

Innovations

Perceptions and Utilization Practices of Internet as a Source of Seeking Academic Related Health Information among Dental Students in Nellore - A Cross Sectional Study

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Abstract:

Introduction: Owing to the revolution in technology, the internet has become an important aspect of people's lives. Recently, Internet based academic related health information had become more popular among students in providing an incomparable information resources during learning and research. **Aim:** This study was aimed to assess perceptions and utilization practices of internet as a source of seeking academic related health information among Dental students in Nellore. **Materials and methods:** A descriptive cross sectional study was conducted from October to November 2021 on 285 dental students of Nellore city of Andhra Pradesh. A specially designed 14 item validated questionnaire was used to collect the data. SPSS version 22.0 was used for the statistical analysis. Fisher exact test was used to analyse the data p value < 0.05 was considered statistically significant. **Results:** A total of 285 dental students filled the questionnaire, majority of the dental students use internet for seeking academic related health information. Statistically significant difference was found (p < 0.05) between Postgraduates, Undergraduates and Interns for responses on the questions related to knowledge of obtaining academic related health information. No statistical significant difference was observed when compared postgraduates with undergraduates and Interns in finding academic related health information in Internet. **Conclusion:** This study concluded that majority of the dental students utilizes internet for seeking academic related health information.

Keywords: Internet, Health information, Dental students, Education, Academic, Internet

Introduction:

Internet is the global systems of interconnected computer network that uses the internet protocol suite to communicate between networks and devices and it is a basic technology in the development of information technology ^[1, 2].

Now, the Internet had become an important tool and required by the knowledge-based society to know about the contemporary for information management, information search, communication, research and learning ^[3]. The use of internet technology will make it easier for people to obtain several of information and the latest information quickly and effectively as especially to students^[4].

Internet is broadly increasing towards Health information search in imparting medical education for students in their academic endeavours ^[5]. Its use as a corresponding tool for understanding health problems or improving health care interventions related to educational field for students. Majority of internet users are university students compared to general population.

Internet is proving to be an incomparable information resource for learning and research and also improving its delivery and every form of information resource that is needed to support academics is available on the Internet. So it has become an important tool to the students ^[7-9].

Internet based tools are easily accessible and can assist health information to students who don't know the answer to every question ^[10]. In terms of disease burden, young people are among the most affected and facing difficulties in accessing traditional health services in theory, the internet offers them confidential and convenient access to an unprecedented level of information about a

diverse range of subject ^[11, 12]. For dental students, many of the tools that support and transmit dental education and health research are now available online ^[13-15]. They are e-book, e-journals, subject databases, academic and professional websites with numerous educational resources for information and decision making ^[16-18]. To our knowledge some studies has reported that searching behaviour of dental students in seeking academic related health information ^[19-20].

So the aim of the current study was to know the Perceptions and utilization practices of internet as a source of seeking academic related health information among Dental students in Nellore.

Materials and Methods:**Ethics:**

Ethical approval for the study was obtained from the Institutional Ethics Board of Narayana Dental College and Hospital, Nellore. Informed consent was obtained from all the study participants.

Study design:

A descriptive cross - sectional study was conducted to assess perceptions and utilization practices of internet as a source of seeking academic related health information among Dental students in Nellore, Andhra Pradesh. The study sample consisted of Undergraduate, Interns and Postgraduates dental students. This study was conducted for a duration of two months (60 days) from October 2021- November 2021. A 14 - item self - administered questionnaire designed for this study was validated by checking content validity before conduction of pilot survey using content validity index with Davis criteria ^[22]. SCVI scores for validity is 0.94.

A Pilot survey was conducted in Narayana dental college, Nellore, Andhra Pradesh to assess the reliability of the questionnaire by using test – retest design. It was given to 50 subjects, twice with seven days apart, who were not included in the main study. Cohen's Kappa value was found to be 0.85. A validated 14 -item questionnaire consisted of two parts. Part A comprises demographic details, Part B contains questions regarding the knowledge, perceptions, utilization practices and trustworthiness of the academic related health information in internet. The questionnaire was distributed to 300 dental students through google forms of which 285 students responded to the questionnaire and the response rate was 95%

Inclusion criteria:

Dental students who responded to the questionnaire was included in the study.

