ISSN: 2347-6567

International Journal of Allied Medical Sciences and Clinical Research (IJAMSCR)

IJAMSCR | Vol.14 | Issue 1| Jan - Mar - 2026

www.ijamscr.com

DOI : https://doi.org/10.61096/ijamscr.v14.iss1.2026.259-266

Embracing Personalised Medicine in Dentistry

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Published by: 06.03.26

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Abstract: Personalized medicine is a progressing area in which physicians use diagnostic tests to identify particular biological markers, often genetic, that aid in describing which medical treatments, as well as technique, will work best for each patient. In today's science, researchers are rapidly emerging and using diagnostic tests in medical diagnosis based on genomic, proteomics, and metabolomics to enhance and prophesy patient's reactions to targeted therapy. This area designated as "personalized medicine" conglomerates human genome, information technology, and biotechnology with nanotechnology to provide cure based on specific difference set against population trends.

Aim: To evaluate the knowledge with regard to precise risk factors compromising the novel concepts of genetics to enable different medical facilities to individual who pertaining require it and improve patient's oral health.

Objectives: To assess the knowledge with regard to precise risk factors compromising the novel concepts of genetics to enable different medical facilities to individual who pertaining require it and improve patient's oral health. To assess the knowledge of undergraduate dental students with regard to precise risk factors compromising the novel concepts of genetics to enable different medical facilities to individual who pertaining require it and improve patient's oral health.

Method: A cross-sectional survey was conducted among 201 dental students, comprising 63 males (31.3%) and 138 females (68.7%), including. The survey included 14 questions exploring the knowledge about embracing personalized medicine in dentistry among health care students were analyzed based on gender, age and year of study using chi-square tests to identify statistically significant differences.

Keywords: Dentistry, oral cancer, orthodontics, personalized medicine, periodontics.

INTRODUCTION:

Personalized medicine now in the age of genomics means we are living in dynamic times. The big question right now is how do we take all this new information we have gathered and use it for the benefit of the patient. Although personalized medicine in the medical field is escalating and becoming more common, in dentistry it is still in infancy and there are not yet enough products in the market that have penetrated the average consciences of the patient. Exploration and advancement in personalized medicine is a rapidly growing domain, as reviled by numerous medical publications. Most of the available literature stressed on genetic analysis, health information management, biomarker detection, and targeted therapies. Distinguishing a diseased individual from others with similar clinical presentations forms the basis of precision dentistry and medicine. The principle in treatment involves targeting patient's precise needs on the source of genetic, biomarker, epigenetic, and socioeconomics. The objective is to reduce errors in diagnosis, develop outcomes, and elude needless side effects. Precision medicine is poised to profoundly transform how clinicians approach health care This article will explore the foundations of individualized therapy as well as the challenges and future opportunities for precision health care.

METHODOLOGY:

a. Study design and area: A cross-sectional study was carried out at tertiary care teaching hospital khammam.
b. Study population: The health care students including those of first year to final year dental students who responded to the offline paper print questionnaire survey.
c. Study instrument: A self-administered questionnaire was designed based on EMBRACING PERSONALIZED MEDICINE IN DENTISTRY among health care students had a total 14 questions. Each participant has to fill their demographic data like name, age and year of study. Participants have to select option from the answers provided against questions and the questions were based on Embracing personalized medicine in dentistry among health care students.
d. Pilot study: A pilot study was conducted on a group of students to assess the validity and reliability of study
e. Sampling method: The sampling method used is convenience method
f. Inclusion criteria: The students who were interested in study and who are 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 14 questions focusing on knowledge, awareness.
   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.
i. Statistical analysis: Data from the filled questionnaire was conducted in a tabular form in an excel worksheet and evaluated for analysis.

RESULTS:

A total of 201 students took part in this with females (68.7) and male of (31.3). Age of the participants ranging from 18-25 years. In this study females were more likely to demonstrate perception in dissection room experiences than male. Significantly third years showed greater familiarity with advanced applications than first, second and fourth-year students.

