RESEARCH ARTICLE

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Experiences of online occupational therapy education during the COVID-19 pandemic at a South African university

ABSTRACT

Introduction: The COVID-19 pandemic resulted in a worldwide shift of academic programmes towards a predominantly online forum. There was therefore a need to explore how students experienced these shifts to ensure optimal learning. This study describes students' experiences of online teaching, learning and assessment and perception of their mental health during the COVID-19 pandemic.

Methods: A descriptive cross-sectional quantitative study was employed using a four-part self-administered online survey. Following a pilot study with 11 community service occupational therapists, the survey was sent to all eligible participants (N=118) with a response rate of 85% (n=91). Data were collected from second to fourth year registered occupational therapy students at the University of KwaZulu-Natal in 2021. Data were analysed descriptively using R Studio Suite.

Results: Over 50% of the students reported a positive online experience. Adequate access to infrastructure enabled optimal online learning. However, students experienced difficulty with structuring self-study time, theoretical application and time allocated for online tests. Additional challenges included stress and time management and managing the increased requirements for self-directed learning. Coping was enhanced by the availability and access to student support services.

Conclusion: The key issues identified in the study need to be addressed to enhance online delivery of the curriculum.

IMPLICATIONS FOR PRACTICE

Online teaching, learning, and assessment in occupational therapy curriculum requires review and adaptation to facilitate optimal student learning

On an online platform, or with digital learning, students require support with aspects such as structuring of their self-directed learning time, personal time and stress management

An understanding of the online experiences of students may assist in the development and revision of curricula that are responsive to students' needs and which may aid in optimal learning outcomes.

INTRODUCTION

The World Health Organization (WHO) declared the coronavirus outbreak (COVID-19), a global pandemic in March 2020[1]. Following this, the president[2] announced that South Africa would go into a nationwide lockdown. With this health crisis, the government initiated precautionary measures and implemented restrictions that mandated all higher educational institutions to shut down. This necessitated a transition from

an environment of conventional face-to-face learning to remote and virtual learning, teaching and assessment for all students. This transitional process posed challenges for all South African Universities, especially in health professional education and training[3,4,5] due to the need to rapidly implement an alternate format of teaching and learning[5].

Additionally, the health science programmes had difficulty developing effective methods to present both theory and practical aspects of courses[6]. The University of KwaZulu-Natal (UKZN) has students from diverse socio-economic, educational, and cultural backgrounds therefore, the authors anticipated that the students' experiences with online teaching, learning, and assessment might vary. Additionally, it was expected that access to laptops, networks, support systems and a conducive learning environment could influence students' online learning experience. Moreover, the students 'learning experiences could vary according to their mental health during the COVID-19 pandemic.

Occupational Therapy students at UKZN enrol in a four-year degree programme that comprises theoretical and practical or fieldwork components. The fieldwork components at non-governmental organisations and government hospitals allow for the integration of theory into practice[7,8]. The delivery of both the fieldwork and theory components required adaptation in response to the challenges posed by COVID-19. There was a need to investigate the UKZN occupational therapy students' experience of teaching, learning and assessment. This study, therefore, aimed to (i) describe the students' experiences of teaching, learning and assessment, (ii) describe the students' mental health experiences, (iii) to explore the barriers and enablers to teaching, learning and assessment of the 2nd-, 3rd- and 4th-year Occupational Therapy students' at UKZN.

Following the lockdown, all of the universities in South Africa resumed their academic programmes at different times, which resulted in delays; UKZN was further delayed due to a lack of infrastructure, as previously noted. At the onset of the pandemic, universities were mostly focused on establishing infection control protocols and attending to the biomedical aspects of COVID-19, rather than the effect the pandemic was having on students mental health[9,10]. Students in Higher Education Institution's (HEIs) experienced increased anxiety[11], due to the effect of the pandemic on their livelihoods; in terms of their families financial well-being, meeting the requirements of their bursaries and maintaining their mental health; more so than their academic work[12]. The students' anxiety was further exacerbated by concerns over having accommodation conducive to learning and gaining access to funding. This is particularly relevant at UKZN as the enrolment policy prioritises students from previously disadvantaged backgrounds[3]. Due to lockdown, the entire UKZN student population had to return home. UKZN's transitional approach was slower as blended learning was not uniformly used prior to COVID-19. There was a need to adapt the curriculum and teaching methods so that the online androgogy maintained the university's standards of producing competent graduates[3]. Occupational Therapy is considered a 'hands-on' profession thus, several adaptations had to be made, by educators, to ensure that professional-specific knowledge and skills were achieved[13]. UKZN offered online student support services to ensure that students' mental health needs were addressed. There was limited accessibility and availability to psychological support for students within their living situations, further heightening mental illness vulnerability[10].