Exclusion criteria

Dental students who didn't responded to the questionnaire were excluded from the study.

Statistical analysis:

Statistical analysis was performed using SPSS software programme version 22.0. The data was analyzed using Fisher exact test. The level of statistical significance was set at $p < 0.05$.

Results:

A total of 285 dental students completed the questionnaire, 80% were females and 20% were males, Out of 285 dental students individual response rates for the Postgraduates, Undergraduates and Interns were 6.3%, 90.2% and 3.5% respectively. **(Table 1)**

Table 1: Distribution of study participants according to demographic details

Variables	n(%)
Gender	
Males	57 (20)
Females	228 (80)
Total	285 (100)
Qualification	
Postgraduates	18 (6.3)
Undergraduates	257 (90.2)
Interns	10 (3.5)
Total	285(100)

Table 2 shows that majority of the study participants used internet for health information and there is no statistical significant difference among the study participants in the usage of internet for health information related to academics, and during solving health issues and to gain knowledge. 50% post graduates use internet every day for academic purpose when compared with Interns and Undergraduates, 60% of the interns and 27.2% of Undergraduates used internet for health information 2-3 times a week when compared to post graduates related to their academics. Majority of the health information seeking is done by using smart phones and the difference was statistically significant. ^{Fig 1}

Table2: Distribution of study participant's responses to the questionnaire items on academic related health information

Items	Qualification			
χ^2	P			
		Postgraduates, n (%)	Undergraduates, n(%)	Interns, n (%)
Do you use internet for health information?				
Yes		18 (100)	240 (93.4)	10 (100)
No		0	17 (6.6)	0
				1.97 0.79

If yes, for what purpose do you commonly use Internet?

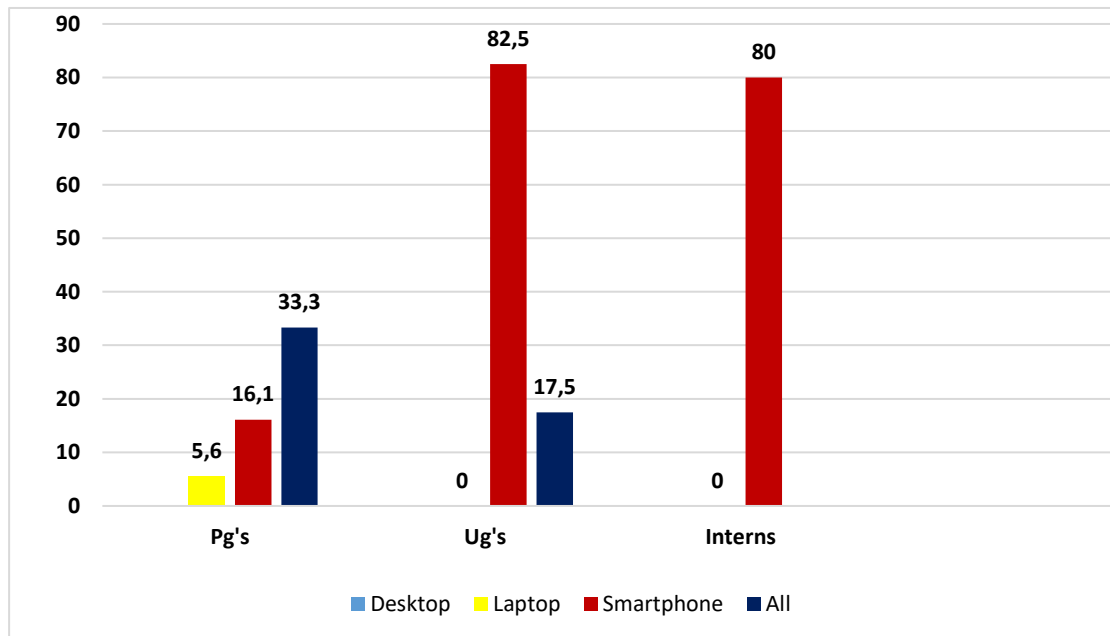
Academic purpose	1 (5.6)	33 (12.8)
To solve health issues	1 (5.6)	6 (2.3)
To gain knowledge	1 (5.6)	22 (8.6)
All of the above	15 (83.3)	196 (76.3)

How often do you use internet for Health information related to your academics?

