RESEARCH



The process of obtaining information about COVID-19 among students of physiotherapy and rehabilitation department



Duygu Ilgin Gunduz^{1,3*}, Erhan Secer² and Melda Baser Secer²

Abstract

Background This cross-sectional study was conducted to determine the process of obtaining information about COVID-19 infection among students of the Department of Physiotherapy and Rehabilitation (DPR) by examining the topic of information seeking, information source preference, and factors influencing these preferences.

Methods A total of 495/645 (76.74%) DPR students participated in the study. The data collection form prepared by the researchers was administered between May-June 2022 using face-to-face interview technique. Students' sociodemographic data (age, biological sex, body mass index) and the main topics they researched about COVID-19, information sources, and factors influencing their choice of sources were recorded.

Results Students often preferred to use internet social media (61.00%) and sources they considered reliable (81.40%) to access basic clinical information about COVID-19 (the routes of transmission = 30.30%, the main symptoms = 26.30%, number of cases = 22.60%). While biological sex ($p^{biologicalsex}$) and class level ($p^{classlevel}$) influenced the choice of sources ($p^{biologicalsex}$ =0.011; $p^{classlevel}$:0.0001) and the factors determining this choice ($p^{biologicalsex}$ =0.011-0.022; $p^{classlevel}$ =0.0001-0.005), topic preferences were only influenced by class level ($p^{biologicalsex}$ >0.05; pclasslevel = 0.0001-0.022).

Conclusion DPR students should be supported with reliable and up-to-date social media-based digital content prepared by experts in the field about physiotherapy practice and with easy access to scientific data, even in the late stages of pandemic processes such as COVID-19, when the need for access to information is high due to their professional role.

Keywords Physical therapy, Coronavirus, Information seeking behaviour

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Background

With the declaration of COVID-19 as a pandemic by the World Health Organisation on 11 March 2020 [1], a mandatory process of change has begun, leading to lifestyle changes in many areas of life. In view of this new situation, access to information on COVID-19 has become an unavoidable necessity for all health professionals and students in the field. It has been shown that students from various medical and non-medical professions frequently use the internet/social media as a source of information about COVID-19 [2–9], and that source preferences may be influenced by factors such as biological sex, age, education level, university location and education department [4].

These studies asked about the information source preferences of students from different disciplines and the factors that might influence their choice of source, but did not ask about the topic on which they were most likely to seek information. In line with these findings, Ganesh et al. also highlight the need to consider factors that may influence the online learning processes of DPR students, where social media and similar online tools are frequently used during emergencies such as COVID-19 [10]. In addition, Kloda et al. suggest that identifying the information needs of rehabilitation therapists, who may differ from other clinicians in meeting their information needs in daily clinical practice, is as important as identifying information sources [11].

In addition, there is very limited data on the process of obtaining information during a pandemic for DPR students [12–17]. It is expected that during their education, which mainly consists of practical courses and intensive clinical practice [18], physiotherapy students will be involved in professional activities that require close contact in very confined spaces through direct contact with their hands. In addition, after graduation, they will work as members of a professional group that will form an important part of the rehabilitation team that will carry out acute and chronic rehabilitation programmes for the short and long term effects of such diseases in a pandemic such as COVID-19 [19]. For this reason, our research was conducted to elucidate the process of obtaining information about COVID-19 infection among physiotherapy students by investigating topic preference, information source preference, and factors influencing these preferences.

Methods

Subjects and study design

This cross-sectional descriptive study was conducted on 495 volunteers from a total of 645 (76.74%) students of Manisa Celal Bayar University, Faculty of Health Sciences, DPR between May-June 2022 according to the inclusion criteria. Inclusion criteria were to be a student attending the formal or secondary education programmes of Manisa Celal Bayar University, Faculty of Health Sciences, Physiotherapy and Rehabilitation and Department in the academic year 2021–2022, to be 18 years or older, and to volunteer by signing and approving the informed consent form to participate in the research. Exclusion criteria was was a blank evaluation form despite voluntary participation in the study. There were no blank forms in the study.