Challenges Experienced

Abbasi[4] highlighted that the drawbacks to online learning included: (i) lack of infrastructure, training, and resources (ii) displeasure with keeping up with the course schedules and deadlines, (iii) psychological distress and mental illness among students, and (iv) lack of effectiveness in acquiring the practical skills due to limited clinical exposure. Additionally, online learning disadvantages include: (i) network instability, (ii) unilateral interaction, (iii) reduced concentration for extended periods, and (iv) lack of communication with teachers[14]. Furthermore, students complained of social isolation[15]. A study conducted in India found that students had reservations about virtual learning. Some of the reported challenges that the students faced included: lack of access to internet facilities, proper interaction and ineffective technology[16]. Similarly, a Chinese study[14] reported unstable digital infrastructure and lack of holistic quality assurance systems negatively influenced online teaching and learning. A Canadian study[17] identified that the increasing demand for access to online resources increases concerns of exploitation of resources and the transformation of our perceptions of education. In Nigeria, reduction of international education, disruption of the academic calendar, teaching and learning gap and loss of workforce impacted HEI during the pandemic[18]. In the South African context, many students from low socio-economic contexts lacked conducive learning environments and were dependent on financial aid, thus required support to gain access to online learning resources and materials, which limited online learning feasibility[6,19].

Advantages of Online Teaching, Learning and Assessment in Higher Education

The transition to the online platform created an opportunity for telehealth[3,20] within health science programmes[13]. Additionally, the more extensive use of online learning management platforms such as Moodle and Blackboard[21] and using newer technologies such as polls, Zoom, voice recorded PowerPoints, and tutorials[21] have allowed HEIs to upgrade education delivery methods to incorporate new emerging learning technologies. The use of new technologies allows for increased participation and the ability to revisit material[10]. The additional planning, infrastructure and technology investment ensured a successful transition to the online platform and has allowed for long-term implementation of online teaching into university curricula[22]. Several advantages included[22] (i) comfortable, educational environment[6,19] (ii) reduced travel time; (iii) improved interactions and (iv) satisfaction with academic performance. Academic staff were forced to re-evaluate the curriculum as the transition to an online platform encouraged "problem-solving, critical thinking and applied understanding, by using a holistic and integrated approach" to teaching, learning and assessment

Table I: Demographic profile of students (n=91)

Characteristics		2nd year n (%) 29 (31.9)	3rd year n (%) 37 (40.7)	4th year n (%) 25(27.5)	Overall n (%) 91 (100%)
Gender	Male	4 (13.8)	0 (0)	2 (8)	6 (6.6)
	Female	25 (86.2)	37 (100)	23 (92)	85 (93.4)
Marital Status	Single	23 (79.3)	25 (67.5)	14 (56)	62 (68.1)
	Married	0 (0)	1 (2.7)	0 (0)	1 (1.1)
	In a relationship	6 (20.7)	9 (24.3)	10 (40)	25 (27.5)
	Engaged	0 (0)	2 (5.4)	1 (4)	3 (3.3)
Funding	Private/self-funding	11 (37.9)	13 (35.1)	6 (24)	30 (33)
	NSFAS	17 (58.6)	21 (56.7)	14 (56)	52 (57.1)
	Bursary	1 (3.4)	3 (8.1)	5 (20)	9 (9.9)
Residence before COVID-19 outbreak	With my family/ at home	16 (55.2)	20 (54)	13 (52)	49 (53.8)
	On-campus housing	6 (20.7)	6 (16.2)	5 (20)	17 (18.7)
	Off-campus; far from campus	5 (17.2)	1 (2.7)	3 (12)	9 (9.9)
	Off-campus; close to campus	2 (6.9)	10 (27)	4 (16)	16 (17.5)
Current Residence	With my family/ at home	16 (55.2)	20 (54.1)	14 (56)	50 (54.9)
	On-campus housing	7 (24.1)	8 (21.6)	4 (16.8)	19 (20.9)
	Off-campus; far from campus	4 (13.8)	1 (2.7)	2 (8)	7 (7.7)
	Off-campus; close to campus	2 (6.9)	8 (21.6)	5 (20)	15 (16.5)

