International Journal of Drug Research and Dental Science
Volume 7 Issue 2 (Page: 75-82), 2025 ISSN: 2582-0826

Knowledge and Attitude of Undergraduate Dental Students towards Research

Dr. V. Soumya[1]*, Dr. K. V. N. R. Pratap[2], Dr. T. Madhavi Padma[3], Dr. Srujan Kumar[4], Dr. Surbhit Singh[5], Dr. Y. Likhitha[6]

[1,6]Student, Department of Public Health Dentistry, Mamata Dental College, Khammam, India.
[2]Professor and HOD, Department of Public Health Dentistry, Mamata Dental College, Khammam, India.
[3]Professor, Department of Public Health Dentistry, Mamata Dental College, Khammam, India.
[4]Reader, Department of Public Health Dentistry, Mamata Dental College, Khammam, India.
[5]Senior Lecturer, Department of Public Health Dentistry, Mamata Dental College, Khammam, India.

Original Article

***Corresponding Author**: Dr. V. Soumya**,** Department of Public Health Dentistry, Mamata Dental College, Khammam, India.
E-mail: soumyavattimalla3579@gmail.com
Crossref doi: https://doi.org/10.36437/ijdrd.2025.7.2.I

ABSTRACT

Background: Research is a fundamental component of evidence-based dental practice. Understanding the attitude and knowledge of undergraduate dental students towards research can help identify gaps and promote a culture of scientific inquiry.
Objective: This study aimed to assess the attitude and knowledge of undergraduate dental students regarding research, and to explore factors influencing their engagement in research activities.
Methods: A cross-sectional survey was conducted among undergraduate dental students using a structured questionnaire. The questionnaire assessed students' knowledge of research concepts, their attitudes towards research, and perceived barriers to participation. Data were analyzed using descriptive statistics and inferential tests to identify significant associations.
Results: The majority of students demonstrated a positive attitude towards research, recognizing its importance in clinical practice and academic development. However, knowledge scores varied significantly across different academic years, with senior students showing greater awareness of research methodology. Time constraints, lack of mentorship, and insufficient training were identified as major barriers to active research participation.
Conclusion: While dental students generally value the role of research, gaps in knowledge and practical challenges hinder their active involvement. Integrating structured research training and mentorship into the undergraduate curriculum may enhance student participation and competence in research.

Keywords: Academic Research, Dental Education, Dental Students, Research Knowledge.

Introduction

Research plays a vital role in the advancement of dental science and the delivery of evidence-based clinical care. In today's rapidly evolving healthcare environment, the integration of research into dental education is essential for cultivating critical thinking, scientific reasoning, and a lifelong commitment to learning. Undergraduate dental students are at a crucial stage where foundational attitudes and knowledge about research are formed, shaping their future engagement in academic and clinical inquiry.

Despite the recognized importance of research in dentistry, there is often a disparity between students' interest and their actual involvement in research activities. Factors such as curriculum structure, lack of exposure, limited mentorship, and insufficient training can influence students' perceptions and participation. Understanding the level of knowledge and attitude towards research among dental students is necessary to address these gaps and foster a more research-oriented academic culture. This study aims to evaluate the attitude and knowledge of undergraduate dental students towards research, identify key barriers they face, and provide insights that can inform curriculum development and educational strategies to enhance research engagement.

Methodology

To assess the knowledge and attitude of undergraduate dental students towards research and identify factors influencing their involvement and perception of research activities.

Objectives

1. To evaluate the level of knowledge undergraduate dental students possess about research principles and methodologies.
2. To assess the attitudes of dental students towards participation in research activities.
3. To identify perceived barriers and motivators influencing students' engagement in research.
4. To analyze the correlation between students' academic year and their research knowledge and attitude.
5. To provide recommendations for enhancing research awareness and involvement among dental undergraduates.

Study design and area: A cross sectional study was carried out at Mamata Dental College, Khammam, Telangana

Study population: The health care students included a total of 201 dental students of all years.

Study instrument: A protested offline questionnaire was given consisting of 13 questions each participant had to fill in their demographic data like name, gender, age and year of study. Participants had to select one option from the answers provided against each question.

Sampling Methodology: The Sampling methodology used is convenience Sampling.
Inclusion Criteria: Students who were present on the day of study and were willing to participate are included.

Exclusion criteria: Students who were absent on the day of the study and who did not give their Consent were excluded.

Organizing the study: The study was designed in a paper based version of the self-administered questionnaire of 13 questions focusing on knowledge and awareness includes the sections of demographic data.

Result

A total Of 221 students in this study with females 63.8% and males 36.2% of age of participants ranging from 18 -26 years in this study females were more likely to demonstrate perception significantly interns showed greater familiarity with advanced applications than 1St 2nd 3rd 4Th year students.