Data collection

After obtaining approval from the cal ethics committee of Manisa Celal Bayar University, Faculty of Medicine, Health Sciences Ethics Committee, firstly, students were informed about the research (purpose of the research, process steps, possible risks and benefits, protection of personal data and contact information) and then written consent was obtained from the volunteers (Ethics Committee Approval Number 11/05/2022/20.478.486/1340). Secondly, the data collection form developed by the researchers for this study through the literature review [3-6, 12, 13, 20] was used. The developed draft data collection form was evaluated by the researchers (Graduated from Physiotherapy and Rehabilitation Department, at least 10 years experienced. as physiotherapist/academician/researcher on physiotherapy and rehabilitation field) for all questions by the researchers to include "Appropriateness of grammar?, The clarity and unambiguity of items?, The correct spelling of words?, The correct structuring of the sentences?, Appropriateness of font size and space?, Legible printout?, Adequacy of instruction on the instrument?, The structure of the instrument in terms of construction and well- thought out format?, Appropriateness of difficulty level of the instrument for the participants?, Reasonableness of items in relation to the supposed purpose of the instrument?" questions. And it was aimed to achieve 100% agreement for each question. Modifications and refinements were made according to the comments received to facilitate better understanding and to organise the sequence of questions (Supplementary file 1). The final data collection form was used (Supplementary file 2) [21]. The students' data were collected using the face-to-face interview technique. There were a total of 9 questions in the data collection form, which consisted of 3 main parts. The form took approximately 10 min to complete.

The first part of the data collection form included 6 questions about the socio-demographic characteristics of the student (age (year), biological sex (female/male), body weight (kg), body height (m), body mass index (BMI = weight/height*height = kg/m2), current grade (1-4)/study programme (formal/secondary education)). In the second part, 1 question was asked about the topics they often tried to get information about through

Table 1 Basic characteristics of the students

Variables			X±SD/	n	%
Age (year)	Female		20.68±1.66	345	69.70
	Male		20.64 ± 1.66	150	30.30
	Total		20.67 ± 1.65	495	100.00
	1st Class	Total	19.51 ± 1.68	109	22.00
		Female	19.65 ± 1.27	75	68.80
		Male	19.18 ± 0.83	34	31.20
	2nd Class	Total	20.20 ± 1.77	132	26.70
		Female	20.24 ± 2.03	87	65.90
		Male	20.11 ± 1.13	45	34.10
	3rd Class	Total	21.06 ± 1.43	141	28.50
		Female	20.98 ± 1.34	104	73.80
		Male	21.30 ± 1.66	37	26.20
	4th Class	Total	21.85 ± 1.16	113	22.80
		Female	21.75 ± 1.08	79	69.90
		Male	22 09 + 1 31	34	30.10

n = number, % = percentage

COVID-19. In the third part, 2 questions were used to assess which sources of information on COVID-19 students often preferred to use and what they considered important when selecting information sources. They could choose more than one option and/or write something of their choice under the heading 'other'.

Statistical analysis

All collected data were entered into Microsoft Excel, checked for errors to ensure accuracy, and then imported into IBM SPSS Statistics 26.0 for statistical analysis of the data. Primarily, descriptive statistical analysis was used to summarise the collected sample characteristics and outcomes, using frequencies (n) and percentages (%) for categorical variables, and means and standard deviations

(SD) for numerical variables. Chi-square and Fisher's exact tests were used to assess associations between categorical variables (p^{biologicalsex} for biological sex; p^{classlevel} for class level). The Bonferroni-adjusted p-value was used to test for significant differences within variables. For this purpose, adjusted_z_values were first determined, then chi-square was calculated by multiplying adjusted_z_values (z*z), p^{withoutBonferroni} value was calculated SIG.CHISO (chi-square, degrees of freedom), finally the Bonferroniadjusted p-value was taken as p^{withBonferroni} value and calculated by multiplying p^{withoutBonferroni} value by number of analyses. For post-hoc tests following a chi-square, we use what is known as the Bonferroni adjustment. Like the post hoc tests used in ANOVA, this adjustment is used to counter the problem of type I error that occurs when multiple comparisons are made. P < 0.05 was accepted as a significant difference.

Results

Basic characteristics

Of the 645 students who met the inclusion criteria, 495 (76.74%; female/male: n = 345/150, %= 69.70/30.30, mean age 20.67 ± 1.65 years (Table 1) and mean body mass index 22.03 ± 3.67 kg/m²) were included in the study.