methods and approaches[6,1]. Three main principles applied by higher education institutions to provide support engagement in online learning included, (i) equitable access to online resources through data provision and zero-rated resources, (ii) adapting the academic programme to ensure students meet the clinical requirements of the respective regulatory bodies and (iii) ensuring mental health preservation[3]. Success was achieved by HEIs through[23] (i) identifying the independent needs of students, (ii) understanding the unique personal and academic circumstances, and (iii) supporting student time management. Students returning to the residence or on-campus was the most probable solution for students who could not access information and laptops for online learning[24]. HEI's needed to provide accessible mental health-related services and make the curriculum responsive to the changing times[24]. It is essential to investigate the experiences and perceptions of students to examine the challenges faced to further improve the effectiveness of online learning[15,25].

As a result, the various highlights and challenges experienced by occupational therapy students from a specific and unique context in South Africa during the COVID-19 pandemic were explored. The experiences would provide insight and lessons to improve online learning and well-being amongst students in a rapidly changing HEI.

METHODS

Study Design

This quantitative descriptive study used an online self-administered survey. The survey was designed by the authors using relevant pre-existing literature. The study explored occupational therapy students' experiences on their teaching, learning and assessment experiences and mental health experiences during the COVID-19 pandemic.

Study Setting

The study was located in the province of KwaZulu-Natal, South Africa at the only institution that offers occupational therapy training in the province, namely, the University of KwaZulu-Natal.

Study Population and Sampling

The target population for this study included second-, third- and fourth-year students who were enrolled in the occupational therapy programme at the institution for the 2021 academic year (N=118). This included 37 second-year students, 47 third year and 34 fourth-year students. Non-probability census sampling was used to access all eligible students for the study. The pilot study participants (n=11) included community service occupational therapists who were registered students at UKZN and completed their final year of study in 2020. The minimum response rate required for the study to be reliable was 70% (n=83) students according to the Cronbach's Alpha Interval Estimation[26]. The final sample size was n=91. Of these, 93.45 (n=85) were female, and 6.6% (n=6) were male. The mean age was 19.97 years (range 18-28 years). More than half of the students (54.9%) lived at home during the online education period. National Student Financial Aid Scheme (NSFAS) funded the majority of the students (54.9%) across the years (Table I, above).

Data collection and ethical considerations

Potential participants were sent an invitation via email, which included attachments of the information document, consent form; gatekeepers' permission and ethical approval

Table II: Students' access to resources (n=91) per level of study

Satisfaction		2nd year n (%) 29 (31.9)	3rd year n (%) 37 (40.7)	4th year n (%) 25 (27.5)	p-value (Fischer's)	Overall n (%) 91 (100)
Operational laptop	Agree	27 (93.1)	32 (86.5)	22 (88)	p= 0.808	81 (89)
	Disagree	2 (6.9)	5 (13.5)	3 (12)		10 (11)
Operational smartphone	Agree	27 (93.1)	35 (94.6)	25 (100)	p= 0.729	87 (95.6)
	Disagree	2 (6.9)	2 (5.4)	0 (0)		4 (4.4)
Availability of internet	Agree	18 (62)	27 (73)	17 (68)	p= 0.472	62 (68.1)
	Disagree	11 (38)	10 (27)	8 (32)		29 (31.9)
Substantial data provision	Agree	15 (51.7)	21 (56.8)	17 (68)	p= 0.889	53 (58.2)
	Disagree	14 (48.3)	16 (43.2)	8 (32)		38 (41.8)
Learning environment	Agree	15 (51.7)	25 (67.6)	20 (80)	p= 0.123	60 (65.9)
	Disagree	14 (48.3)	12 (32.4)	5 (20)		31 (34.1)
Ability to work with electricity disruptions	Agree	12 (41.4)	14 (37.8)	11 (44)	p= 0.931	37 (40.7)
	Disagree	17 (58.6)	23 (62.2)	14 (46)		54 (59.3)
Online Resource accessibility	Agree	28 (96.6)	32 (86.5)	20 (80)	p= 0.247	80 (87.9)
	Disagree	1 (3.4)	5 (13.5)	5 (20)		11 (12.1)