AGE

	N	Minimum	Maximum	Mean	Std. deviation
Age	201	18	23	21.79	1.312

GENDER

	Frequency	Percent
Male	63	31.3
Female	138	68.7
Total	201	100.0

YEAR OF STUDY

		Frequency	Percent
Valid	IBDS	50	24.9
	IIBDS	35	14.9
	IIIBDS	60	29.9
	IVBDS	56	27.9
	Total	201	100.0

Distribution and comparison of responses based on gender:

Item	Response	Males		Females		Chi square value	P value
		n	%	n	%		
Q1	1	53	32.3	111	67.7	4.464	0.06
	2	6	40	9	60		
	3	4	20	16	80		

Item	Response	Males		Females		Chi square value	P value
		n	%	n	%		
Q2	1	39	26.8	106	73.1	6.356	0.436
	2	11	44	14	56		
	3	13	41.9	18	58.1		

Item	Response	Males		Females		Chi square value	P value
		n	%	n	%		
Q3	1	3	30	7	70	4.898	0.179
	2	39	32.8	80	67.2		
	3	10	45.5	12	54.5		
	4	11	20.4	39	79.6		

Item	Response	Males		Females		Chi square value	P value
		n	%	n	%		
Q4	1	6	50	6	50	2.656	0.448
	2	23	31.1	51	68.9		
	3	16	33.3	32	66.7		
	4	18	26.9	49	73.1		

Item	Response	Males		Females		Chi square value	P value
		n	%	n	%		
Q5	1	9	47.4	10	52.6	2.995	0.224
	2	7	24.1	22	75.9		

	3	47	30.7	106	69.3		
	4	0	0	0	0		

Item	Response	Males		Females		Chi square value	P value
		n	%	n	%		
Q6	1	25	39.7	55	73.3	5.464	0.06
	2	18	28.6	45	71.4		
	3	0	0	0	0		
	4	20	26.7	55	73.3		

Item	Response	Males		Females		Chi square value	P value
		n	%	n	%		
Q7	1	6	31.6	13	68.4	0.754	0.860
	2	6	24	19	26		
	3	31	31	66	68		
	4	20	20	40	66.7		

Item	Response	Males		Females		Chi square value	P value
		n	%	n	%		
Q8	1	6	60	4	40	4.558	0.205
	2	9	32.1	19	67.9		
	3	44	30.3	101	69.7		
	4	4	22.2	14	77.8		

Item	Response	Males		Females		Chi square value	P value
		n	%	n	%		
Q9	1	12	60	8	40	13.310	0.001
	2	47	31.8	101	68.2		
	3	4	12.1	29	87.9		
	4	0	0	0	0		

Item	Response	Males		Females		Chi square value	P value
		n	%	n	%		
Q10	1	5	62.5	3	37.5	10.264	0.016
	2	9	42.9	12	57.1		
	3	41	33.3	82	66.7		
	4	8	16.3	41	83.7		

Item	Response	Males		Females		Chi square value	P value
		n	%	n	%		
Q11	1	6	66.7	3	33.3	6.915	0.075
	2	15	31.9	46	68.1		
	3	4	28.6	10	71.4		
	4	8	21.6	29	78.4		
	5	11	46.6	13	53.4		
	6	20	55.4	17	43.6		
	7	4	16.2	20	83.8		

Item	Response	Males		Females		Chi square value	P value
		n	%	n	%		
Q12	1	6	66.7	3	33.3	8.745	0.03
	2	12	21.8	43	78.2		
	3	30	36.1	53	63.9		

Item	Response	Males		Females		Chi square value	P value
		n	%	n	%		
Q13	1	26	32.9	53	67.1	8.505	0.037
	2	6	50	6	50		
	3	12	38.6	35	61.4		
	4	9	17	14	83		
	5	2	12.4	12	87.6		
	6	3	50	3	50		
	7	4	40.5	11	59.5		
	8	1	20	4	80		

Item	Response	Males		Females		Chi square value	P value
		n	%	n	%		
Q14	1	5	33.3	10	66.7	2.656	0.328
	2	13	38.2	21	61.8		
	3	15	34.7	47	65.3		
	4	20	25	30	75		
	5	3	12.5	11	87.5		
	6	4	50	4	50		
	7	3	16.2	15	83.8		

