

# Self-Reported Dental Health Attitude and Practices Among Undergraduate Students of Physiotherapy Program of a Government Institute of Karachi, Pakistan

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## ABSTRACT

**Objective:** The object is to evaluate self-reported oral health attitudes and behavior among DPT students of a government institute of Karachi.

**Study Design:** Cross sectional study.

**Place and Duration of Study:** This study was conducted at the Department of Physiotherapy, Institute of Physical Medicine & Rehabilitation, DUHS, Karachi from October to December 2017.

**Materials and Methods:** It is a cross-sectional study in which 200 students (both male and female) that were studying in a reputed physiotherapy college segregated into preclinical and clinical groups were the part of this study. Hiroshima University Dental Behavioral Inventory (HU-DBI), a self-administered questionnaire was used to collect data. The data was analyzed through SPSS.20.

**Result:** 50% (n=100) preclinical and 50% (n=100) clinical students were found out. The questionnaire is used to assess their perception and awareness level about their oral health. Both the groups of students were overall satisfied with the appearance of their teeth [mean value 4.4, 4.8, p-value 0.143 (pre-clinical and clinical respectively)]. the clinical side students scored significantly high when they asked about using standard sized toothbrush mean 5.5 (1.93) as compare to mean 4.8 (2.23) score of preclinical students, p-value 0.014. interestingly the early academic year students were less worried about visiting a dentist when needed as compare to their senior fellows [mean 5.16 (2.3), 4.02 (2.2), p-value <0.01].

**Conclusion:** Our study concluded that at certain levels the Clinical DPT students demonstrated enhanced approaches towards oral healthiness behavior in comparison to preclinical, but still that one obligatory to endorse a widespread oral hygiene sequencer for DPT students to start from the early weeks of their introduction to clinical field as good oral hygiene has good impact on verbal communication.

**Key Words:** HUDBI (Hiroshima University Dental Behavior Inventory), oral hygiene, physiotherapy

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## INTRODUCTION

DPT students, future physical therapists are integral part of health care services and their physical well-being is as essential as the knowledge and skills they

carry. Dental hygiene plays an important role in maintenance of one's health. A good quality of life is possible if students maintain their oral health and become free of oral disease<sup>1</sup>. The aim of our study is to evaluate self-reported oral health attitudes and behavior among DPT students of a government institute of Karachi, Pakistan. In the absence of adequate care, resulting oral diseases like dental caries, periodontal problems and bad odor known as halitosis that can have not only physical and functional but also social impacts<sup>2</sup>. Oral causes, such as poor oral hygiene, periodontal disease, tongue coating, food impaction are far more common causes of malodor, stained teeth and malodor has direct impact on communication as Physical therapist deals patients in very closer contact. Management may include simple measures such as scaling, tongue cleaning, and mouth rinsing<sup>3</sup>.

**Literature Review:** Today we are living in a modern era, in which world has become more developed in terms of science and technology consumption of junk food and fizzy drinks along with lesser concentration at

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oral hygiene has affected the good oral health<sup>4</sup>. As it is the universally accepted phenomenon that physical therapists have the crown in maintenance of activities of daily living<sup>5</sup>. Not only have they embraced the accountability to impart rehabilitation approaches not only to their patients and the general public but on the other hand also to be an exemplar themselves as per their efforts in spreading the awareness regarding health education and to be a good communicator there is always a great emphasis on good oral hygiene<sup>6</sup>. For this motive, that one is considerable to gauge the DPT students' yearly advancement associated to their peculiar oral hygiene by way of their progress towards clinical experiences<sup>7</sup>.

The Hiroshima University dental behavioral Inventory (HUDBI), comprising of absolute responses (Agree-Disagree), established by Kawamura to scrutinize oral health attitudes and behavior in quite a lot of other countries and has reliability of worth<sup>8</sup>. Oral healthiness awareness is contemplated as one of the vital criterion for health-related behavior among DPT students<sup>9</sup>. A professional institute is alleged to be a place where a sense of obligation and accountability instill in students all through their academic years, that will have undeviating impact on their communication skills<sup>10</sup>. Since assisting healthiness personnel have their academic majors in precautionary information and health advancement, it is of utmost importance that their individual oral health understanding is good and their oral health conduct adapts to proficient commendations<sup>10</sup>.