Every day	9 (50)	54 (21)	1 (10)	14 (0.6)
2-3 times a week		4 (22.2)		70 (27.2)
Once a week	2 (11.1)	69 (26.8)	2 (20)	
Once or twice a month	3 (16.7)	64 (24.9)	1 (10)	

From which type of device do you access internet for Health information?

Desktop	0	0	0	18.1
Laptop	1 (5.6)	0	0	
Smartphone		11 (16.1)	212 (82.5)	
All		6 (33.3)	45 (17.5)	2 (20)



*Significant, Fischer exact test $P < 0.05$, NS : Not significant

Figure 1 : Type of devices used to access internet for academic related health information P value 0.03*

Table 3 Shows regarding Knowledge of obtaining health information, most of the Postgraduates frequently relay on PubMed in internet for health information for academics when compared to Undergraduates and Interns with significant p value

0.004. Journals and articles are the most preferred source for academic purpose by Postgraduates and statistically significant difference found when compared to Undergraduates and Interns.

Regarding the search for health information it was found statistically significant with 50% of Interns searched for medications, 50% of Postgraduates and 35% of Undergraduates searched for about basic sciences information. Majority of Postgraduates frequently prefer virtual conferences, in internet to improve knowledge in health information for academics and statistically no significant difference was observed as Undergraduates and Interns prefer online video's and webinars.

Table 3 : Knowledge of obtaining academic related health information

Items	Qualification			χ^2
P				

Postgraduates, n (%)	Undergraduates, n(%)	Interns, n (%)
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Which is the most frequently used websites in internet for Health information related to academics?

Google scholar	3 (16.7)	39 (15.3)	0	32.7	0.004*
PubMed	10 (55.6)	10 (3.9)	2	(20.0)	
Scopus	2 (11.1)	9 (2.7)	0		
Cochrane library	2 (11.1)	5 (2.0)	0		
Other sites	1 (5.6)	192 (75.3)	8	(80.0)	
Medscape.com	0	2 (0.8)		0	

For academic purpose what type of source do you use?

Journals and articles	12 (66.7)	5 (1.9)	0	127	<0.001**
Details about controversial topics	6 (33.3)		231 (89.9)	10	(100)
Case related information/ treatment	0	17 (6.6)	0		
Presentations	0	4 (1.6)	0		

What type of health information do you most frequently search in online?

Diagnostic		1 (5.6)		49	(19.1)
1 (10.0)	11.3	0.046*			
Medications	4 (22.2)	72 (28.0)		5	(50.0)
Clinical Solutions	4 (22.2)	46 (17.9)		4	(40.0)
Basic information	9 (50.0)	90 (35.0)	0		

To improve your knowledge in health information for your academics which type of programs do you prefer?

Webinars	6 (33.3)	60 (23.3)	9 (90)	13.0	0.063
Online video's		0	164 (63.8)	1	(10)

Virtual Conferences	8 (44.4)	0
Online CDEs programs	4 (33.3)	33 (12.8) 0

*Significant, Fischer exact test $P < 0.05$, NS : Not significant

Table 4 shows that majority of dental students had cross checked for the health information provided in internet sources with the available offline resources and rated their Quality of knowledge gained by internet on health information for academics as more when compared to textbook and journals (**Figure 2**) and there is no statistically significant difference was found among the dental students.

Table 4 : Distribution of study participants responses on rating their Quality of knowledge gained by internet for health related academic information.

Items					Qualification
χ^2	P				
<hr/>					
Postgraduates, n (%)		Undergraduates, n(%)		Interns, n (%)	
Do you cross check health information provided in internet resources with the available offline resources ?					
Yes	17 (94.4)	210 (81.7)	8 (80.0)	1.93	0.438
No	1 (5.6)	47 (18.3)	2 (20.0)		
How would you rate the quality of knowledge gained by internet on health information related to your academics as compared to textbook and journals					
Less than text				0	4 (1.6)
0	20.4	0.204			
More than text				15 (83.3)	151 (58.75)
7 (70)					
As per with text				0	23 (8.9)
0					
Can't comment	3 (16.7)	79 (30.7)	3 (30.0)		
How will you rate yourself on finding health related information for academics?					
Unfamiliar	0	4 (1.6)		0	4.72 0.797
Beginner	0	10 (3.9)	0		
Average		1 (5.6)			23 (8.9) 2
(20)					
Competent		8 (44.4)			116 (45.1) 6
(60)					
Expert		9 (50.0)			104 (40.5) 2
(20)					

*Significant, Fischer exact test $P < 0.05$, NS : Not significant

Figure 2: Study participants responses on rating their Quality of knowledge gained by internet on health information for academics compared to textbook and journals.