Distribution and comparison of responses based on year of study

Item	Response	IBDS		IIBDS		IIIBDS		IVBDS		Chi square value	P value
		n	%	n	%	n	%	n	%		
Q1	1	15	30	5	14.2	15	25	14	25	12.545	0.435
	2	20	40	25	71.4	30	50	35	62.5		
	3	15	30	5	14.2	15	25	7	12.5		

Item	Response	IBDS		IIBDS		IIIBDS		IVBDS		Chi square value	P value
		n	%	n	%	n	%	n	%		
Q2	1	10	20	4	19	14	23.3	3	5.3	5.545	0.01
	2	25	50	17	16	4	6.6	12	21.4		
	3	15	50	14	12.4	42	70	41	73.2		

Item	Response	IBDS		IIBDS		IIIBDS		IVBDS		Chi square value	P value
		n	%	n	%	n	%	n	%		
Q3	1	10	20	6	10	10	16.6	1	1.7	15.262	0.227
	2	20	40	18	15.1	39	65	36	64.2		
	3	10	20	2	9.1	6	10	5	8.9		
	4	10	20	9	18.4	5	8.3	14	25		

Item	Response	IBDS		IIBDS		IIIBDS		IVBDS		Chi square value	P value
		n	%	n	%	n	%	n	%		

Q4	1	5	10	7	16.7	3	5	3	5.3	7.305	0.837
	2	20	40	11	14.9	26	43.3	16	28.5		
	3	10	20	9	18.8	13	21.6	12	21.4		
	4	15	30	8	11.9	18	30	25	44.6		

Item	Response	IBDS		IIBDS		IIIBDS		IVBDS		Chi square value	P value
		n	%	n	%	n	%	n	%		
Q5	1	12	24	2	10.5	6	10	2	3.5	12.662	0.124
	2	15	30	5	17.2	9	15	4	7.1		
	3	10	20	23	15	40	66.6	40	71.4		
	4	13	26	5	14.2	5	8.3	10	17.8		
Item	Response	IBDS		IIBDS		IIIBDS		IVBDS		Chi square value	P value
		n	%	n	%	n	%	n	%		
Q6	1	11	22	5	14.2	8	13.3	9	16	12.655	0.124
	2	20	40	8	12.7	26	43.3	10	17.8		
	3	10	20	9	14.3	16	26.6	10	17.8		
	4	9	18	13	17.3	10	16.6	27	48.2		

Item	Response	IBDS		IIBDS		IIIBDS		IVBDS			
		n	%	n	%	n	%	n	%	Chi square value	P value
Q7	1	10	20	6	10.5	7	11.6	12	21.4	22.630	0.031
	2	6	8	5	20	8	13.3	14	25		
	3	22	44	16	14.4	32	53.3	20	35.7		
	4	12	24	8	15	13	21.6	10	17.8		

Item	Response	IBDS		IIBDS		IIIBDS		IVBDS		Chi square value	P value
		n	%	n	%	n	%	n	%		
Q8	1	8	16	1	10	8	13.3	14	25	27.567	0.006
	2	8	16	6	21.4	9	15	10	17.8		
	3	27	54	22	15.2	40	66.6	10	17.8		
	4	7	14	6	5.6	3	5	22	39.2		

Item	Response	IBDS		IIBDS		IIIBDS		IVBDS		Chi square value	P value
		n	%	n	%	n	%	n	%		
Q9	1	9	18	5	20	8	13.3	11	19.6	11.931	0.154
	2	10	20	3	15	5	8.3	2	3.5		
	3	21	42	22	14.9	39	65	35	62.5		
	4	11	22	5	15.2	8	13.3	8	14.2		

Item	Response	IBDS		IIBDS		IIIBDS		IVBDS		Chi square value	P value
		n	%	n	%	n	%	n	%		
Q10	1	1	2	3	37.5	3	5	1	1.7	20.541	0.058
	2	10	20	7	4.8	6	10	2	3.5		
	3	25	50	18	14.6	39	65	38	67.8		
	4	14	28	7	16.3	12	20	15	26.7		