	N	Minimum	Maximum	Mean	Std. Deviation
Age	221	18	26	21.62	1.604

Gender		Frequency	Percent
Valid	MALE	80	36.2
	FEMALE	141	63.8
	Total	221	100.0

Year of Study		Frequency	Percent
Valid	1BDS	34	15.4
	2BDS	38	17.2
	3BDS	27	12.2
	4BDS	46	20.8
	INTERN	76	34.4
	Total	221	100.0

Distribution and comparison of responses based on gender

Item	Response	Males		Females		Chi-Square value	P value
		n	%	n	%		
Q1	1	2	33.3	4	66.7	0.486	0.922
	2	5	35.7	9	64.3		
	3	2	25	6	75		
	4	71	36.8	122	63.2		
Q2	1	12	34.3	23	65.7	1.211	0.750
	2	13	39.4	20	60.6		
	3	54	36.7	93	63.3		
	4	1	16.7	5	83.3		
Q3	1	12	46.2	14	53.8	2.900	0.407
	2	15	39.5	23	60.5		
	3	52	34.7	98	65.3		
	4	1	14.3	6	85.7		
Q4	1	18	41.9	25	58.1	2.226	0.527

	2	17	41.5	24	58.5		
	3	43	33.6	85	66.4		
	4	2	22.2	7	77.8		
Q5	1	17	48.6	18	51.4	5.165	0.160
	2	13	44.8	16	55.2		
	3	49	32.5	102	67.5		
	4	1	16.7	5	83.3		
Q6	1	13	48.1	14	51.9	4.972	0.174
	2	15	48.4	16	51.6		
	3	50	31.8	107	68.2		
	4	2	33.3	4	66.7		
Q7	1	24	44.4	30	55.6	2.311	0.510
	2	12	36.4	21	63.6		
	3	40	32.5	83	67.5		
	4	4	36.4	7	63.6		
Q8	1	21	41.2	30	58.8	3.071	0381
	2	11	42.3	15	57.7		
	3	47	34.6	89	65.4		
	4	1	12.5	7	87.5		
Q9	1	27	46.6	31	53.4	5.544	0.136
	2	14	33.3	28	66.7		
	3	38	33.9	74	66.1		
	4	1	11.1	8	88.9		
Q10	1	48	41	69	59	3.277	0.351
	2	5	41.7	7	58.3		
	3	25	29.8	59	70.2		
	4	2	25	6	75		
Q11	1	17	37	29	63	1.378	0.711
	2	14	34.1	27	65.9		
	3	47	37.9	77	62.1		
	4	2	20	8	80		
Q12	1	31	38.8	49	61.3	3.172	0.366
	2	10	45.5	12	54.5		
	3	38	34.2	73	65.8		
	4	1	12.5	7	87.5		
Q13	1	32	39.5	49	60.5	13.115	**0.004***
	2	16	64	9	36		
	3	31	29	76	71		
	4	1	12.5	7	87.5		

P≤0.05 is statistically significant

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
		n	%	n	%	n	%	n	%	n	%		
Q1	1	1	16.7	0	0	0	0	1	66.7	4	66.7	25.533	**0.012***
	2	0	0	0	0	0	0	5	64.3	9	64.3		
	3	0	0	0	0	0	0	2	75	6	75		
	4	33	17.1	38	19.7	27	14	38	29.5	57	29.5		
Q2	1	8	22.9	2	5.7	1	2.9	9	25.7	15	42.9	19.500	0.077
	2	4	12.1	6	18.2	2	6.1	9	27.3	12	36.4		
	3	22	15	30	20.4	24	16.3	25	17	46	31.3		
	4	0	0	0	0	0	0	3	50	3	50		
Q3	1	8	30.	3	11.5	1	3.8	6	23.1	8	30.8	18.924	0.090
	2	4	10.5	6	15.8	2	5.3	8	21.1	18	47.4		
	3	22	14.7	29	19.3	24	16	29	19.3	46	30.7		
	4	0	0	0	0	0	0	3	42.9	4	57.1		
Q4	1	10	23.3	8	18.6	4	9.3	8	18.6	13	30.2	13.442	0.338
	2	7	17.1	10	24.4	6	14.6	8	19.5	10	24.4		
	3	17	13.3	20	15.6	17	13.3	27	21.1	47	36.7		
	4	0	0	0	0	0	0	3	33.3	6	66.7		
Q5	1	9	25.7	4	11.4	1	2.9	6	17.1	15	42.9	14.976	0.243
	2	5	17.2	5	17.2	3	10.3	5	17.2	11	37.9		
	3	20	13.2	29	19.2	23	15.2	32	21.2	47	31.1		
	4	0	0	0	0	0	0	3	50	3	50		
Q6	1	9	33.3	3	11.1	1	3.7	5	18.5	9	33.3	14.721	0.257
	2	5	16.1	6	19.4	4	12.9	5	16.1	11	35.5		
	3	20	12.7	29	18.5	22	14	34	21.7	52	33.1		