(reference HSSREC/00002508/2021). Informed consent was mandatory prior to accessing the survey. A non-pervasive incentive (as approved by the ethics committee) was offered to increase voluntary participation. The survey was hosted on Google Forms. Three areas were investigated using a four-point Likert scale ranging from strongly agree (1) to strongly disagree (4). Section A included seven demographic questions, section B included 24 questions related to teaching and learning experiences at an undergraduate level, section C included 10 questions on experiences of students related to the structure of online assessment and section D included eight questions on students' mental health and coping during the COVID-19 pandemic. The survey was opened for a period of six weeks within the mid-year period of the academic programme (June-July 2021).

Data analysis

The data from Google Forms were imported to a MS Excel spreadsheet in preparation for analysis which was conducted in R Statistical computing software of the R Core Team, 2020, version 3.6.327. The demographic profile data were converted into categorical data, and the remaining three sections were converted into statistical data for interpretation. The categorical variables were described as counts and percentage frequencies. Likert plots were used for handling the multidimensional presentation of the categorical data. To determine the association between categorical variables, Chi-Square Test was used. When the distribution of the cross-tabulations contained an expected value of less than five, Fischer's exact test was applied. The internal consistency of a set of items was assessed using the Cronbach alpha and the item-rest correlation. To improve the Cronbach alpha, items with opposite scale direction were reversed and those suppressing the Cronbach were dropped. All the inferential statistical analysis tests were conducted at 5% levels of significance.

Validity and reliability

This study included the quantitative measures of (i) internal validity; (ii) external validity, (iii) reliability. and (iv) objectivity[28]. Internal validity was measured by achieving a Cronbach alpha >0.729. This including the confounding variable, COVID-19 pandemic, as it impacted the individual's experiences of online teaching, learning, and assessment. The effect modifiers in this study were the different experiences between the second-, third- and fourth-year students; measured using Fisher's p-value, where $p<0.05$. External validity can be achieved through generalisability as findings and deductions from a smaller sample (n=91) can be used to deduce a larger sample[30], however, within the South African context. In terms of reliability, this study aimed to have the same responses each time the test is completed by providing a consistent rating scale throughout all sections (excluding the demographics sections) within the survey. The structure of the questions was stated directly to limit the participant's interpretation of the meaning of the question[31]. Measures of anonymity, confidentiality, and objectivity were used to reduce researcher bias. The survey was developed using pre-existing relevant literature, and the findings were verified with alternate literature pertinent to the South African context. The authors, with support from a consulting biostatistician, completed the analysis of the survey responses.

RESULTS

A total of 91 students (n=29) second year, (n=37) third year, and (n=25) fourth year voluntarily participated in the study. This correlated to a response rate of 85%.

Students access to resources

Most of the students across the years were satisfied with their access to an operational laptop (89%; n=81); operational smartphone (95.6%; n=96); availability to the internet (68.1%; n=62); accessibility to online resources (87.9%; n=80); substantial data provision (58.2%; n=53) and having a conducive learning environment (65.9%; n=60). More than half of the students across the years (59.3%; n=54), found it challenging to work around electricity disruptions such as load-shedding (Table II, above).

Table III: Online learning experiences of students in this study (n=91)