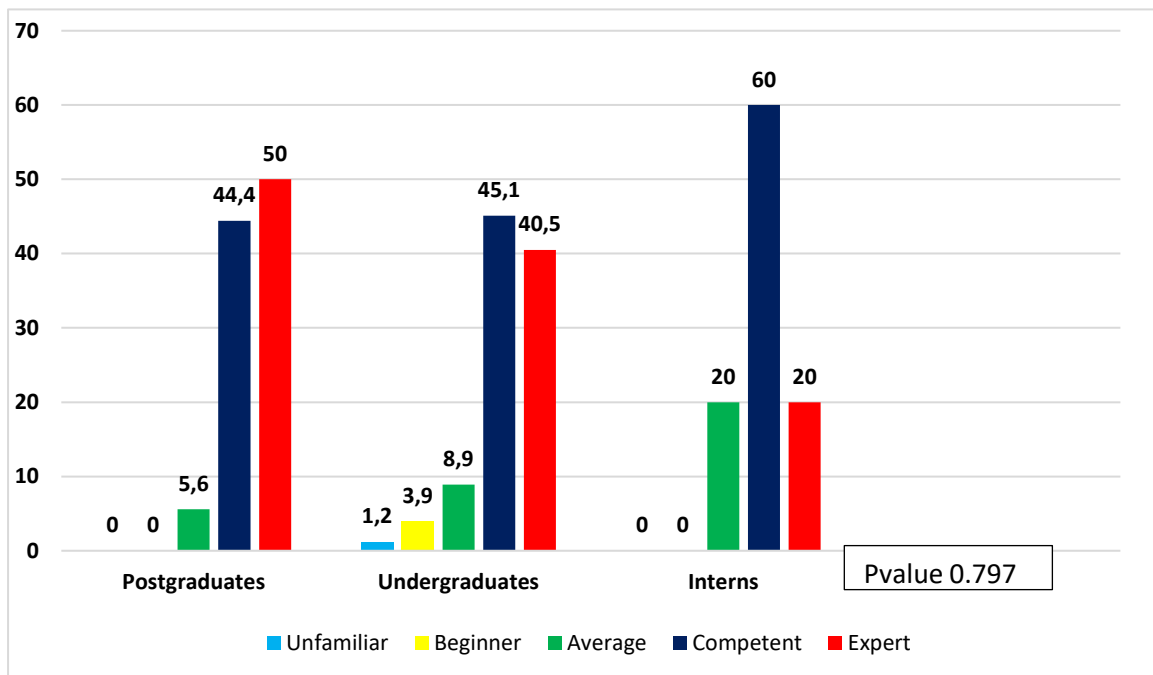


Figure 3 shows that majority of the Postgraduates (50%), were found experts when compared to Undergraduates and Interns in finding health related academic information in internet and there is no statistically significant difference was observed among the dental students.