	4	0	0	0	0	0	0	2	33.3	4	66.7		
Q7	1	15	27.8	9	16.7	7	13	11	20.4	12	22.2	18.549	0.100
	2	2	6.1	5	15.2	3	9.1	9	27.3	14	42.4		
	3	17	13.8	23	18.7	17	13.8	23	18.7	43	35		
	4	0	0	1	9.1	0	0	3	27.3	7	63.6		
Q8	1	14	27.5	9	17.6	8	15.7	11	21.6	9	17.6	22.160	**0.036***
	2	3	11.5	6	23.1	1	3.8	3	11.5	13	50		
	3	17	12.5	23	16.9	18	13.2	29	21.3	49	36		
	4	0	0	0	0	0	0	3	37.5	5	62.5		
Q9	1	15	25.9	13	22.4	9	15.5	11	19	10	17.2	23.238	**0.026***
	2	3	7.1	9	21.4	3	7.1	10	23.8	17	40.5		
	3	16	14.3	16	14.3	15	13.4	22	19.6	43	38.4		
	4	0	0	0	0	0	0	3	33.3	6	66.7		
Q10	1	22	18.8	28	23.9	15	12.8	22	18.8	30	25.6	25.928	**0.011***
	2	0	0	1	8.3	0	0	2	16.7	9	75		
	3	12	14.3	9	10.7	12	14.3	19	22.6	32	38.1		
	4	0	0	0	0	0	0	3	37.5	5	62.5		
Q11	1	13	28.3	3	6.5	7	15.2	9	19.6	14	30.4	35.896	**0.001***
	2	0	0	7	17.1	2	4.9	15	36.6	17	41.5		
	3	21	16.9	28	22.6	18	14.5	19	15.3	38	30.6		
	4	0	0	0	0	0	0	3	30	7	70		
Q12	1	14	17.5	9	11.2	11	13.8	18	22.5	28	35	31.675	**0.002***
	2	1	4.5	1	4.5	0	0	5	22.7	15	68.2		
	3	19	17.1	28	25.2	16	14.4	21	18.9	27	24.3		
	4	0	0	0	0	0	0	2	25	6	75		
Q13	1	13	16	10	12.3	8	9.9	17	21	33	40.7	34.863	**0.001***

	2	0	0	3	12	0	0	5	20	17	68		
	3	20	18.7	25	23.4	19	17.8	22	20.6	21	19.6		
	4	1	12.5	0	0	0	0	2	25	5	62.5		

P≤0.05 is statistically significant

Discussion

The findings of this study highlight a moderate level of knowledge and a generally positive attitude among undergraduate dental students towards research. While many students understand the importance of research in advancing dental science and improving clinical practice, there appears to be a gap in practical knowledge of research methodologies and statistical tools.

Senior students, particularly those in their internship, tended to exhibit better research knowledge and more favorable attitudes, likely due to increased exposure through coursework or clinical research projects. However, a significant portion of the respondents reported limited hands-on research experience and expressed uncertainty in designing or conducting independent research studies.

Common barriers identified included lack of time, insufficient mentorship, and limited access to research resources or funding. On the other hand, factors that encouraged participation included curiosity, the desire to improve patient care, and the perceived value of research for postgraduate studies and career advancement.

These findings are consistent with previous studies conducted in similar settings, suggesting a global need for improved integration of research training in undergraduate dental curricula. Enhancing early exposure to research, offering mentorship opportunities, and integrating research methodology as a compulsory part of the curriculum may help bridge the gap between interest and active participation.

Conclusion

In conclusion, while undergraduate dental students generally hold a positive attitude towards research, their knowledge and practical exposure remain limited. Addressing the identified barriers and implementing structured research training within the dental curriculum is crucial. By fostering a supportive research culture and providing opportunities for active engagement, dental institutions can cultivate a new generation of research-oriented practitioners who contribute meaningfully to evidence-based dentistry.

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How to cite this Article: V. Soumya, K. V. N. R. Pratap, T. Madhavi Padma, Srujan Kumar, Surbhit Singh, Y. Likhitha; *Knowledge and Attitude of Undergraduate Dental Students towards Research;* Int. J. Drug Res. Dental Sci., 2025; 7(2): 75-82, **doi:** https://doi.org/10.36437/ijdrd.2025.7.2.I
Source of Support: Nil, **Conflict of Interest:** Nil.
Received: 11-2-2025 **Revised:** 21-4-2025 **Accepted:** 28-4-2025