In an analogous research concerning to the assessment of dental wellbeing characteristics amongst dental undergraduates it was discovered, with the exception of a small number of dissimilarities i.e females being more conscious and careful about their dental health, all the students had the competency to extemporize and contrivance their familiarity regarding extreme dental care<sup>11</sup>. In one more study directed in Turkey in 2011 by Sinem et al, outcomes revealed students of clinical years had greater HU-DBI tally in relevance to that of non-clinical students<sup>12</sup>.

One of the scientific study done at United Arab Emirates (UAE), equated hygiene practices between medical and dental students, in order to evaluate the significance of dental education in UAE. Substantial variances were found associated to dental health attitudes indicative of the impact of dental health knowledge and awareness amongst the dental undergraduates towards their peculiar oral maintenance as related to their therapeutic counterparts<sup>13</sup>.

## MATERIALS AND METHODS

The data was collected from Department of Physiotherapy, Institute of Physical Medicine & Rehabilitation, DUHS between October to December 2017.

Study conducted among students of a renowned physical therapy institute of Karachi in 2017. This is a

cross sectional study. Sample size that was premeditated, established on the amount of students' inclusion was 200, by keeping confidence interval 95% and standard error of mean 5%.

**Inclusion criteria:** Students of both the genders enrolled in 1<sup>st</sup> and 2<sup>nd</sup> year DPT program were selected for pre-clinical group and those enrolled in 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> year DPT program were selected for clinical group, Age limit was between 18-24 years.

**Exclusion criteria:** Students enrolled in DPT program but are suffering from stress or from any acute dental problem was excluded as this may affect their response.

**Data Collection Tool:** Data was collected using English version of authenticated self-administered Hiroshima University Dental Behavioral Inventory (HU-DBI), questionnaire. The questionnaire comprised of statements related to oral hygiene practices, the whole questionnaire has double choices by way of their replies, i.e. every respondent may pick to either come to affirmative response or differ with the statements rendering to his/her practices. Communal of these replies illustrated a quantifiable guesstimate of oral hygiene behavior of students. The responses of the students were noted on Likert scale with 1 to 7 with 1 means Strongly Disagree and 7 means Strongly Agree. Later on, students were divided into two groups depending on their academic status i.e. clinical and pre-clinical and then their scores were compared.

## RESULTS

**Table No.1. Demographic characteristic of the students**

Age(year)Mean±SD	21.98±2.14	
18 -20	58	29.0
21 - 23	101	50.5
> 23 years	41	20.5
Year of education		
First	34	17.0
second	32	16.0
Third	34	17.0
Fourth	50	25.0
Fifth	50	25.0
Posting		
Pre-clinical	100	100
Clinical	100	100

**Table No.2. Distribution of the student's gender and HUDBI Score**

		Freq- uency	%age	Mean HU- DBI score (SD)	P Value
Gender	Female	183	91.5	3.82 (0.77)	0.45
	Male	17	8.5	3.67 (0.05)	

A total of 200 participants were recruited in the study. The mean age of the participants was found to be  $21.98 \pm 2.15$  included both male and female. The male to female ratio in both clinical and pre-clinical group and other demographic characteristics has been shown in table 1 & 2. The participants were divided into clinical and pre-clinical groups on the basis of their academic year of study. A difference has been observed in the awareness level among the pre-clinical and clinical

students and it could be seen that clinical student are more aware as compared to pre-clinical students related to the concept of oral hygiene awareness (table 3). The female students has a slightly better overall mean score 3.82 (0.77) as compare to male students 3.67 (0.50) but the difference is not significant (p-value 0.45). Significant difference was also found at certain levels when students were compared on the basis of their age groups as shown in table 4.

