Original Research Article

Health Problems of International Travellers in States of Karnataka and Goa, India- A Cross Sectional Study

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Abstract

Background: International travel is undertaken by large, and increasing, numbers of people for professional, social, recreational and humanitarian purposes. Travellers are an epidemiologically important population because of their motility, potential for exposure to diseases outside their home country. According to Tourism statistics 2017, around 2,47,07,732 numbers of International travellers visited India in 2016. Hence, it is important to assess the health problems of travellers.

Objectives: 1. To assess the health problems of International Travelers in Karnataka and Goa, India.

2. To evaluate the relationship between the travel characteristics, individual behavior and travel health problems.

Methods: A Cross-sectional study was conducted for a duration of one year among 400 international travellers selected by convenience sampling at tourist places of states of Karnataka and Goa. A pretested, semi-structured questionnaire was administered to collect information about demographic and travel characteristics, individual behaviour and health problems during travel.

Results: Among 400 international travellers, 51.5% (206) were males and 48.5% (194) were females, with majority of the participants belonging to the age group of 25 to 45years. 41.5% of the participants reported health problems, most common being fever, upper respiratory symptoms and diarrhoea.

Conclusion: Nearly half of the participants reported health problems, 28% of them were relying on self-medication for the health problem(s) and majority of them were preventable. Hence it is important to consider the need of travel health clinics in places with high frequency of tourist arrivals.

Keywords: *International travellers, travel characteristics, pretravel advise, health problems, vaccination, chemoprophylaxis*

Introduction

Travel from one place to other started in olden days to find the source of livelihood and protection against the adverse environmental conditions due to changing seasons, seeking for a safe habitat to lead life. Advancement in industrialisation, socialisation, technology and expanded knowledge about the geography of the earth has led to increased number of travellers across the world. Increasing number of travellers, has also increased the destinations and purpose of travel.

International travel is undertaken by large, and increasing, numbers of people for professional, social, recreational and humanitarian purposes. [1] International tourist are expected to increase by 3.3% a year between 2010 and 2030 to reach 1.8 billion by 2030, according to UNWTO's long-term forecast report Tourism Towards

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2030. [2] Annual pilgrimages to places like Lourdes, Mecca and to religious shrines throughout India account for the international movement of several million people. [3] According to Tourism statistics 2017, around 2,47,07,732 numbers of International travellers visited India in 2016. [4]

Travellers are an epidemiologically important population because of their motility, their potential for exposure to diseases outside their home country, and the possibility that

they may carry non-endemic diseases between countries. [5] International travellers are of particular concern because they are at high risk due to the following reasons: a) they are exposed to disorders induced by rapid changes of the environment, b) in developing countries like India, they are exposed to certain infections, which may not exist in their country of residence, c) in the new destinations, they lack information about the accessible health care facilities for their health problems.

Travel medicine or Emporiatrics is the branch of medicine that deals with the prevention and management of health problems of international travellers. [6]

To improve the health interventions targeted towards the population crossing international boundaries, an improved understanding of the nature of travel, individual behaviour during travel, health problems during travel and pretravel health preparations is necessary. Health problems are self-reported by 22% to 64% of travellers, travelling to the developing world. [7, 8] Hence, this study was undertaken to assess the health problems of international travellers.

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Material and Methods

Type of study: A Cross-sectional study among international travellers in states of Karnataka and Goa.

Place of study: Tourist and transit places of Karnataka and Goa states.

Duration of the study: 12months (June 2018 to May 2019).

Study participants: International Travelers visiting tourist places in states of Karnataka and

Goa, India.

Inclusion criteria:

1. International travellers over 18years of age.

2. International travellers who understood and spoke English.

3. International travellers who had stayed in India at least for 24hours.

Exclusion criteria:

1. International travellers of Indian origin.

2. International Travelers who did not give consent for the study.

3. International travellers who were staying in India for > 3months.

Sample size

Based on the previous study done in Agra by Amit Kumar Mehto et al, the proportion of the study participants having health problems was found to be 48.2% (p). [9] With absolute precision of 5%, the sample size (N) calculated was 384, which was rounded to a final sample size of 400. The study participants were selected by convenience sampling.

Method of collection of data: Approval was taken from the concerned authorities of Tourism Departments of Karnataka and Goa states. Ethical clearance was taken from Institute Ethics Committee of Karnataka Institute of Medical Sciences (KIMS), Hubballi and Directorate of Health Services (DHS), Government of Goa. The study was conducted among the International Travelers at various places (beaches, exit site of monuments, accommodation units and transit places) of Karnataka and Goa at the time of study.

Karnataka state included data collection in four regions (North Karnataka, South Karnataka, Hyderabad

Karnataka and Coastal Karnataka). Places with a greater number of foreign tourists were selected from each region of Karnataka mentioned above based on tourism statistics of Karnataka. Goa state was divided into two regions North Goa and South Goa and participants were interviewed in each of the region at beaches, restaurants and transit places.