Online learning and teaching experience		2nd year n (%) 29 (31.9)	3rd year n (%) 37 (40.7)	4th year n (%) 25 (27.5)	p-value (Fischer's)	Overall n (%) 91 (100)
Easily transitioned	Agree	16 (55.2)	21 (56.8)	12 (48)	p = 0.608	49 (53.8)
	Disagree	13 (44.8)	16 (43.2)	13 (52)		42 (46.2)
Effective learning in online tutorials	Agree	14 (48.3)	13 (35.1)	8 (32)	p = 0.545	35 (38.5)
	Disagree	15 (51.7)	24 (64.9)	17 (68)		56 (61.5)
Actively participate in online lectures	Agree	20 (69)	27 (73)	13 (52)	p = 0.273	60 (65.9)
	Disagree	9 (31)	10 (27)	12 (48)		31 (34.1)
Understood content	Agree	11 (37.9)	7 (18.9)	6 (24)	p = 0.372	24 (26.4)
	Disagree	18 (62.1)	30 (81.1)	19 (76)		67 (73.6)
Easier learning with visual aids	Agree	25 (86.2)	31 (83.8)	15 (60)	p = 0.258	71 (78)
	Disagree	4 (13.8)	6 (16.2)	10 (40)		20 (22)
Structured self-study time well	Agree	14 (48.3)	19 (51.4)	11 (44)	p = 0.880	44 (48.4)
	Disagree	15 (51.7)	18 (48.6)	14 (56)		47 (51.6)
Easily approached lecturers	Agree	18 (62.1)	25 (67.6)	13 (52)	p = 0.051	56 (61.5)
	Disagree	11 (37.9)	12 (32.4)	12 (48)		35 (38.5)
Easier to study with online resources	Agree	17 (58.6)	19 (51.4)	11 (44)	p = 0.245	47 (51.6)
	Disagree	12 (41.4)	18 (48.6)	14 (56)		44 (48.4)
Easily concentrated	Agree	10 (34.5)	16 (43.2)	8 (32)	p = 0.903	34 (37.4)
	Disagree	19 (65.5)	21 (56.8)	17 (68)		57 (62.6)
Learning style was conducive	Agree	25 (86.2)	18 (48.6)	16 (64)	p < 0.001	59 (64.8)
	Disagree	4 (13.8)	19 (51.4)	9 (36)		32 (35.2)
Grasped and applied content	Agree	18 (62.1)	16 (43.2)	11 (44)	p = 0.281	45 (49.5)
	Disagree	11 (37.9)	21 (56.8)	14 (56)		46 (50.5)
Self-motivated	Agree	16 (55.2)	24 (64.9)	14 (56)	p = 0.910	54 (59.3)
	Disagree	13 (44.8)	13 (35.1)	11 (44)		37 (40.7)
Enough time given for self-study	Agree	16 (55.2)	5 (13.5)	10 (40)	p < 0.001	31 (34.1)
	Disagree	13 (44.8)	32 (86.5)	15 (60)		60 (65.9)
Understood expectations	Agree	18 (62.1)	27 (73)	15 (60)	p = 0.305	60 (65.9)
	Disagree	11 (37.9)	10 (27)	10 (40)		31 (34.1)
Easily applied theory	Agree	13 (44.8)	14 (37.8)	8 (32)	p = 0.451	35 (38.6)
	Disagree	16 (55.2)	23 (62.2)	17 (68)		56 (61.5)
Sufficient experience in clinical fieldwork	Agree	20 (69)	30 (81.1)	18 (72)	p = 0.215	68 (74.7)
	Disagree	9 (31)	7 (18.9)	7 (28)		23 (25.3)
Enhanced learning at clinical site	Agree	23 (79.3)	33 (89.2)	19 (76)	p = 0.678	75 (82.4)
	Disagree	6 (20.7)	4 (10.8)	6 (24)		16 (17.6)

Students' online teaching and learning experience

More than half of the students across the years felt that they transitioned easily (53.8%; n=49), could actively participate in lectures (65.9%; n=60), could approach their lecturers easily (61.5%; n=56) and understood the course expectations (65.9%; n=60). More than half of the students were self-motivated (59.3%; n=54); however, there were a large percentage of students who experienced difficulty in structuring their self-study time well (51.6%; n=47) and found inadequate time provided for self-study (65.9%; n=60). Most of the students found it difficult to concentrate during online learning (62.6%; n=57). Although the students across the years found that their learning style was conducive to online learning (64.8%; n= 59) and found it easier when using online resources (51.6%; n=47) and visual aids (78%; n=71); they felt that the online tutorials were not adequate (61.5%; n=56) and struggled to understand the content (73.6%; n=67). Although the students found it challenging to apply the theory (61.5%; n=56), a large percentage felt they had sufficient clinical experience (74.7%; n=68) and that the clinical experience enhanced their learning (82.4%; n=75). All of Fischer's p-values were above p>0.05, except where the students felt they had enough self-study time and a conducive learning style (p<0.001), indicating a significant difference between years (Table III, above).