Topics about which students prefer to obtain information

It was observed that the main topics about COVID-19 infection that students most wanted to know about were "What are the routes of transmission?", "What are the main symptoms?" and "What is the number of cases and the spread of the disease?" (Table 2). There was no statistical difference between the groups according to biological sex (p^{biologicalsex} > 0.05). It was observed that there was a difference in the following topics about which

Table 2 Distribution of topics about which students prefer to obtain information

			Not Preferred			
Торіс	n	%	n	%	<pre>p^{biologicalsex}</pre>	p ^{classlevel}
What is it?	64	12.90	431	87.10	0.447	0.0001*
Who is in the at-risk group?	73	14.70	422	85.30	0.973	0.0001*
What are the routes of transmission?	150	30.30	345	69.70	0.170	0.467
How long is the incubation period?	44	8.90	451	91.10	0.819	0.022*
Which isolation method should be applied to whom and how?	77	15.60	418	84.40	0.368	0.976
What is the number of cases and the spread of the disease?	112	22.60	383	77.40	0.989	0.232
What is the diagnostic method and how is it used?	81	16.40	414	83.60	0.683	0.725
What are the main symptoms?	130	26.30	365	73.70	0.231	0.068
How is its progression?	48	9.70	447	90.30	0.610	0.0001*
What are the complications?	79	16.00	416	84.00	0.802	0.004*
Is there any treatment? What are the methods of treatment? (Drugs, vaccines, physiotherapy, etc.)	107	21.60	388	78.40	0.185	0.004*
What protective measures should be taken?	70	14.10	425	85.90	0.237	0.706
Which protective equipment should be used? In which cases? How should it be used?	18	3.60	477	96.40	0.200	0.014*
What are the conditions for quarantine and social isolation?	44	8.90	451	91.10	0.359	0.618
n - number 0/ - nercontage, p ^{Diologicalsex} and p ^{classlevel} , chi square analysis and feber's overt test, p ^{Diologicals}	sex lice.				L	· · · · · · · · · · · · · · · · · · ·

n = number, %= percentage; p^{biologicalsex} and p^{classlevel}: chi-square analysis and fisher's exact test; p^{biologicalsex} differences for biological sex; p^{classlevel}= differences for class level; *= p < 0.05 = Statistical significance level

the students tried to obtain information about according to class level: definition of COVID-19 (pclasslevel= 0.0001), "Who is in the risk group?" (p^{classlevel}= 0.0001), "How is its progression?" ($p^{classlevel} = 0.0001$), the existence and possibilities of treatment (p^{classlevel}= 0.004) and "Which protective equipment should be used? In which cases? How should it be used?" $(p^{classlevel} = 0.014,$ $p^{withoutBonferroni} = 0.049; p4 = 0.297)$, incubation period $(p^{classlevel} = 0.022; p^{withoutBonferroni} = 0.029; p4 = 0.176)$ and complications (p^{classlevel}= 0.004; p^{withoutBonferroni}= 0.038; p4=0.230). According to class level, 3rd and 4th year students stated that they tried to get more information about the definition of COVID-19 than 2nd year students $(p^{withoutBonferroni} = 0.007, p4 = 0.039), 3rd year students$ stated that they tried to get more information about who would be in the risk group than 1st and 2nd year students $(p^{withoutBonferroni} = 0.00035, p4 = 0.002)$, and that they tried to get more information about the progression of the disease than 1st and 2nd year students (pwithoutBonferroni= 0.002, p4 = 0.014). For the questions " Is there any treatment? What are the methods of treatment? (drugs, vaccines, physiotherapy, etc.)", 4th year students were more likely than 1st and 2nd year students to try to obtain more information (p^{withoutBonferroni}= 0.007, p^{withBonferroni}= 0.039; Tables 2 and 3).

Students' sources of information

It was observed that students obtained information mainly through internet social media (WhatsApp, Twitter, Instagram, Facebook, etc.), internet search engines (Google, Yahoo, etc.), television, the official website of the Ministry of Health (MOH) and print media (Table 4). According to biological sex, females were

 Table 3
 Distribution of topics by class level

found to use the official MOH website more than males (female: n = 86/259-%= 24.90/75.10; male: n = 22/128-%= 14.70/85.30; p^{biologicalsex}= 0.011). According to class level, television (p^{classlevel}= 0.0001), print media tools (p^{classlevel}= 0.0001) and the choice of health-related search engines ($p^{classlevel} = 0.0001$), which are among the sources of information they prefer to use, are associated with class level. It was found that 3rd year students preferred to use television ($p^{withoutBonferroni} = 0.003$, p4 = 0.020) more than 2nd year students, and also that 3rd and 4th year students preferred to use print media (for 2nd year students, p^{withoutBonferroni}= 0.001, p4=0.007, for 3rd year students, $p^{\text{withoutBonferroni}} = 0.007$, p4 = 0.039) more than 2nd vear students and 3rd year students compared to 1st year students. And 4th year students preferred to use health related search engines ($p^{withoutBonferroni} = 0.001$, p4 = 0.007) more than 1st and 2nd year students (Tables 4 and 5).

