



Knowledge, Attitude, Practice of Hand Hygiene among Dental Students in Tertiary Care Teaching Hospital Khammam Telangana

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Research Article

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Crossref doi: <https://doi.org/10.36437/ijdrd.2024.6.3.D>

ABSTRACT

This study aims to investigate the knowledge, attitude, and practice of hand hygiene among dental students. We can access the level of knowledge among students about the importance of hand hygiene, and proper hand washing techniques, by which we can determine whether they possess up-to-date knowledge about hand hygiene or not. We can access the attitudes and perceptions towards hand hygiene by knowing their beliefs, values, and opinions about the importance of hand hygiene in preventing the spread of infection. Practice will determine whether students are adhering to proper hand hygiene protocols, in real-world clinical settings or not.

Aim: to assess the hand hygiene compliance rate among dental students in tertiary dental clinics.

Objectives

1. To evaluate the level of knowledge of dental students about various hand hygiene protocols.
2. To determine dental students' perceptions and attitudes towards hand hygiene, including its importance in preventing the spread of infections.
3. To assess dental students' actual hand hygiene practices in clinical settings.

Method: A cross-sectional survey was conducted among 265 dental students, comprising 114 males (54.3%) and 121 females (45.6%), including 56 first-year BDS students, 76 second-year BDS students, 50 third-year BDS students, 53 final-year BDS students, and 30 interns. The survey included 15 questions exploring awareness, and perceptions, of hand hygiene among dental students. Responses were analyzed based on gender and year of Study using chi-square tests to identify statistically significant differences.

Keywords: Dental Students, Hospitals, Hand Washing, Hand Hygiene, Infection, khammam, Knowledge, Patient Care, Tertiary Dental Clinic.

Introduction

Hand hygiene is a critical aspect of infection control in dental settings. As future healthcare professionals, dental students play a vital role in preventing the spread of infections. Proper hand hygiene practices are essential for maintaining a clean and safe clinical environment, ensuring patient safety, and preventing the transmission of pathogens. Dentist's hands get contaminated by touching body secretions, excretions, wounds of patients, intact skin of patients, and environmental surfaces in the immediate vicinity of the patients. To avoid prolonged hand contamination, it is important to perform hand hygiene.

The value of hand hygiene extends beyond the health care setting as it helps in preventing chemically related occupational hazards and up to 80% of infections, including influenza, in the community setting. Hand hygiene compliance among healthcare workers is low even though hand hygiene is one of the simplest and most important aspects of infection control. It contributes to a clean and safe clinical environment, promoting a positive and healthy learning environment for dental students. It is essential for providing high-quality patient care, which is critical for clinical excellence and professional reputation. Dental students feel that they do not have enough time to practice proper hand hygiene. So we can resolve this by making hand hygiene a habit by incorporating it into daily routines. They also face inadequate facilities, such as a lack of soap, water, or hand sanitizer. So we can ensure that dental clinics and hospitals provide adequate facilities for hand hygiene. We also provide regular training and education on hand hygiene practices which motivates and encourages them.

In conclusion, hand hygiene is of paramount importance among dental students. By practicing proper hand hygiene, dental students can ensure patient safety, and prevent the transmission of pathogens. By maintaining a clean and safe clinical environment which enhances professionalism and

patient trust, and supports academic and clinical excellence. For that, they require regular training, monitoring, and provision of adequate facilities for essential to promote optimal hand hygiene practices. As future healthcare professionals, dental students must prioritize hand hygiene to provide high-quality patient care and ensure a safe and healthy clinical environment.

Methodology

A) Study design and area: A cross-sectional study was carried out at the tertiary care teaching hospital khammam.

B) Study Population: The health care students including those of I year, II year, III year, IV year, and Interns who responded to the offline paper print questionnaire survey.