International travellers in each of the above-mentioned place were explained about the research. After taking the written consent, participants were interviewed using a predesigned, semi-structured, pretested questionnaire containing information about sociodemographic characteristics, Individual behaviour and health problems in the current trip.

Pilot study: a pilot study was conducted before undertaking the actual research in North Goa,

a total of 21 participants were interviewed using the questionnaire. Necessary changes were

made in the questionnaire after the pilot study, and a final questionnaire was prepared.

Data processing and statistical analysis: Data was entered in Microsoft excel and analysed using Statistical Package for Social Sciences Version 21 (SPSS free version 21). Continuous data was expressed as mean and standard deviation and categorical data was expressed as proportions. Appropriate tests of significance were used. P value <0.05 was considered statistically significant.

Results

Sociodemographic profile of participants

Of 400 participants, 51.5% of the participants in the study were males. The mean age of the males and females in the study were 37years and 34years, with standard deviation of 9.5years and 9.9years respectively. Majority of them belonged to the age group of 25-45years. Nearly half of the study participants were following Christianity (49.5%). Majority of the participants had completed their graduation (57.5%). Most of the participants (57.5%) were belonging to the countries of European continent, followed by Asian continent (21.8%). 13% of the participants mentioned having a pre-existing chronic health problem. The most common chronic health problems reported in the current study were Diabetes (3.5%), followed by Coronary artery Disease (3.3%).

Travel characteristics

The mean duration of trip among the participants was 30 days (SD 20.8days). Most of the participants were travelling to India for the purpose of pleasure and recreation (74%), followed by academic purpose (8.5%) and work (7.3%). 25.5% of the participants were travelling alone and 21.5% of the participants were travelling with their spouses in the current trip. The most common accommodation facilities used by travellers were hotels and lodges (78%), followed by paying guests (8.6%). 40% of the participants visited other countries before arriving to India during the current trip.

Individual behaviour

40% of the participants reported to have performed at least one adventure activity during the current trip which included trekking, hiking, water sports etc. 22.5% of the participants who performed adventure activity reported injuries while performing them. Majority of participants reported eating from multiple sources. (Figure 1). 69% of participants reported having at least one habit which included consumption of alcohol, smoking, use of smokeless tobacco and recreational drugs during the current trip (Table 1). The most common high-risk practice among the participants in the current trip was tattooing (29.5%), followed by use of Marijuana in any form (26.3%) (Table 2).

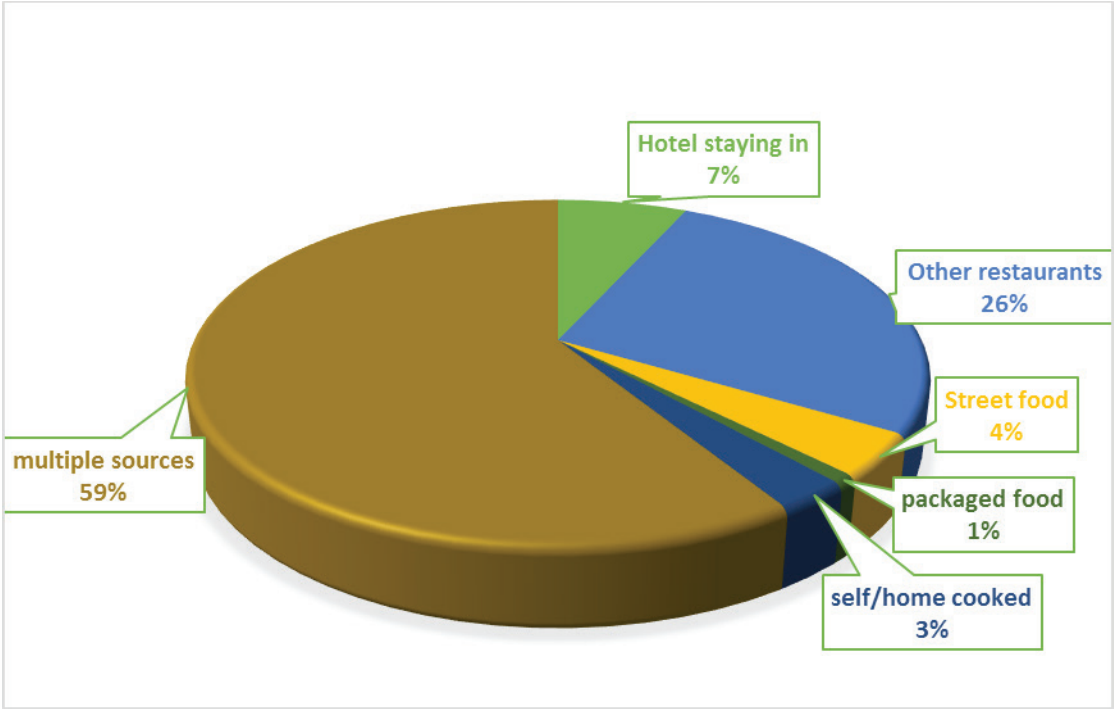

Figure 1: Distribution of the participants according to the source of food in the current trip.