Factors considered by students when choosing information sources

It was observed that the issues that students often paid attention to when choosing information sources were: the reliability of the source, whether the information was updated, whether the source was an official institution, and whether it was easily accessible (Table 6). According to biological sex, it was found that women pay more attention to the reliability of the source (female: 290/55-%= 84.10/15.90; male: 113/37-%= 75.30/24.70; p^{biologicalsex}= 0.022) and men pay more attention to the fact that the source is economical (female: 10/335-%=2.90/97.10; male: 12/138-%= 8.00/92.00; p^{biologicalsex}= 0.011). According to class level, it was observed that there was a relationship between class level and the following

		Preferre	ed	Not Prefe	rred		
Торіс	Class	n	%	n	%	p ^{withoutBonferroni}	p ^{withBonferroni}
What is it?	1	14	12.80	95	87.20	1.000	6.000
	2	5	3.80	127	96.20	0.003*	0.020*
	3	30	21.30	111	78.70	0.007*	0.039*
	4	15	13.30	98	86.70	0.100	5.998
Who is in the at-risk	1	12	11.00	97	89.00	0.696	4.177
group?	2	11	8.30	121	91.70	0.124	0.743
	3	36	25.50	105	74.50	0.0004*	0.002*
	4	14	12.40	99	87.60	0.887	5.323
How is its progression?	1	2	1.80	107	98.20	0.022*	0.133
	2	8	6.10	124	93.90	0.465	2.787
	3	25	17.70	116	82.30	0.002*	0.014*
	4	13	11.50	100	88.50	0.921	5.527
Is there any treatment?	1	19	17.40	190	82.60	0.696	4.177
What are the methods of	2	21	15.90	111	84.10	0.307	1.841
treatment? (Drugs, vac-	3	29	20.60	112	79.40	0.984	5.903
cines, physiotherapy, etc.)	4	38	33.60	75	66.40	0.007*	0.039*

n = number. %= percentage; p^{withoutBonferroni} and p^{withoutBonferroni}: one-way ANOVA test; p^{withoutBonferroni}: without Bonferroni</sup> adjustment; p^{withoutBonferroni} = with Bonferroni</sup> adjustment; *= p < 0.05 = Statistical significance level

Table 4 Distribution of sources that students prefer to obtain information from

	Preferred		Not Pr	eferred		
Information Source	n	%	n	%	p ^{biologicalsex}	p ^{classlevel}
Television	191	38.60	304	61.40	0.860	0.0001*
Media (printed publications such as newspapers and magazines)	64	12.90	431	87.10	0.909	0.0001*
Media (clinical guidelines. scientific articles)	53	10.70	442	89.30	0.213	0.148
Internet social media (WhatsApp. Twitter. Instagram. Facebook. etc.)	302	61.00	193	39.00	0.618	0.600
Internet search engines (Google. Yahoo. etc.)	202	40.80	293	59.20	0.660	0.165
Internet - You Tube video	47	9.50	448	90.50	0.558	0.456
Official website of the Ministry of Health	108	21.80	387	78.20	0.011*	0.067
Health-related search engines on the Internet (Pubmed. etc.)	28	5.70	467	94.30	0.530	0.0001*
Health workers	58	11.70	437	88.30	0.861	0.381
Radio	5	1.00	490	99.00	1.000	0.059
Brochures	4	0.80	491	99.20	1.000	0.070
Banners	6	1.20	489	98.80	0.673	0.080
Notice boards	2	0.40	493	99.60	0.515	0.352
Warning/information sign	3	0.60	492	99.40	1.000	0.446
Classroom	4	0.80	491	99.20	0.588	1.000
Webinar	1	0.20	494	99.80	1.000	1.000
Training Seminars	4	0.80	491	99.20	0.588	0.419
Faculty Members	5	1.00	490	99.00	1.000	0.872
Family members	4	0.80	491	99.20	0.320	0.263
Friends in social environment	11	2.20	484	97.80	0.742	0.197
Physiotherapists in internship unit	3	0.60	492	99.40	0.557	0.501
Other healthcare workers in internship unit	1	0.20	494	99.80	0.303	0.220

