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**Research**

# Evaluation Of Knowledge And Awareness Among Undergraduate Dental Students Regarding The Emerging Trend Of Travel Medicine In Khammam City

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## Abstract

This study investigates dental students about awareness regarding emerging trend of travel medicine in Khammam city. Travellers play a significant role in spread of infections across various international borders through their travel patterns. Travellers not only play an important role in exposure to diseases for both themselves and the country they are visiting, but also bring about adverse health outcomes outside their home country, which may import various systemic diseases that are nonendemic to their country of origin. Travel medicine not only includes diagnosis, but also the treatment of returning travellers from the tour. A cross sectional survey was conducted among 201 undergraduate dental students focussing on their level of understanding and awareness regarding travel medicine. The results indicate moderate understanding among students regarding travel medicine. Statistical analysis highlights key areas where targeted education and understanding is needed to improve the knowledge among dental students regarding travel medicine in Khammam city. A total of 201 students took part with females 68.2% and males 31.8%. Age of participants ranges from 19-25. In this study, females have more knowledge than males and Interns have more knowledge followed by IV BDS students followed by III BDS students and II BDS students later by I BDS students. To assess attitudes among dental students towards the importance of travel medicine in Khammam city and to determine student's familiarity with travel medicine.

**Keywords:** Awareness, dental, vaccines, knowledge, students, travel medicine.

## INTRODUCTION

Travel medicine can be defined as the field of medicine concerned with the promotion of health for the people, cultures and environment of regions being visited in addition to the prevention of disease or other adverse health outcomes in the international traveller. It focuses primarily on pre-travel preventive care. Rates of international travel continue to grow substantially, with an unprecedented 1 billion travelers worldwide crossing international boundaries in 2012.This increasing globalization in travel increases the risk of travel-related illnesses and other health exposures; therefore, health care professionals need to accurately advise travelers about these potential risks. However, evidence sug - gests that the pretravel care provided to Canadian travelers, particularly immigrant travelers visiting friends and relatives (VFR), is likely suboptimal. However, Travel medicine is a rapidly evolving, highly dynamic, multidisciplinary specialty that requires expertise on various travel-related illnesses, as well as up-to-date knowledge on the global epidemiology of infectious and non-infectious health risks, health regulations and immunization requirements in various countries, and the changing patterns of drug-resistant infections. It is highly recommended that pre-travel care be rendered by practitioners who hold a certificate of knowledge in the field (eg, such as that provided by the International Society of Travel Medicine) and who have regular experience in advising travelers with varying and complex health conditions, destinations, and Itineraries. Certain travelers are considered high risk and should be evaluated by a travel medicine professional, such as immunocompromised patients, pregnant or breastfeeding women, young children, the elderly, patients with pre-existing medical conditions or chronic illnesses (eg, diabetes mellitus, chronic cardiac or pulmonary conditions, renal disease, mental health or psy-chiatric illness, thymus disorders, cancer, epilepsy or history of chronic convulsions or seizures, blood or clotting disorders), and those VFR (travelers that have migrated from a developing country to an industrialized region, and who are now returning to their country of birth).Compared with other groups of international travelers, those VFR (particularly children) experience a higher incidence of travel-related infectious diseases owing to their travel to higher-risk destinations, duration of travel, lack of awareness of risk and misconceptions regarding immunity, financial barriers, lack ofaccess to pretravel health care, and cultural and language barriers. Travelers not only play an important role in exposure to diseases for both themselves and the country they are visiting, but also bring about adverse health outcomes outside their home country, which may import various systemic diseases that are nonendemic to their country of origin. Many believe that travel medicine is new; to the best of our knowledge, the term was created and defined in the early 1980s, so the concept is old. Travel medicine not only includes diagnosis, but also the treatment of returning travelers from travel tour. In the today's era, every generation travels more frequently and at extended distances than the older generation with a mean increase of 30 million travelers per year from 1995 until today, thus making the physicians throughout the world tackle various new diseases every day. Due to a drastic increase in travel activity, especially to tropical countries, pretravel advice consultation is acquiring its importance, and all prospective travelers should have their health history reviewed for the possible health risks of the planned itinerary and should collect the information such as the dates, duration, routes, style of travel (budget/luxury), accommodations, and activities (business/leisure) prior to their travel schedule. Vaccinations must be personalized according to the individual traveler's immunization history, the countries to be visited, the type and duration of travel, and the amount of time available before depar-ture. Ideally, the health care provider should be consulted 2 to 3 months in advance of travel in order to allow suffcient time for optimal immunization schedules to be completed.