Item	Response	IBDS		IIBDS		IIIBDS		IVBDS		Chi square value	P value
		n	%	n	%	n	%	n	%		
Q11	1	7	14	2	5.7	2	33.3	8	14.2	21.183	0.048
	2	5	10	4	11.4	10	16.6	6	10.7		

	3	6	12	6	17.1	5	8.3	9	16		
	4	9	18	2	5.7	10	16.6	5	8.9		
	5	14	28	7	16.3	6	10	12	21.4		
	6	5	10	9	25.7	15	25	6	10.7		
	7	4	8	5	14.2	12	20	10	17.8		

Item	Response	IBDS		IIBDS		IIIBDS		IVBDS		Chi square value	P value
		n	%	n	%	n	%	n	%		
Q12	1	14	28	15	42.8	5	8.3	15	26.7	3.919	0.985
	2	15	30	9	25.7	10	16.6	16	2		
	3	21	42	11	31.4	45	75	25	44.6		

Item	Response	IBDS		IIBDS		IIIBDS		IVBDS		Chi square value	P value
		n	%	n	%	n	%	n	%		
Q13	1	9	18	8	22.8	2	33.3	3	5.3	17.566	0.130
	2	4	7	3	8.5	5	8.3	6	10.7		
	3	10	20	5	14.2	6	10	8	14.2		
	4	7	14	2	5.7	15	25	9	16		
	5	3	6	9	25.7	6	10	5	8.9		
	6	8	16	3	8.5	9	15	10	17.8		
	7	4	7	2	5.7	7	11.3	9	16		
	8	5	10	3	8.7	10	16.6	6	16		

Item	Response	IBDS		IIBDS		IIIBDS		IVBDS		Chi square value	P value
		n	%	n	%	n	%	n	%		
Q14	1	6	12	8	22.8	3	5	7	12.5	14.441	0.546
	2	7	14	5	14.2	6	10	4	7.1		
	3	9	18	2	5.7	4	6.6	20	35.7		
	4	10	20	6	17.1	8	13.3	8	14.2		
	5	4	7	9	25.7	9	15	9	16		
	6	8	16	4	19	7	11.3	3	5.3		
	7	6	12	1	2.8	23	38.3	5	8.9		

P<_0.05 is statistically significant.

DISCUSSION:

The study assessed Embracing personalized medicine in dentistry in Khammam city. The demographic analysis revealed that participants primarily between 18 and 25 years old, with a slight female majority (68.7%). Students from all academic levels, including final years were included. While a significant portion of students acknowledged the opinions on Embracing personalized medicine in dentistry and importance of personalized medicine, some lacked formal education on the subject. A considerable percentage expressed interest in various options in the personalized medicine in to the dental curriculum. There was a split in opinion regarding sharing patient related content, indicating a need for personalized medicine guidelines. Additionally, a notable number of students had experienced poor knowledge, which raises concerns about Embracing personalized medicine in dentistry.

CONCLUSION:

The study highlights the Embracing personalized medicine are directly or indirectly stated by the professional healthcare bodies. Hence, the teacher's role in the medical/dental profession would be to utilize the already developed concepts about personalized medicine by undergraduate students and facilitate the development of a holistic concept of personalized medicine. As an individual student, one may not have knowledge about personalized medicine as required by the health organizations. It can be noted when entire set of

collected responses are summarized, majority of the aspects of personalized medicine are covered. Hence, an appropriate teaching-learning methodology could be adapted to facilitate the exchange of ideas among the undergraduate students about the personalized medicine.

REFERENCES:

1. The Personalized Medicine Coalition. The basics (2016). http://www.personalized medicinecoalition.org/Userfiles/PMC-Corporate/file/The-Personalized-MedicineReport1.pdf .
2. The Personalized Medicine Coalition. The case for personalized medicine. 4th ed. Washington (DC): The Personalized Medicine Coalition; 2014.
3. Novartis Oncology. The precision nosology annual trend report: Perspectives from payers, oncologists and pathologists.2nd ed. East Hanover (NJ): Novartis Pharmaceuticals Corporation; 2016. Available from: http://www. Personalized medicine coalition.org/userfiles/ pmc corporate/file/pmc_the_case_for_ personalized_medicine.pdf