n=number, %= percentage; p^{biologicalsex} and p^{classlevel}: chi-square analysis and fisher's exact test; p^{biologicalsex} differences for biological sex; p^{classlevel}= differences for class level; *= p < 0.05 = Statistical significance level

aspects of the source taken into account when selecting the information source: reliability ($p^{classlevel} = 0.0001$), easy accessibility ($p^{classlevel} = 0.0001$), whether it was economic or not ($p^{classlevel} = 0.005$) and whether it was up-to-date ($l_p^{classlevel} = 0.002$, $p^{withoutBonferroni} = 0.009$; p4 = 0.054). It was observed that 3rd and 4th year students, compared to 2nd year students, paid attention to the reliability of the information source ($p^{withoutBonferroni} = 0.002$, p4 = 0.014), and 4th year students, compared to 1st and 2nd year students, paid attention to the easy accessibility of the source ($p^{withoutBonferroni} = 0.0001$, p4 = 0.0001). In addition, 3rd year students preferred the source to be inexpensive compared to 2nd year students ($p^{withoutBonferroni} = 0.003$, p4 = 0.020; Tables 5 and 6).

Discussion

The results of our descriptive study of the process of obtaining information about COVID-19 have showed that physiotherapy students have often attempted to access basic clinical information about COVID-19, have frequently used the internet and social media as sources of information, and have preferred to access reliable sources. In addition to the data from previous studies, our results have shown that while biological sex and class level influence the selection of sources and the factors that determine this selection, the topic choice preferences are only influenced by the class level factor.

Topics on which students prefer to obtain information

The level of knowledge [12–14, 16, 17], awareness [12, 14], attitudes [12, 16, 17], behaviours [17], precautions [17] and perceptions [13] of DPR students about COVID-19 has been determined using online surveys and their need for information has been identified [15]. The above mentioned studies include results of online surveys conducted during different periods of the pandemic, they examined physiotherapy students in different classes and did not question the effect of the biological sex factor. Furthermore, to the best of our knowledge, our study is the first to investigate what topics DPR students frequently need information about during the pandemic and to analyse whether there is a difference in terms of biological sex and class level. The limited number of studies evaluating physiotherapy students show that students have good knowledge of COVID-19 and that their awareness is high [14, 17]. On the other hand, Mbada et al. reported that physiotherapy students' awareness was high but their knowledge of the physiotherapist's role in the pandemic was low [12], and Amoudi found that physiotherapy students' knowledge was good but their attitudes were low [16]. Our results showed that although we collected data during the gradual recovery phase of the pandemic, students were often sought basic clinical information about COVID-19, but were less likely to seek information about prevention methods and treatment

Table 5 Distribution of sources and factors by class level

		Preferred		Not Preferred			
Source	Class	n	%	n	%	p ^{withoutBonferroni}	p ^{withBonferroni}
Television	1	42	38.50	67	61.50	1.000	6.000
	2	33	25.00	99	75.00	0.003*	0.020*
	3	70	49.60	71	50.40	0.017*	0.100
	4	46	40.70	67	59.30	0.969	5.815
Media (printed publications such as newspapers and magazines)	1	6	5.50	103	94.50	0.080	0.480
	2	4	3.00	128	97.00	0.001*	0.007*
	3	30	21.30	111	78.70	0.007*	0.039*
	4	24	21.20	89	78.80	0.029*	0.176
Health-related search engines on the Internet (Pubmed. etc.)	1	3	2.80	106	97.20	0.522	3.133
	2	2	1.50	130	98.50	0.124	0.743
	3	8	5.70	133	94.30	1.000	6.000
	4	15	13.30	98	86.70	0.001*	0.007*
Reliable	1	84	77.10	25	22.90	0.639	3.835
	2	93	70.50	39	29.50	0.002*	0.014*
	3	125	88.70	16	11.30	0.080	0.480
	4	101	89.40	12	10.60	0.100	0.600
Easily accessible	1	20	18.30	89	81.70	0.029*	0.176
	2	24	18.20	108	81.80	0.009*	0.054
	3	48	34.00	93	66.00	0.639	3.835
	4	56	49.60	57	50.40	0.0001*	0.000*
Economic	1	2	1.80	107	98.20	0.522	3.133
	2	2	1.50	130	98.50	0.307	1.841
	3	14	9.90	127	90.10	0.003*	0.020*
	4	4	3 50	109	96 50	0.969	5815

n = number. %= percentage; p^{withoutBonferroni} and p^{withBonferroni}: one-way ANOVA test; p^{withoutBonferroni}: without Bonferroni</sup> adjustment; p^{withoutBonferroni} = with Bonferroni</sup> adjustment; *= p < 0.05 = Statistical significance level