## 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 I,II,III,IV years and interns who responded to the online questionnaire sent through social media.
C) Study Instrument: A self administered questionnaire was designed based on knowledge attitude and practice had total 15 questions and through offline forms pro link. Each participant has to fill 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 and awareness regarding milk and dairy products among dental 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 purpose of study was explained in short note participants were asked to select one option from the answers provided against the questions.
I) Statistical analysis: Data from the filled questionnaire was conducted in a tabular form in an excel worksheet and evaluated for analysis. The analysis was performed by SPSS version 29.

**Aim & Objective**

To assess knowledge and awareness among undergraduate dental students regarding the emerging trend of travel medicine in Khammam city. To determine the knowledge among undergraduate dental students among the emerging trend of travel medicine. To determine the awareness among undergraduate dental students among the emerging trend of travel medicine. A total 201 students took part with female 68.2% and male 31.8%. Age of participants ranges from 19-25. In this study females have more knowledge than males and interns have more knowledge followed by IV BDS students followed by III BDS students followed by II BDS students later by I BDS students. A cross-sectional survey was conducted among 201 dental students, comprising 137 females (68.2%) and 64 males (31.8%), including first year, second year, third year, fourth year students and interns. The survey included 15 questions regarding awareness and knowledge among undergraduate dental students related to travel medicine in Khammam city. Responses were analysed based on gender, year of study using chi-square tests to identify statistically significant disparities.

## RESULTS

A total 201 students took part with female 68.2% and male 31.8%. Age of participants ranges from 19-25years. In this study, females have more knowledge than males. While, Interns have more knowledge followed by fourth year students followed by Third year students followed by second year students later by first year students.

**Descriptive Statistics:**

**Age**

| | N | Minimum | Maximum | Mean | Std.Deviation |
|---|---|---|---|---|---|
| Age | 201 | 19 | 34 | 22.8 | 1.306 |

**Gender**

| | Frequency | ValidPercent | Cumulative percent |
|---|---|---|---|
| Male | 64 | 31.8 | 31.8 |
| Female | 137 | 68.2 | 100.0 |
| Total | 201 | 100.0 | |

**Year of study**

| | Frequency | Percent | Valid percent | Cumulative percent |
|---|---|---|---|---|
| I BDS | 9 | 4.5 | 4.5 | 4.5 |
| II BDS | 33 | 16.4 | 16.4 | 20.9 |
| III BDS | 33 | 16.4 | 16.4 | 37.3 |
| IV BDS | 52 | 25.9 | 25.9 | 63.3 |
| INTERNS | 74 | 36.8 | 36.8 | 100.0 |
| TOTAL | 201 | 100.0 | 100.0 | |