C) Study Instrument: A self-administered questionnaire was designed based on knowledge attitude and awareness of hand hygiene practices and had a total of 15 questions. Each participant has to fill in their demographic data like Name, age, and year of study. Participant has to select one option from the answers provided against questions. The questions were based on knowledge attitude and practice among dental students.

D) Pilot Study: A pilot study was conducted on a group of students to assess the validity and reliability of the study.

E) Sampling Method: The sampling method used is a convenience method.

F) Inclusion Criteria: The students who were interested in the study and who were willing to participate.

G) Exclusion Criteria: students who are not willing to participate are excluded.

H) Organizing the Study: The study was designed in a paper-based version of the self-administered questionnaire of 15 questions focusing on knowledge, attitude, and practice.

Includes the sections of demographic data: Name, Age, Sex, and Year of study demographic information and asked to answer all questions by selecting one option from the provided answers.

Statistical Analysis: Data from the filled questionnaire was collected in a tabular form in an Excel worksheet and evaluated for analysis. The analysis was performed by SPSS version 29.

Result

A total of 265 students took part in this with females (45.6%) and males of (54.3%). Age of the

participants ranged from 18-27 years. In this study, males were more likely to demonstrate awareness of hand hygiene than females. Significantly II BDS (28.6%), I BDS (21.1%), IV BDS (20%), III BDS (18.8%), and INTER (11.3%) showed greater response on hand hygiene practices.

Age	N	Minimum	Maximum	Mean	Std. Deviation
Age	265	18	27	21.86	1.893

Gender		Frequency	Percent
Valid	MALE	144	54.3
	FEMALE	121	45.6
	Total	265	100.0

Year of the Study		Frequency	Percent
Valid	I BDS	56	21.1
	II BDS	76	28.6
	III BDS	50	18.8
	IV BDS	53	20
	INTERN	30	11.3
	Total	265	100.0

Distribution and comparison of responses based on gender

Item	Response	Males		Females		Chi-Square value	P value	Total	
		n	%	n	%			n	%
Q1	1	21	43.8	27	56.2	7.326	0.62	48	20.8
	2	29	51.8	27	48.2			56	23.7
	3	65	61.9	39	37.1			105	44.5
	4	19	73.1	7	26.9			26	11
Q2	1	19	43.2	25	56.8	10.378	0.016*	44	18.6

	2	50	54.9	41	45.1			91	38.6
	3	44	59.5	30	40.5			74	31.4
	4	22	81.5	5	18.5			27	11.4
Q3	1	19	47.5	21	52.5	6.481	0.090	40	17
	2	33	48.5	35	51.5			68	28.9
	3	53	63.9	30	36.1			83	35.3
	4	29	65.9	15	34.1			44	18.7
Q4	1	16	42.1	22	57.9	19.818	0.0001*	38	16.2
	2	15	40.5	22	59.5			37	15.7
	3	34	50.7	33	49.3			67	28.5
	4	69	74.2	24	25.8			93	39.6
Q5	1	16	45.7	19	54.3			35	14.9
	2	29	46	34	54	10.620	0.014*	63	26.8
Q6	1	29	53.7	25	46.3	5.049	0.168	54	22.9
	2	30	47.6	33	52.4			63	26.7
	3	55	62.5	33	37.5			88	37.3
	4	21	67.7	10	32.3			31	13.1
Q7	1	28	57.1	21	42.9	9.489	0.023*	49	20.9
	2	45	54.9	37	45.1			82	35
Q8	1	25	50	25	50	10.167	0.017*	50	21.2
	2	35	60.3	23	39.7			58	24.6
Q9	1	34	53.1	30	46.9	1.211	0.750	64	27.1
	2	40	60.6	26	39.4			66	28
	3	41	55.4	33	44.6			74	31.4
	4	20	62.5	12	37.5			32	13.6
Q10	1	24	52.2	22	47.8	8.275	0.041*	46	19.6