Table 6	Factors students	consider when	choosing ar	1 information	source

	Consid	ered	Not Co	nsidered		
Factor	n	%	n	%	p ^{biologicalsex}	p ^{classlevel}
Reliable	403	81.40	92	18.60	0.022*	0.0001*
Up to date	272	54.90	223	45.10	0.501	0.002*
Official institution	151	30.50	344	69.50	0.709	0.077
Easily accessible	148	29.90	347	70.10	0.856	0.0001*
Health worker	37	7.50	458	92.50	0.411	0.095
Visual information source (video. photo. diagram. graph. etc.)	35	7.10	460	92.90	0.361	0.639
Economic	22	4.40	473	95.60	0.011*	0.005*
Writable/readable information source	15	3.00	480	97.00	1.000	0.588
Auditory information source (sound recording, etc.)	7	1.40	488	98.60	1.000	0.388
Application/experiment	2	0.40	493	99.60	0.515	0.048
Other	1	0.20	494	99.80	1.000	0.220

n=number, %= percentage; p^{biologicalsex} and p^{classlevel}: chi-square analysis and fisher's exact test; p^{biologicalsex} differences for biological sex; p^{classlevel}= differences for class level; *= p < 0.05 = Statistical significance level

options, including physiotherapy and rehabilitation practices. Furthermore, in our study, we did not find any biological sex differences in the choice of topics in our study. However, it was observed that our students preferred printed media, health-related search engines and television as sources of information with increasing class level, and it was observed that the students in the upper classes sought information on "Is there any treatment? What are the treatment methods? (drugs, vaccines, physiotherapy, etc.)" at a higher rate than basic clinical issues such as the definition of the disease. The results of these studies and our research suggest that attention should be paid to increasing the awareness of DPR students about the role of the physiotherapist in COVID-19 or any other pandemic, physiotherapy and rehabilitation practices as a treatment option.

Sources of information for students

Many studies of medical and non-medical students have shown that students frequently use the internet and social media as a source of information about COVID-19 [2-9]. Similar results were found in studies of DPR students [12, 13, 16]. All these studies were often conducted during the first outbreak of the pandemic. Our data, on the other hand, were collected during the gradual recovery steps after the pandemic, and also show that the use of social media/internet is the most frequently consulted source of information during this period. This was followed by television, the official MOH website and print media. Our research results also show that the biological sex difference is not effective in the choice of topic to search for, but females prefer to use the official MOH website as a source of information more than males. It was emphasised that the importance of social media and the process of digitalisation should not be ignored. Considering the problem of social media and the increasing information overload, we believe that it is necessary to ensure that academics, experts and professional associations share professional information through the social media channels that physiotherapy students frequently access, and that specific digital content should be developed for the social media channels, or that students should be directed to quality professional information exchange channels through this channel, and that the biological sex factor should be taken into account.

Our study found that they used scientific sources of information less frequently than other sources. In line with this finding, Tonak et al. showed that DPR students used the World Confederation for Physical Therapy website (never used: 64.60%) and the internet search engines Pubmed and Pedro (often used: 12.30%) at very low rates [17]. In their study of medical and non-medical undergraduate and postgraduate students, Olaimat et al. reported that 30.70% of males, 22.10% of females, 35.30% of postgraduate students and 23.00% of undergraduate students used scientific websites and articles [4]. Similar to the results of Olaimat et al., the use of scientific sources in our study also increased with increasing class level. This rate reaches 13.30% in year 4. While Olum et al. showed that medical students benefited from scientific sources by 39% [9], Yakar et al. showed that medical students benefited from scientific articles by 21.29% and from clinical guidelines by 19.62% [20]. These rates were higher than in our study group (health-related search engine 5.70%, clinical guideline/scientific article 10.70%). The increase in this rate with increasing class level may be related to the fact that 1st and 2nd year students did not participate in clinical practice during the pandemic, and in studies with medical students, the students continued their clinical studies. This finding suggests that participation in clinical practice should be considered as a factor influencing the choice of information source. In addition, it was felt that DPR students' awareness of search engines, accessing and following websites related to their specialty should be improved, and that plans should be made to facilitate this procedure in relation to access to scientific data, taking into account biological sex and class factors.