**Distribution and comparison of responses based on gender**

| Item | Response | Males | | Females | | Chi-square value | P value |
|---|---|---|---|---|---|---|---|
| | | n | % | n | % | | |
| Q1 | 1 | 48 | 75.0 | 107 | 78.1 | 3.173 | 0.02 |
| | 2 | 2 | 3.1 | 7 | 5.1 | | |
| | 3 | 10 | 15.6 | 15 | 10.9 | | |
| | 4 | 4 | 6.2 | 8 | 5.8 | | |
| Q2 | 1 | 4 | 6.2 | 15 | 10.9 | 12.485 | 0.05 |
| | 2 | 5 | 7.8 | 7 | 5.1 | | |
| | 3 | 26 | 40.6 | 84 | 61.3 | | |
| | 4 | 29 | 45.3 | 31 | 22.6 | | |
| Q3 | 1 | 8 | 38.1 | 13 | 61.9 | 5.219 | 0.156 |
| | 2 | 10 | 31.2 | 22 | 68.8 | | |
| | 3 | 19 | 44.2 | 24 | 55.8 | | |
| | 4 | 27 | 25.7 | 78 | 74.3 | | |
| Q4 | 1 | 49 | 74.7 | 87 | 75.3 | 4.230 | 0.238 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2 | 15 | 25.3 | 50 | 57.1 | | |
| Q5 | 1 | 45 | 84.5 | 89 | 79.5 | 14.237 | 0.06 |
| | 2 | 19 | 15.7 | 48 | 24.3 | | |
| Q6 | 1 | 38 | 55.6 | 98 | 83.8 | 3.231 | 0.004 |
| | 2 | 26 | 44.4 | 39 | 17.2 | | |
| Q7 | 1 | 8 | 20.5 | 31 | 79.5 | 7.713 | 0.05 |
| | 2 | 14 | 51.9 | 13 | 48.1 | | |
| | 3 | 10 | 27 | 27 | 73 | | |
| | 4 | 32 | 32.7 | 66 | 67.3 | | |
| Q8 | 1 | 16 | 25 | 48 | 75 | 3.201 | 0.362 |
| | 2 | 11 | 44 | 14 | 56 | | |
| | 3 | 16 | 32 | 34 | 68 | | |
| | 4 | 21 | 33.9 | 41 | 66.1 | | |
| Q9 | 1 | 11 | 30.6 | 25 | 69.4 | 2.874 | 0.411 |
| | 2 | 12 | 30.8 | 27 | 69.2 | | |
| | 3 | 12 | 46.2 | 14 | 53.8 | | |
| | 4 | 29 | 29 | 71 | 71 | | |
| Q10 | 1 | 17 | 28.3 | 43 | 71.7 | 1.515 | O.679 |
| | 2 | 11 | 31.4 | 24 | 68.6 | | |
| | 3 | 16 | 29.6 | 38 | 70.4 | | |
| | 4 | 20 | 38.5 | 32 | 61.5 | | |
| Q11 | 1 | 21 | 53.8 | 18 | 46.2 | 12.665 | 0.06 |
| | 2 | 8 | 33.3 | 16 | 66.7 | | |
| | 3 | 24 | 22.9 | 81 | 77.1 | | |
| | 4 | 11 | 33.3 | 22 | 66.7 | | |
| Q12 | 1 | 50 | 83.7 | 119 | 86.3 | 18.048 | 0.01 |
| | 2 | 14 | 17.2 | 18 | 13.7 | | |
| Q13 | 1 | 24 | 52.2 | 22 | 47.8 | 13.654 | 0.534 |
| | 2 | 7 | 33.3 | 14 | 66.7 | | |
| | 3 | 23 | 21.9 | 82 | 78.1 | | |
| | 4 | 10 | 34.5 | 19 | 65.5 | | |
| Q14 | 1 | 27 | 50.9 | 26 | 49.1 | 13.722 | 0.066 |
| | 2 | 10 | 34.5 | 19 | 65.5 | | |
| | 3 | 23 | 22.1 | 81 | 77.9 | | |
| | 4 | 4 | 26.7 | 11 | 73.3 | | |
| Q15 | 1 | 27 | 42.1 | 35 | 25.5 | 12.426 | 0.006 |
| | 2 | 13 | 20.3 | 17 | 12.4 | | |
| | 3 | 19 | 29.6 | 7 | 56.2 | | |
| | 4 | 5 | 7.8 | 8 | 5.8 | | |