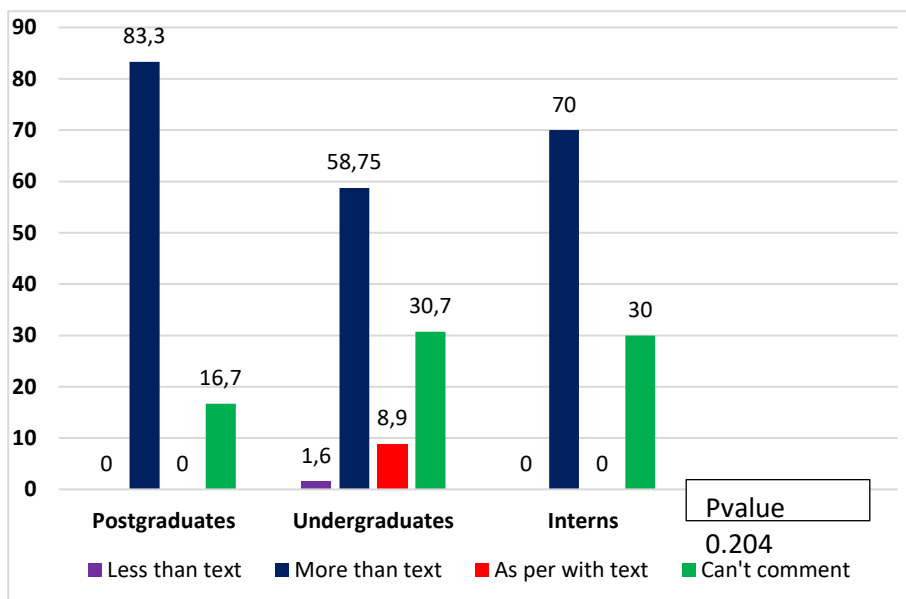


Figure 3: Study participants responses on rating them in finding health related information for academics.

Table 5 shows that questions based on trustworthiness of the information on the internet and found no statistically significant difference found among Postgraduates, Undergraduates and Interns regarding utilization of health related information available in Internet for academics / Practice.

Table 5: Questions based on trustworthiness of the academic related health information in the internet

Items	χ^2	P
Do you have confidence that information found on internet based resources are true ?	12.4 0.149	
Is the information provided by the internet based resources is clear to you ?	8.82 0.458	
Do you think information provided by the internet based resources might be beneficial during treatment ?	5.42 0.172	

*Significant, Fischer exact test $P < 0.05$, NS : Not significant

Discussion :

Internet is one of the greatest inventions and is rapidly becoming an irreplaceable part of education [2]. The formation and the growth of the internet provides incomparable e- learning and student satisfaction as internet services are readily available in all the time in all devices; and hence dental students can utilize it for accessing Scientific content, discussing cases, learning dental concepts from video's, health information related to academics e.t.c[2]. This present study surveyed the perceptions and utilization practices of internet as a source of seeking academic related health information among dental students.

In the present study findings, it was found 18.4% of the dental students seek health information related to their academic purpose, which was in contradictory to the study done by Walmsley AD et al. in U.K[14] reported that 53% of dental students used internet to obtain academic related health information.

Lamiset al[9] reported that most of the study participants use internet 2-3 times in a week, which is in contrast to our study; where 50% of postgraduates used internet every day when compared to Undergraduates (27.2%) and Interns (60%) used 2-3 times a week. However, in our study majority of the academic related health

information seeking is done by using smart phones and the difference was statistically significant which was in accordance with the study done by Shanmugapriya R et al.

The results of the current study shows that the most preferred website for exploring health information related to academics is PubMed by Postgraduates which is statistically significant when compared to Undergraduates and Interns as they mostly prefer other websites in google. Inadequate exposure to the available websites in google and improper guidance to Undergraduates and Interns could be the reason for lack of knowledge on PubMed in the current study and which is similar to the study conducted by Shanmugapriya R et al. and Jamshid Ayatollahi et al.

Postgraduates were well aware of the recent journals, articles and virtual conferences for to improve knowledge in health information related to their academics when compared to Undergraduates and Interns. Similar results were also found in a study done by Apporva Bhargava Daga et al. and A. Deshpande et al^[12].

Postgraduates, Undergraduates and Interns in our study reported that knowledge obtained through internet about health information related to their academics is more when compared to knowledge obtained through offline sources like textbooks, Journals e.t.c. This result was in contradictory with the study conducted by Apporva Bhargava Daga et al^[12]. and Grover et.al^[21]. However, from the results of the present study, it could be noted that, Postgraduates were found to be experts when compared to Undergraduates and Interns were competent in finding health related academic information in internet.

Furthermore, in the current study it was found that differences in the attitudes among dental students was found in internet usage related to websites, online Journals, articles and virtual conferences due to inadequate exposure to the available websites in google and improper guidance to Undergraduates and Interns could be the one of the reason for lack of knowledge when compared to Postgraduates.

Conclusion:

This study concluded that majority of the dental students utilizes internet for seeking academic related health information.

Limitations:

This study has some limitations : (1) The number of dental students who participated in the study was limited, (2) Data collected in only one dental institution so it may not represent the whole, (3) In this study limited number of questionnaire items were used regarding on internet usage on academic related health information to assess dental students perceptions, Knowledge and utilization practices.

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