Factors students consider when choosing information sources

Studies conducted during the early stages of the pandemic reported that students often preferred to use information sources that they considered reliable [5, 22] and up-to-date [3, 6, 8]. It was also reported that medical and non-medical students often obtained information from the official MOH website, because they found it reliable [5, 17, 22]. On the other hand, Mbada et al. reported that physiotherapy students chose the World Health Organization as the most reliable source [12], while our study, like Tonak et al., reported that MOH sources [17] were frequently used. In addition to previous data, our study showed that women were more likely to consider the reliability of the source, while men were more likely to consider economic access. As the class level increased, the reliability of the source, as well as its accessibility and affordability, were among the issues that students considered. All of the above data should be considered as a natural indicator of students' search for reliable and up-to-date information from the first period of the pandemic. In addition to the results of previous studies, it is also worth noting that they also pay attention to the easy accessibility and affordability of the resource. And it reminds us that biological sex and class level parameters should be taken into account in the development of students' social media and health literacy at all stages of the pandemic, from the very early to the late stages.

Limitations

Our study has a number of limitations. Firstly, it is difficult to generalise as the data in the study are from DPR students at a single university. Secondly, when interpreting the results of this study, it is important to consider the potential limitations of self-reported data-collection tool, the results of which may be affected by reporting bias. However, when interpreting the data, it should be borne in mind that our study is, to our knowledge, the first to examine in detail the process of accessing information among DPR students in the context of a pandemic, and that, unlike other studies in the literature reporting on this topic among DPR students, our study is based on data obtained using the face-to-face interview technique rather than the use of online questionnaires, and that our study does not include the limitations of online surveys. Thirdly, with our research, we have presented the factors affecting the subject, source and source selection with descriptive data only, but we think that in future studies, the factor loads of the factors affecting the information acquisition process should be revealed by regression analysis and how the mataphoric perception is in this regard should be examined by qualitative analvsis methods. In addition, the fact that the data collection form used in this study was not evaluated in terms of face (Cohen's Kappa Index and Fleiss' kappa value), content, criterion-related and construct validity can be considered as another limitation of the study. However, it should be kept in mind that the percentage of agreement, which is an important indicator in terms of face validity, was aimed to be 100% between the researchers for each question and the final form was used after being reshaped according to the form editing suggestions. Lastly, we think that the data obtained will contribute to the literature in terms of revealing the information acquisition process for the healthcare team's need to obtain information in a short time in COVID-19-like pandemic processes and developing effective and reliable professional information resources. However, our research results include only physiotherapy students, and it will be important to reveal the attitudes of physiotherapists working in clinical and research areas in future studies. In addition, the health team should be considered as a whole and the similarities and differences in terms of the needs of the team members in the process of obtaining information on a subject should be determined.

Conclusion

Our study results show that students' efforts to access reliable, up-to-date, easily accessible, affordable and relevant resources related to their professional roles should be supported by considering biological gender and class factors. In addition, the need to create social mediabased digital content prepared by experts in the field and professional organizations and to facilitate their access to scientific resources through social media was identified. It comes to mind that curricula should be supported with lectures on how to access such resources, what the resources are, the technical rules and special techniques of searching online at each grade level and at each of the pre and post-clinical periods. We think that future research should be conducted to determine how the process of information acquisition affects the clinical decision-making process of students and graduates in the healthcare team.

Abbreviations

DPR	Department of Physiotherapy and Rehabilitation
MOH	Ministry of Health
n	Number
SD	Standard deviation
ANOVA	Analysis of variance

Supplementary Information

The online version contains supplementary material available at https://doi.or g/10.1186/s12909-025-06764-0.

Supplementary Material 1: The detailed question agreement form for the data collection form is given as a supplementary file (Supplementary file 1)

Supplementary Material 2: The English version of the data record form is provided as a supplementary file (Supplementary file 2)

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Author contributions

D.I.G., E. S. and M.B.S. designed the study, collected and analyzed data, wrote and revised the manuscript.

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Data availability

The data used during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

This research was approved by the local ethics committee of Manisa Celal Bayar University, Faculty of Medicine, Health Sciences Ethics Committee, firstly, the students were informed about the research and then written consent was obtained from the volunteers (Ethics Board Approval Number 11/05/2022/20.478.486/1340).

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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