*P≤0.05 is statistically significant*

**Distribution and comparison of responses based on year of study**

| Item | Response | I BDS | | II BDS | | III BDS | | IV BDS | | Intern | | Chi-Value | P-Value |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | n | % | n | % | n | % | n | % | n | % | | |
| Q1 | 1 | 7 | 77.7 | 24 | 72.7 | 26 | 78.7 | 35 | 67.3 | 44 | 59.4 | 26.673 | 0.004 |
| | 2 | 2 | 22.2 | 2 | 6.0 | 2 | 6.0 | 1 | 1.9 | 4 | 5.4 | | |
| | 3 | 0 | 0 | 4 | 12.1 | 3 | 9.0 | 14 | 26.9 | 24 | 32.4 | | |
| | 4 | 0 | 0 | 3 | 9.0 | 2 | 6.0 | 2 | 3.8 | 2 | 2.7 | | |
| Q2 | 1 | 3 | 15.8 | 5 | 26.3 | 1 | 5.3 | 1 | 5.3 | 9 | 47.4 | 24.096 | 0.06 |
| | 2 | 0 | 0 | 3 | 25 | 1 | 8.3 | 4 | 33.3 | 4 | 33.3 | | |
| | 3 | 3 | 2.7 | 17 | 15.5 | 14 | 12.7 | 30 | 27.3 | 46 | 41.8 | | |
| | 4 | 3 | 5 | 8 | 13.3 | 17 | 28.3 | 17 | 28.3 | 15 | 25 | | |
| Q3 | 1 | 2 | 9.5 | 7 | 33.3 | 3 | 14.3 | 4 | 19 | 5 | 23.8 | 9.727 | 0.640 |
| | 2 | 1 | 3.1 | 7 | 21.9 | 4 | 12.5 | 9 | 28.1 | 11 | 34.4 | | |
| | 3 | 2 | 4.7 | 7 | 16.3 | 7 | 16.3 | 10 | 23.3 | 17 | 39.5 | | |
| | 4 | 4 | 3.8 | 12 | 11.4 | 19 | 18.1 | 29 | 27.6 | 41 | 39 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q4 | 1 | 4 | 5.5 | 11 | 15.1 | 10 | 13.7 | 18 | 24.7 | 30 | 41.1 | 5.351 | 0.945 |
| | 2 | 2 | 4.8 | 10 | 23.8 | 7 | 16.7 | 10 | 23.8 | 13 | 31 | | |
| Q5 | 1 | 9 | 7.7 | 26 | 10.3 | 37 | 17.9 | 42 | 20.5 | 69 | 43.6 | 14.106 | 0.294 |
| | 2 | 0 | 0 | 7 | 25 | 6 | 21.4 | 10 | 35.7 | 5 | 17.9 | | |
| Q6 | 1 | 7 | 2.4 | 25 | 16.7 | 26 | 21.4 | 44 | 28.6 | 61 | 31 | 7.743 | 0.805 |
| | 2 | 2 | 5.3 | 8 | 21.1 | 7 | 18.4 | 8 | 21.1 | 13 | 34.2 | | |
| Q7 | 1 | 1 | 2.6 | 7 | 17.9 | 7 | 17.9 | 12 | 30.8 | 12 | 30.8 | 9.985 | 0.617 |
| | 2 | 2 | 7.4 | 3 | 11.1 | 3 | 11.1 | 7 | 25.9 | 12 | 44.4 | | |
| | 3 | 4 | 10.8 | 8 | 21.6 | 4 | 10.8 | 9 | 24.3 | 12 | 32.4 | | |
| | 4 | 2 | 2 | 15 | 15.3 | 19 | 19.4 | 24 | 24.5 | 38 | 38.8 | | |
| Q8 | 1 | 4 | 6.2 | 8 | 12.5 | 11 | 17.2 | 15 | 23.4 | 26 | 40.6 | 15.342 | 0.223 |
| | 2 | 0 | 0 | 6 | 24 | 2 | 8 | 4 | 16 | 13 | 52 | | |
| | 3 | 4 | 8 | 9 | 18 | 6 | 12 | 12 | 24 | 19 | 38 | | |
| | 4 | 1 | 1.6 | 10 | 16.1 | 14 | 22.6 | 21 | 33.9 | 16 | 25.8 | | |
| Q9 | 1 | 1 | 2.8 | 7 | 19.4 | 7 | 19.4 | 12 | 33.3 | 9 | 25 | 7.847 | 0.797 |
| | 2 | 2 | 5.1 | 6 | 15.4 | 7 | 17.9 | 6 | 15.4 | 18 | 46.2 | | |
| | 3 | 2 | 7.7 | 3 | 11.5 | 4 | 15.4 | 9 | 34.6 | 8 | 30.8 | | |
| | 4 | 4 | 4 | 17 | 17 | 15 | 34.6 | 25 | 25 | 39 | 39 | | |
| Q10 | 1 | 2 | 3.3 | 11 | 18.3 | 11 | 18.3 | 14 | 23.3 | 22 | 36.7 | 7.788 | 0.801 |
| | 2 | 1 | 2.9 | 8 | 22.9 | 4 | 11.4 | 9 | 25.7 | 13 | 37.1 | | |
| | 3 | 3 | 5.6 | 10 | 18.5 | 8 | 14.8 | 17 | 31.5 | 16 | 29.6 | | |
| | 4 | 3 | 5.8 | 4 | 7.7 | 10 | 19.2 | 12 | 23.1 | 23 | 44.2 | | |
| Q11 | 1 | 2 | 5.1 | 6 | 15.4 | 7 | 17.9 | 11 | 28.2 | 13 | 33.3 | 2.828 | 0.997 |
| | 2 | 1 | 4.2 | 6 | 25 | 4 | 16.7 | 5 | 20.8 | 8 | 33.3 | | |
| | 3 | 4 | 3.8 | 15 | 14.3 | 17 | 16.2 | 27 | 25.7 | 42 | 40 | | |
| | 4 | 2 | 6.1 | 6 | 18.2 | 5 | 15.2 | 9 | 27.3 | 11 | 33.3 | | |
| Q12 | 1 | 8 | 4.9 | 29 | 22 | 30 | 24.4 | 40 | 22 | 60 | 26.8 | 15.577 | 0.211 |
| | 2 | 1 | 2.9 | 4 | 11.8 | 3 | 8.8 | 12 | 35.3 | 14 | 41.2 | | |
| Q13 | 1 | 2 | 4.3 | 7 | 15.2 | 9 | 19.6 | 12 | 26.1 | 16 | 34.8 | 9.977 | 0.618 |
| | 2 | 1 | 4.8 | 3 | 14.3 | 6 | 28.6 | 7 | 33.3 | 4 | 19 | | |
| | 3 | 5 | 4.8 | 16 | 15.2 | 12 | 11.4 | 29 | 27.6 | 43 | 41 | | |
| | 4 | 1 | 3.4 | 7 | 24.1 | 6 | 20.7 | 4 | 13.8 | 11 | 37.9 | | |
| Q14 | 1 | 3 | 5.7 | 9 | 17 | 8 | 15.1 | 13 | 24.5 | 20 | 37.7 | 13.938 | 0.305 |
| | 2 | 2 | 6.9 | 5 | 17.2 | 6 | 20.7 | 11 | 37.9 | 5 | 17.2 | | |
| | 3 | 3 | 2.9 | 19 | 18.3 | 14 | 13.5 | 26 | 25 | 42 | 40.4 | | |
| | 4 | 1 | 6.7 | 0 | 0 | 5 | 33.3 | 2 | 13.3 | 7 | 46.7 | | |
| Q15 | 1 | 4 | 6.5 | 9 | 14.5 | 10 | 16.1 | 17 | 27.4 | 22 | 35.5 | 8.121 | 0.776 |
| | 2 | 0 | 0 | 5 | 16.7 | 8 | 26.7 | 9 | 30 | 8 | 26.7 | | |
| | 3 | 4 | 4.2 | 18 | 18.8 | 12 | 12.5 | 23 | 24 | 39 | 40.6 | | |
| | 4 | 1 | 7.7 | 1 | 7.7 | 3 | 23.1 | 3 | 23.1 | 5 | 38.5 | | |

