538	7.77471	10.00529

The table presents a comparative analysis of statistics related to teachers and students. The statistical analysis, using Levene's Test, demonstrates a significant difference in variance among the groups (F-value = 8.687, p-value = .004). The t-test results indicate a significant disparity in the mean values between the teacher and student groups, with a t-value of 15.724, p-value of 0.000, and 198 degrees of freedom. The mean difference is 8.89000, with a standard error of 0.56538. The 95% confidence interval reveals a disparity ranging from 7.77506 to 10.00494. Despite equal deviations, there are notable differences in the means between teachers and students. In the absence of equal variances, the degrees of freedom are recalculated to be 188.475, while the t-value, p-value, 95% confidence interval, mean difference, and standard error difference remain unchanged.

Table 3. Gender-based differences related to the knowledge and attitude about Covid-19

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Gender	Equal variances assumed	7.250	.008	10.369	98	.000	8.38000	.80817	6.77622	9.98378
	Equal variances not assumed			10.369	90.150	.000	8.38000	.80817	6.77447	9.98553

The presented table displays the outcomes of an independent samples t-test that compares the variable in question between male and female participants. The statistical analysis of the data using Levene's test for equality of variances reveals that there exists a significant difference in variances between the two groups (F = 7.250, p = .008). This finding suggests that the assumption of equal variances may not be valid. The statistical analysis utilising the t-test for equality of means indicates a noteworthy dissimilarity between males and females (t = 10.369, df = 98, p < .001) under the assumption of equal variances. The results

demonstrate that males exhibit a higher mean (8.38000) in comparison to females. The calculated 95% confidence interval for the difference in means falls within the range of 6.77622 to 9.98378.

Discussion

Results of the study indicate that most of the participants were aware of the knowledge related to COVID-19. The present study's results are consistent with those of a study conducted in Jordan by (Alzoubi et al., 2020) wherein it was observed that the implementation of preventive measures was extensive, including increased frequency of hand hygiene practises and the adoption of facial masks. The results of our study indicate that participants had a less optimistic attitude towards health and were less inclined to adopt preventive measures against potentially fatal infectious diseases, in contrast to the findings of Peng et al.'s study in China (Olum, Chekwech, Wekha, Nassozi, & Bongomin, 2020). The observed incongruity could potentially be ascribed to the contrasting circumstances between developed and developing nations, wherein the latter possess the superior infrastructure and more advanced modes of communication. Nevertheless, our results surpass those of a study carried out in Uganda, which reported that 70% of the participants had exhibited commendable behaviours in relation to COVID-19 (Olum et al., 2020).

Consistent with the findings of the Pakistani study, our research revealed that instructors exhibited elevated levels of proficiency when remunerated at higher rates, were married, and/or possessed greater levels of formal education. (Tariq, Tariq, Baig, & Saeed, 2022)

Conclusion

In conclusion, the analysis indicates that both teachers and students possess some level of knowledge regarding COVID-19 symptoms, understand the importance of hand hygiene and facial coverings, have familiarity with

university protocols, perceive moderate sufficiency of pandemic precautions, and report moderate preparedness for online learning. However, teachers generally exhibit higher mean responses in these areas compared to students. Teachers also have a higher understanding of COVID-19 transmission, express more confidence in the university's ability to manage outbreaks, and claim to possess higher proficiency in digital academic platforms and technologies. Additionally, students endorse COVID-19 safety measures on campus to a lesser extent than teachers. The statistical analysis confirms significant differences between the groups in terms of means and variances. Furthermore, when comparing males and females, there is a significant difference in means, with males exhibiting a higher mean compared to females.

Recommendations

Based on the conclusion of the research paper, here are a few recommendations:

1. The fundamental training needed regarding COVID-19 precautions encompasses knowledge of symptoms, proper hand hygiene techniques, the use of facial coverings, and adherence to the guidelines set forth by the university. Workshops and effective communication facilitate comprehension.
2. It is imperative to provide students with appropriate guidance and resources to facilitate the development of their digital skills. It may be necessary to provide technical assistance, training on the platform, and guidelines.
3. It is recommended to foster a culture of knowledge sharing and collaboration among instructors in order to augment their knowledge, bolster the confidence of university management, and improve their digital skills. Mentorship and peer learning are instrumental in providing support to educators.
4. One approach to addressing student concerns and obstacles is to gather feedback through surveys or focus

groups. Illustrative instances comprise rectifying misunderstandings, concerns pertaining to learners, and directives on safety.

5. There is a need to expand COVID-19 gender research to explore capabilities. Execute interventions grounded in data to enhance adherence to safety protocols and understanding.

By implementing these recommendations, educational institutions can promote a safer and more inclusive environment for both teachers and students, fostering a greater understanding and adherence to COVID-19 safety measures, as well as facilitating effective online learning experiences.

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