Student's online assessment experience

Most of the students across the years (63.7%; n=58) felt that they had enough time to complete assignments and the online calendar was adequate (51.6%; n=47); however, majority of the third year (70.3%; n=26) and fourth year (52%; n=13) students felt that they did not have enough time for

Table IV: Online assessment experience of students in this study (n=91)

Online assessment experience		2nd year n (%) 29 (31.9)	3rd year n (%) 37 (40.7)	4th year n (%) 25 (27.5)	p-value (Fischer's)	Overall n (%) 91 (100)
Sufficient time for assignments	Agree	24 (82.8)	16 (43.2)	18 (72)	p = 0.198	58 (63.7)
	Disagree	5 (17.2)	21 (56.8)	7 (28)		33 (36.3)
Sufficient time for online tests	Agree	18 (62.1)	11 (29.7)	12 (48)	p = 0.108	41 (45.1)
	Disagree	11 (37.9)	26 (70.3)	13 (52)		50 (54.9)
Online test format was well structured	Agree	21 (72.4)	23 (62.2)	19 (76)	p = 0.920	63 (69.2)
	Disagree	8 (27.6)	14 (37.8)	6 (34)		28 (30.8)
Easy access to notes during tests	Agree	14 (48.3)	17 (45.9)	13 (52)	p = 0.992	44 (48.4)
	Disagree	15 (51.7)	20 (54.1)	12 (48)		47 (51.6)
Tempted to access notes during tests	Agree	13 (44.8)	17 (45.9)	18 (72)	p = 0.151	48 (52.7)
	Disagree	16 (55.2)	20 (54.9)	7 (28)		43 (42.3)
Performed better in online tests	Agree	20 (69)	30 (81.1)	21 (84)	p = 0.412	71 (78)
	Disagree	9 (31)	7 (18.9)	4 (16)		20 (22)
Easy submission	Agree	24 (82.8)	32 (86.5)	17 (68)	p = 0.007	73 (80.2)
	Disagree	5 (17.2)	5 (13.5)	8 (32)		18 (19.8)
Computer Literacy	Agree	27 (93.1)	33 (89.2)	24 (96)	p = 0.846	84 (92.3)
	Disagree	2 (6.9)	4 (10.8)	1 (4)		7 (7.7)
Adequate online calendar	Agree	15 (51.7)	15 (40.5)	17 (68)	p = 0.312	47 (51.6)
	Disagree	14 (48.3)	22 (59.6)	8 (32)		44 (48.4)
Online test format was realistic	Agree	17 (58.6)	27 (73)	18 (72)	p = 0.255	62 (68.1)
	Disagree	12 (41.4)	10 (27)	7 (28)		29 (31.9)

online tests. Most of the students across the years (69.2%; n= 63) felt that the online test format was well structured and that the format was realistic (68.1%; n=62), resulting in better test performance (78%; n=71). Most of the students felt tempted to access their notes (52.7%; n=48), especially the fourth-year students (72%; n=18); although 51.6% (n=47) of all the students found that it was not easy to access their notes during the online tests. Most of the students across the years felt that it was easy to submit online assessments (80.2%; n=73) and that they were competent in computer literacy (92.3%; n=84). Fischer's p-values were above the recommendation of p>0.05; except submission of assignments (p= 0.007), which indicates a significant difference in experiences of the ease in submissions between the years (Table IV, above).

Student mental health

Although a large portion of the students across the years felt that they coped well with the unexpected implementation of online learning (56%; n=51) and with balancing their personal lives and studies (65.9%; n=60), the results revealed that the students did not cope with time management and planning (63.7%; n=58) and increased self-directed learning (83.5%; n=76). The students felt that they were informed on how to access online resources for mental health assistance (89%; n=81); however, Fischer's p-value was p=0.021, resulting in a significant difference between the years. Many of the students felt that they did not manage their stress well (58.2%; n=53), despite having good support systems (79.1%; n=72) and being able to build and maintain their relationships (78%; n=71) (Table V, page 61).