	2	29	60.4	19	39.6			48	20.4
Q11	1	36	57.1	27	42.9	5.928	0.115	63	26.9
	2	29	59.2	20	40.8			49	20.9
Q12	1	20	43.5	26	56.5	6.303	0.98	46	19.5
	2	32	59.3	22	40.7			54	22.9
	3	61	64.9	33	35.1			94	39.8
	4	22	52.4	20	47.6			42	17.8
Q13	1	31	49.2	32	50.8	2.483	0.478	63	26.7
	2	30	62.5	18	37.5			48	20.3
Q14	1	21	46.7	24	53.3	3.258	0.350	45	19.1
	2	42	63.6	24	36.4			66	28.1
Q15	1	30	55.6	24	44.4	5.229	0.156	54	23
	2	41	50	41	50			82	34.9

Distribution and comparison of responses based on year of the study

Item	Response	I BDS		II BDS		III BDS		IV BDS		INTERN		Chi-Value	P-Value	Total					
		n	%	n	%	n	%	n	%	n	%			N	%				
Q1	1	18	36.7	12	24.5	7	14.3	9	18.4	3	6.1	16.114	0.186	49	20.8				
	2	12	21.4	18	32.1	12	21.4	10	17.9	4	7.1					56	23.7		
	3	17	16.2	28	26.7	19	18.1	24	22.9	17	16.2							105	44.5
	4	4	15.4	9	34.6	7	26.9	5	19.2	1	3.8								
Q2	1	12	27.3	9	20.5	7	15.9	10	22.7	6	13.6	7.842	0.797	44	18.6				
	2	19	20.9	30	33	16	17.6	16	17.6	10	11					91	38.6		
	3	15	20.3	18	24.3	16	21.6	19	25.7	6	8.1							74	31.4
	4	5	18.5	10	37	6	22.2	3	11.1	3	11.1								
Q3	1	12	30	10	25	6	15	6	15	6	15	11.192	0.513	40	17				

	2	7	25	18	26.5	14	20.6	16	23.5	3	4.4			68	28.9
	3	14	16.9	28	33.7	18	21.7	14	16.9	9	10.8			83	35.3
	4	8	18.2	11	25	7	15.9	11	25	7	15.9			44	18.7
Q4	1	11	28.9	11	28.9	6	15.8	6	15.8	4	10.5	17.051	0149	38	16.2
	2	11	29.7	8	21.6	6	16.2	11	29.7	1	2.7			37	15.7
	3	14	20.9	22	32.8	15	22.4	13	19.4	3	4.5			67	28.5
	4	15	16.1	25	26.9	18	19.4	18	19.4	17	18.3			93	39.6
Q5	1	12	34.3	8	22.9	5	14.3	5	14.3	5	14.3	18.317	0.106	35	14.9
	2	11	17.5	17	27	15	23.8	17	27	3	4.8			63	26.8
Q6	1	17	31.5	12	22.2	9	16.7	8	14.8	8	14.8	42.592	0.0001*	54	22.9
	2	14	22.2	17	27	15	23.8	16	25.4	1	1.6			63	26.7
	3	19	21.6	33	37.5	7	8	20	22.7	9	10.2			88	37.3
	4	1	3.2	5	16.1	14	45.2	4	12.9	7	22.6			31	13.1
Q7	1	11	22.4	15	30.6	3	6.1	9	18.4	11	22.4	19.802	0.071	49	20.9
	2	19	23.2	22	26.8	16	19.5	18	22	7	8.5			82	35
Q8	1	12	24	14	28	6	12	9	18	9	18	15.579	0.211	50	21.2
	2	10	17.2	15	25.9	11	19	13	22.4	9	15.5			58	24.6
Q9	1	17	26.6	20	31.2	8	12.5	6	9.4	13	20.3	22.714	0.030*	64	27.1
	2	13	19.7	21	31.8	11	16.7	15	22.7	6	9.1			66	28
	3	17	23	18	24.3	15	20.3	20	27	4	5.4			74	31.4
	4	4	12.5	8	25	11	34.4	7	21.9	2	6.2			32	13.6
Q10	1	13	28.3	13	28.3	5	10.9	5	10.9	10	21.7	19.322	0.081	46	19.6
	2	11	22.9	12	25	10	20.8	12	25	3	6.2			48	20.4
Q11	1	18	28.6	11	17.5	8	12.7	11	17.5	15	23.8	25.349	0.013*	63	26.9
	2	11	22.4	16	32.7	8	16.3	11	22.4	3	6.1			49	20.9
Q12	1	12	26.1	13	28.3	6	13	5	10.9	10	21.7	29.118	0.04*	46	19.5
	2	11	20.4	22	40.7	10	8.5	7	13	4	7.4			54	22.9
	3	18	19.1	23	24.5	17	18.1	31	33	5	5.3			94	39.8