**Table No.3: Comparison of the HU-DBI scores between pre-clinical and clinical DPT student**

Hiroshima university Dental Behavioral inventory Questionnaire	Preclinical (n = 100)		Clinical (n = 100)		t-test	
	Mean	SD	Mean	SD	Statistic	P-value
"I am satisfied with the appearance of my teeth"	4.4400	2.41343	4.8800	1.76	-1.471	0.143
"My gums tend to bleed when I brush my teeth".	2.3400	1.96546	2.9900	2.16	-2.224	0.02*
"I worry about the color of my teeth".	4.2200	2.44776	4.2800	2.07	-.187	0.852
"I have noticed white sticky deposits on my teeth"	3.0600	2.44048	3.4700	2.23	-1.240	0.216
"I use a standard-sized toothbrush".	4.8200	2.23553	5.5500	1.93	-2.469	0.014*
"I think that I cannot help having false teeth when I am old".	2.8000	2.64384	3.5500	2.37	-2.110	0.036*
"I am worried by the color of my gums."	3.0600	2.24202	3.2600	2.20	-.637	0.525
"I think my teeth are getting worse despite my daily brushing".	3.0600	2.39874	2.5800	1.91	1.566	0.119
"I brush each of my tooth carefully".	4.8400	2.32995	4.8500	2.11	-.032	0.975
"I have never been taught professionally how to brush".	4.3200	2.32196	3.5000	2.38	2.466	0.015*
"I think I can clean my teeth well without using tooth paste".	1.5400	1.19274	2.7500	2.18	-4.860	<0.01*
"I often check my teeth in a mirror after brushing".	5.4400	1.98133	5.5800	1.72	-.533	0.595
"I worry about having bad breath".	4.1600	2.48925	4.0200	2.42	.403	0.687
"It is impossible to prevent gum disease with tooth brushing alone".	4.2800	2.45394	4.3900	2.23	-.332	0.741
"I never go to a dentist until I have a toothache".	5.6200	2.13570	4.8700	2.39	2.340	0.02*
"I have used a dye to see how clean my teeth are".	2.8800	2.29747	2.4900	1.99	1.281	0.20
"I use a toothbrush which has hard bristles".	2.9000	2.23155	2.5918	1.87	1.053	0.29
"I do not feel I have brushed well unless I brush with strong strokes"	4.1800	2.39267	2.9800	2.06	3.801	<0.01*
"I feel that sometimes I take too much time to brush my teeth".	4.4200	2.31019	3.8400	2.21	1.816	0.071*
"I have had my dentist tell me that I brush very well".	2.7000	2.59175	3.4900	2.38	-2.247	0.026*
"I do not worry much about visiting the dentist if needed"	5.0600	2.29545	4.0200	2.21	3.263	0.001*
Over all Mean Score	3.8162	.73697	3.8038	0.77	.116	0.908

Independent t test applied - \*P-value significant (<0.05)