DISCUSSION

This study provided insight into students' experiences of teaching, learning, assessment and mental health during their transition onto a complete online platform during the COVID-19 pandemic at one higher education institution in South Africa. The study identified that most students had access to infrastructure and resources such as an operational laptop/ smartphone and Wi-Fi, which facilitated engagement with online learning. Existing literature indicates that adequate internet connections have predominantly been a challenge in rural and marginalised communities[15]. Access to Wi-Fi and provision of data were part of the university's initiative, in collaboration with network service providers, to support students' engagement in their online learning tasks. The partnership with network service providers ensured zero-rated access to learning management systems such as Moodle platform[3]. The students reported that they had access to conducive learning environments, despite more than half of the students living at home and funded by NSFAS, indicating that they belonged to a lower socio-economic context. This finding contrasts with Karthard, Galvaan and Kleintjes[23] assertion that students from low socio-economic contexts lacked conducive learning environments that limited the feasibility of online learning. However, load shedding was a significant factor in hindering online learning. This affected the students' internet connectivity and ability to charge their electronic devices to remain on the learning platforms. This may have exacerbated their stress due to falling behind in their academic programme.

Less than half of the students found the sudden implementation and transition to online learning difficult[15],

Table V: Mental Health experience of students in this study (n=91)

Mental health experience		2nd year n (%) 29 (31.9)	3rd year n (%) 37 (40.7)	4th year n (%) 25 (27.5)	p-value (Fischer's)	Overall n (%) 91 (100)
Coped well with unexpected implementation	Agree	18 (62.1)	21 (56.8)	12 (48)	p = 0.919	51 (56)
	Disagree	11 (37.9)	16 (43.2)	13 (52)		40 (44)
Coped well with time management and planning	Agree	11 (37.9)	10 (27)	12 (48)	p = 0.136	33 (36.3)
	Disagree	18 (62.1)	27 (73)	13 (52)		58 (63.7)
Coped well with balancing studies and personal life	Agree	18 (62.1)	24 (64.9)	18 (72)	p = 0.648	60 (65.9)
	Disagree	11 (37.9)	13 (35.1)	7 (28)		31 (34.1)
Managed stress well	Agree	13 (44.8)	13 (35.1)	12 (48)	p = 0.332	38 (41.8)
	Disagree	16 (55.2)	24 (64.9)	13 (52)		53 (58.2)
Informed on accessing online resources	Agree	28 (96.6)	33 (89.2)	20 (80)	p = 0.021	81 (89)
	Disagree	1 (3.4)	4 (10.8)	5 (20)		10 (11)
Good support system	Agree	22 (75.9)	27 (73)	23 (92)	p = 0.222	72 (79.1)
	Disagree	7 (24.1)	10 (27)	2 (8)		19 (20.9)
Built and maintained friendships	Agree	19 (65.5)	30 (81.1)	22 (88)	p = 0.054	71 (78)
	Disagree	10 (34.5)	7 (18.9)	3 (12)		20 (22)
Coped well with increased independent learning	Agree	5 (17.2)	8 (21.6)	2 (8)	p = 0.648	15 (16.5)
	Disagree	24 (82.8)	29 (78.4)	23 (92)		76 (83.5)

resulting in varied online learning experiences amongst the students[6]. The fourth-year students found the transition to online learning more complex than the rest of the students. This could be a result of time pressure and increased requirements of practical learning in the final year of study. Student's felt that they were able to utilise online resources effectively and efficiently. This could be due to conducive learning styles and approaching lecturers easily regarding the course content, which directly contributed to their positive online learning experience[23]. This can also be attributed to the rapid adaptation and adjustment of lecturers to online learning methods and their ability to load their course content onto various online platforms, which provided easy access for students. Despite the challenges some students experienced in transitioning to online learning, students still reported that they were self-motivated to complete their academic year[3]. More than half of the students felt that they did not receive adequate time for self-study tasks prior to online tutorials; this may have directly impacted their ability to understand and apply content into practice[22], and their engagement with lecturers on the course content. The study found that most of the students had difficulty with regards to self-directed learning; application and understanding of course content and poor time management, especially around their self-study schedule[22]. These authors suggested that being able to manage your time and be an autonomous, self-directed learner are factors necessary for successful distance learning[22].

Challenges in students maintaining their attention for extended periods of time[22] which would have directly impacted their learning and understanding of concepts with incompletion of self-study tasks, ineffective learning during online tutorials, and limited interaction with lecturers and peers during tutorials was noted. This is aligned with the available evidence indicating that students become tired and less enthusiastic about learning content with continuing lectures[24]. Students had difficulty applying the theory taught online into clinical practice, a finding acknowledged in the literature prior to COVID-19. Clinical experience during the pandemic enhanced students' learning and acquisition of professional skills to allow for the development of competent students to implement occupational therapy service delivery[7].