Table 1: Habits during the current trip among participants.

Variables	Categories		
	Yes n(%)	No n(%)	Total n(%)
Alcohol consumption	260(65)	140(35)	400(100)
Smoking	140(35)	260(65)	400(100)
Smokeless Tobacco	11(2.8)	389(97.3)	400(100)
Recreational drugs	6(1.5)	394(98.5)	400(100)

Table 2: High risk practices during the current trip among participants.

High risk practices during trip	yes	no	Total N (%)
	N (%)	N (%)	
Unprotected sexual intercourse	10(2.5)	390(97.5)	400(100)
Tattooing	118(29.5)	282(70.5)	400(100)
Piercing	16(4)	384(96)	400(100)
Injection drug abuse	5(1.2)	395(98.8)	400(100)
Marijuana	105(26.3)	295(73.7)	400(100)

Heath problems

The prevalence of health problems during travel among the participants was 41.5%. Most of the participants faced health problems at Goa followed by Mysore and Udaipur. among 166 participants who reported health problem in the current trip, the most common health problem reported was fever (64.46%) followed by upper respiratory tract symptoms (57.23%) and diarrhoea (44.58%). A total of 67 participants had at least one episode of traveller's diarrhea.

Off those who reported health problems 36% of the participants sought the treatment from a local doctor, 28% of them used self-medication, 22% of them were referred to higher centres in India for management of their health problems. 39.76% of the participants who had health problems during travel underwent biochemical/ microbiological investigation.

There was a significant difference in the prevalence of health problems of the people belonging to different continents and pre-existing disease (Table 3).

Table 3: Association between sociodemographic characteristics, pre-existing disease and health problems.

Variables	Categories	Health Problems		Chi square	p value
		Present	Absent		
Age	<25years	26(54.2%)	22(45.8%)	3.629	>0.05
	25-45years	116(39.6%)	177(60.4%)		
	>45years	24(40.7%)	35(59.3%)		
Gender	Male	85(41.3%)	121(58.7%)	0.01	>0.05
	Female	81(41.8%)	113(58.2%)		
Continent of residence	Asia	21(12.7%)	66(28.2%)	15.278^ (dof 5)	<0.05*
	Europe	109(65.7%)	121(51.7%)		
	Africa	4(2.4%)	9(3.8%)		
	South America	10(6%)	11(4.7%)		
	North America	19(11.4%)	23(9.8%)		
	Australia	3(1.8%)	4(1.7%)		
Pre-existing disease	Present	37(22.3%)	15(6.4%)	21.649	<0.001
	Absent	129(77.7%)	219(93.6%)		

*significant, ^Monte Carlo Exact test, dof-degrees of freedom

Table 4: Association between sociodemographic characteristics, pre-existing disease and health problems.

Variables	Categories	Health Problems		Chi square	p value
		Present	Absent		
Visit to other country	Yes	78(47%)	82(35%)	5.774	<0.05*
	No	88(53%)	152(65%)		
Habits	Yes	130(78.3%)	146(62.4%)	11.507	<0.01*
	No	36(21.7%)	88(37.6%)		
Source of food	Staying Hotel	8(4.8%)	19(8.1%)	16.873^ (dof 5)	<0.01*
	Other Restaurant	39(23.5%)	68(29.1%)		
	Street Food	4(2.4%)	12(5.1%)		
	Packaged Food	1(0.6%)	2(0.9%)		
	Self/Home Cooked	0(0%)	11(4.7%)		
	Multiple Sources	114(68.7%)	122(52.1%)		

*significant, ^Monte Carlo Exact test, dof-degrees of freedom

Visit to other countries during the current trip, presence of at least one habit and source of food were significantly associated with health problems (Table 4). Travellers diarrhea was significantly associated with consumption of street food (chi square-17.277, p<0.01).

Discussion

The present study was conducted among 400 international travellers who visited Karnataka and Goa states of India. The prevalence of travel related health problems among the participants in the current study was 41.5%. All 166 participants who reported health problems were having multiple health problems. In a research conducted by Amit Kumar Mehto et al at Agra reported that the prevalence of health problems among international travelers was 48.2%. 9 In a study conducted in Calcutta by Sanatanu Chatterjee reported a prevalence of 35%. [10]

In the current study, consumption alcohol during the trip was reported by 65% of the participants, smoking was reported by 35% of the participants, 2.8% reported the usage of tobacco in smokeless forms and 1.5% of them reported taking recreational drugs. A similar pattern of habits was found in a research conducted by Mark A Bellis et al. [11]

The current study found that health seeking behaviour for travel health problems was not satisfactory, which provokes the idea for need of travel health programme.

Conclusion

Nearly half of the participants reported health problems, 28% of them were relying on self-medication for the health problem(s) and majority of them were preventable. Hence it is important to consider the need of travel health clinics in places with high frequency of tourist arrivals.

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