**Table No.4. Comparison of the HU-DBI scores among age group of students**

Hiroshima university Dental Behavioral inventory Questionnaire	18 – 20 (n = 58)		21 - 23 (n = 101)		Greater 23 year (n = 41)		ANOVA Test	
	Mean	SD	Mean	SD	Mean	SD	Statistic	P-value
I am satisfied with the appearance of my teeth	4.43	2.3	5.02	1.9	4.07	2.0	3.53	0.03*
My gums tend to bleed when I brush my teeth.	2.38	1.8	2.53	2.1	3.42	2.2	3.5	0.03*
I worry about the color of my teeth.	4.19	2.5	4.19	2.2	4.49	2.1	0.28	0.75
I have noticed white sticky deposits on my teeth	3.53	2.	2.87	2.3	3.85	2.3	3.18	0.04*
I use a standard-sized toothbrush.	4.91	2.2	5.52	1.9	4.76	2.3	2.58	0.08
I think that I cannot help having false teeth when I am old.	2.10	2.5	3.3	2.4	4.39	2.3	11.0	<0.01*
I am worried by the color of my gums.	2.76	2.3	3.26	2.1	3.49	2.4	1.50	.225
I think my teeth are getting worse despite my daily brushing.	2.95	2.3	2.62	2.1	3.12	2.3	0.91	.40
I brush each of my tooth carefully.	5.09	2.1	5.19	2.1	3.66	2.4	7.9	<.01*
I have never been taught professionally how to brush.	4.24	2.4	3.90	2.3	3.46	2.6	1.28	0.28
I think I can clean my teeth well without using tooth paste.	1.89	1.6	2.07	1.9	2.65	2.1	2.17	0.12
I often check my teeth in a mirror after brushing.	5.91	1.6	5.56	1.7	4.83	2.4	4.31	0.02*
I worry about having bad breath.	3.64	2.4	4.01	2.4	4.93	2.3	3.52	0.03*
It is impossible to prevent gum disease with tooth brushing alone.	3.72	2.2	4.67	2.4	4.39	2.34	3.04	0.05*
I never go to a dentist until I have a toothache.	4.93	2.3	5.52	2.2	5.02	2.3	1.44	0.24
I have used a dye to see how clean my teeth are.	3.78	2.5	2.34	1.9	2.0	1.5	12.0	<.01*
I use a toothbrush which has hard bristles.	2.36	1.9	3.01	2.2	2.66	1.8	1.87	0.16
I do not feel I have brushed well unless I brush with strong strokes	4.36	2.3	3.22	2.3	3.37	2.1	4.94	.01*
I feel that sometimes I take too much time to brush my teeth.	4.72	2.1	4.02	2.3	3.56	2.3	3.47	.03*
I have had my dentist tell me that I brush very well.	3.09	2.6	3.24	2.6	2.76	2.2	.53	0.59
I do not worry much about visiting the dentist if needed	4.56	2.6	4.75	2.1	4.0	2.4	1.56	0.21
Over all Mean Score	3.79	0.8	3.84	0.7	3.76	0.8	.23	0.79

Independent t test applied - \*P-value significant (<0.05)

## DISCUSSION

The study provided multiple information related to the oral hygiene awareness level among the DPT students of Karachi, Pakistan. The result is in accordance with the study of Yildiz et al among dental and medical students, in which he concluded that the student awareness increases with the increase in the academic grades and the students of fourth and the final year are more orally hygiene conscious than the students of first and the second year<sup>12</sup>. However, the result obtained from this study suggested that all of the DPT students irrespective of their academic levels are conscious and well aware about their oral hygiene. According to the present study at some point clinical students are more conscious related to oral hygiene than the pre-clinical

students. The reason may be due to the education and interaction level as they are professionally growing themselves in the field of physical therapy. The study conducted on the student of Jordan also showed similar result that at the start of the academic education in dental profession the students have less awareness related to oral health but as they progress into their academic lives they become more aware related to oral health. Moreover, their findings showed that females have more positive attitude towards oral health in comparison to males<sup>14</sup>. Another study on the dental students of Romania showed that there were considerable differences in dental health attitudes and behavior between the different academic stages of dental education and between genders<sup>15</sup>. Unfortunately, the male population in our study was very small so we

couldn't apply any statistical test. Moreover, all questions that has been asked from the students of both clinical and pre-clinical, of Karachi under Hiroshima University Dental Behavior Inventory questionnaire it is found that the clinical students are more consciously aware related to the Oral health in term of every question put forward to them and that the mean obtained for most of the question is higher for clinical students in comparison to the pre-clinical students.

## CONCLUSION

Clinical DPT students demonstrated enhanced approaches towards oral healthiness behavior in comparison to preclinical students. The study also suggested that the students of Physical therapy are conscious related to their oral health. The study highlighted that the DPT students of a well-known institute of Karachi are though conscious and take good care of their oral health, however the result would not be the same for different other colleges of Karachi.

**Recommendation:** This study is mainly confined to one institute for DPT. We normally observed students who already take good care of their personal and social appearance. Thus, it is recommended that more surveys of this type should be performed among different other colleges and universities of Karachi where students from different other academic backgrounds like engineering, commerce etc. shall be surveyed to find out the awareness level among these students as well. Although clinical DPT students demonstrated better knowledge towards oral health hygiene but still that one obligatory to endorse a widespread oral hygiene sequencer for DPT students to start from the early weeks of their introduction to clinical field as good oral hygiene has good impact on both self-confidence and verbal communication.

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### Author's Contribution:

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**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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