Saleh[32] reported an increased number of assignments given to students during online learning instead of traditional face-to-face learning. Despite this, students have had an overall positive experience in terms of online assignments as they felt they received sufficient time for completion with an uncomplicated submission process. Students found that they performed better in online tests as opposed to traditional face-to-face tests. This could be associated with the easy access to notes during the online tests. To mitigate this, lecturers removed/restricted access to notes from learning platforms to prevent access to notes during test completion. However, students expressed issues over the time allocated for the online tests. This could be as a result of test structure and competency with computer literacy and efficiency. To mitigate this limitation, students commented that they would prefer to have reading time prior to online tests due to the need to read case studies and answer essay questions in a realistic time period[32]. A change in approach to planning and implementing assessments could facilitate enhanced performance and alleviate stress caused by time constraints.

Overall, more than half of the students felt that they did not manage their stress well. This could result from the sudden implementation of online learning, trying to manage their time and increased self-directed learning. Kathard, Galvaan and Kleintjes[23], reported that students' stress during the COVID-19 pandemic was exacerbated by

the additional stress of their family's physical health and financial stressors. Copeland *et al*[3] noted that the COVID-19 pandemic had increased the prevalence of depressive and anxious symptoms among university students. More than half of students felt that they had a good support system, which is essential in alleviating mental stress caused by the implications of the pandemic[11]. The students felt they were informed about accessing online mental health resources, such as the telehealth support platform and student support services, which aim to provide accessible interventions and address their mental health concerns[3]. Additionally, students felt that they were able to build and maintain their friendships easily, however, the comments denoted that due to social isolation, this further impacted the student's anxiety; motivation and coping skills[7].

CONCLUSIONS AND RECOMMENDATIONS

The COVID-19 pandemic brought about a rapid shift in the way that teaching, learning, and assessment were conducted. In this study, we found that overall, students adapted to online learning and had notable experiences at their HEI during the pandemic which has implications for online learning and blended learning approaches in occupational therapy education. In terms of online assessments, students mostly had a positive experience, and this was reflected in their performance. With regards to the student's mental health, they felt that they coped adequately and found that their learning style was conducive. However, issues arose as a result of having increased self-directed learning and in managing their time and stressors. Providing students with adequate online learning infrastructure; online resources; continuous communication, and mental health support will help ensure optimal and effective online learning. Moreover, further consideration is required around learning during tutorials; understanding content; applying theory into practice; and managing self-study time.

A number of specific recommendations have emanated from this study. These include student assessment which may be enhanced by limiting accessibility to learning materials during the test period and in regulating the duration of online tests. Students should be guided on how to optimise self-directed learning, with particular focus on increased structure[10], including study breaks into the daily plan; which will optimise attention and promote stress and time management skills[3,22]. Future research should focus on exploring means to optimise effective online teaching and learning by restructuring of theoretical content of the curriculum and delivery of online tutorials.

Limitations of the study

We acknowledge several limitations of this study. Firstly, exploration of students mental health could not be adequately captured using quantitative methods and therefore in-depth exploration via qualitative methods may provide a more comprehensive and authentic picture of students' mental health and challenges. Thus a future studies could delve deeper into the lived experiences of students. Secondly, the timing of the study can be considered as a limitation as the initial experiences of online learning had passed; most students were already 18 months into this process and it is very likely that the more positive experiences were as a result of initial challenges being addressed. The results may rather then reflect residual challenges that students had experienced.

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Author contributions

Nonjabulo Ndaba, Pragashnie Govender and Deshini Naidoo as supervisors of the study, co-conceptualised the study. Nicole van Heerden, Jessica Heaver, Sonali Rambhuron, and Fariyah Khan, as registered students at UKZN, collected data and completed initial analysis of the data. Pragashnie Govender and Deshini Naidoo assisted in data interpretation, together with Nonjabulo Ndaba. Nicole van Heerden, Jessica Heaver, Sonali Rambhuron, and Fariyah Khan drafted the first version of paper. Pragashnie Govender, Deshini Naidoo and Nonjabulo Ndaba revised the paper and reviewed the final version of the paper.

Conflict of interest

The authors declare no conflict of interest in relation to publication of this article.

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