	4	10	23.8	9	21.4	12	28.6	5	11.9	6	14.3			42	17.8
Q13	1	17	27	16	25.4	6	9.5	13	20.6	11	17.5	14.206	0.288	63	26.7
	2	9	18.8	17	35.4	10	20.8	8	16.7	4	8.3			48	20.3
Q14	1	12	26.7	17	37.8	6	13.3	4	8.9	6	13.3	24.286	0.019*	45	19.1
	2	11	16.7	16	24.2	7	10.6	21	31.8	11	16.7			66	28.1
Q15	1	13	24.1	20	37	5	9.3	5	9.3	11	20.4	20.340	0.061	54	23
	2	17	20.7	18	22	17	20.7	24	29.3	6	7.3			82	34.9

P≤0.05 is statistically significant

Discussion

Hand hygiene is critical in the prevention of hospital-acquired infections which contribute to the death of nearly 90,000 hospital patients per year. It is the single most effective way to reduce the spread of microorganisms in dentistry. In this study, the majority of the respondents knew that hand washing is important in dentistry.

Hand hygiene can be performed by washing hands with plain soap and water, and this has been the standard practice in dentistry. The use of a persistent-level antimicrobial hand wash or an alcohol-based hand rub is also acceptable. A survey found that only 60% of dental students washed their hands before starting clinical procedures. Another study revealed that dental students often neglect to wash their hands after interacting with patients.

Several barriers contribute to inadequate hand hygiene practices among dental students such as lack of time dental students may feel rushed during clinical procedures due to inadequate facilities dental clinics and hospitals may lack adequate hand hygiene facilities or because of lack of knowledge dental students may not fully understand proper hand hygiene practices. Strategies for improvements such as by provide dental students with regular training and education on proper hand hygiene practices and emphasizing the importance of hand hygiene.

Conclusion

Hand hygiene is a vital component of infection control in dental settings, and dental students play a crucial role in maintaining a clean and safe clinical environment. This discussion highlights the importance of hand hygiene among dental students, current practices, barriers to hand hygiene, and strategies for improvement. Dental students must prioritize hand hygiene to prevent the spread of infections.

It is evident that proper hand hygiene practices are essential for preventing the spread of infections, among patients, dental students, and healthcare workers. Dental students can develop proper hand hygiene practices, ensuring a safe and healthy clinical environment.

By prioritizing hand hygiene, dental students can provide high-quality patient care, ensure a safe clinical environment, and maintain a positive reputation in the dental profession.

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How to cite this Article: G. Swathi, K. V. N. R. Pratap, T. Madhavipadma, Surbhit Snigh, V. Srujankumar, Harsha Mudigonda; *Knowledge, Attitude, Practice of Hand Hygiene among Dental Students in Tertiary Care Teaching Hospital Khammam Telangana*; Int. J. Drug Res. Dental Sci., 2024; 6(3): 21-28, doi: <https://doi.org/10.36437/ijdrd.2024.6.3.D>

Source of Support: Nil, **Conflict of Interest:** Nil.

Received: 18-10-2024 **Revised:** 11-12-2024 **Accepted:** 29-12-2024