*P≤0.05 is statistically significant*

## DISCUSSIONS

Travel may be the only risk factor for infectious diseases that are well controlled in the travelers country of residence, particularly vaccine-preventable diseases such as hepatitis A, typhoid, polio, and measles. The role of vaccination among travelers is an essential component of the control of travel-associated infectious diseases. Routine vaccinations need to be updated for all parties. The clinician needs to be aware of the risks associated with travel to India, including food and water risks (eg, hepatitis A, typhoid fever, traveler's diarrhea), as well as mosquito-borne (eg, dengue, fever, malaria, Chikungunya, Japanese encephalitis) and other diseases (eg, hepatitis B, rabies). The choice of specifc interventions will depend on the details of the itinerary and travelers' demographic profiles. Proper counseling on food and water hygiene, insect protection, safety, medical insurance, and evacuation strategies also need to be provided. Owing to the high rate of fuoroquinolone-resistant bacteria causing traveler's diarrhea in India, an appropriate antibiotic, such as azithromycin, should also be offered, with an awareness of pediatric and adult dosing and indications for use.

## CONCLUSION

The study concludes that dental students are generally aware regarding travel medicine. Hand in hand with traveling comes protection against travel-related diseases, which can be achieved on an individual and a population level. As preventive travel medicine covers multiple fields, from training to vaccination, individual and population-wide protection can be achieved on these different levels.Travel medicine is a challenging specialty that requires up-to-date knowledge on the global epidemiology of infectious and non-infectious health risks, the changing distribution of drug-resistant infections, and both international and local health regulations and immu-nization requirements. Because travel medicine is primarily focused on preventive health care, the traveler's health and safety will depend on the practitioner's level of expertise and profciency in providing pretravel counseling, as well as the required or recommended vaccinations. Practitioners should be skilled in performing a detailed risk assessment for each individual traveler in order to accurately evaluate traveler, itinerary, and destination-specific risks, and to advise on the most appropriate interventions to promote health and prevent adverse health outcomes during travel.

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