

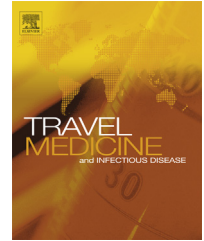


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# Pre-travel preparation practices among business travellers to tropical and subtropical destinations: Results from the Athens International Airport Survey

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## KEYWORDS

Health advice;  
Practices;  
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Airport;  
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**Summary** *Background:* The number of business travellers from Greece to tropical and subtropical areas has recently increased. The study aimed to assess travel health preparation practices of business travellers departing to Africa, the Middle East and Asia.

*Method:* A questionnaire-based survey was conducted at Athens International Airport, from 1st of November 2011 to 30th of April 2013.

*Results:* A total of 684 business travellers participated in the study; the majority were men (86.1%), of Greek nationality (95.3%), with tertiary education (90.8%) and employed (98%). Their mean age was 40 years; 62% and 26% of them were 35–49 and 19–34 years of age respectively. 84.8% were travelling alone. Most frequent destinations were the Middle East (46.8%) and sub-Saharan Africa (16%). For 23.5% of the travellers it was their first trip to a tropical or subtropical country. Only 58.8% pursued pre-travel health consultation; vaccination and malaria chemoprophylaxis were administered to 24.7% and 25.7% of the travellers, respectively. Hepatitis A and typhoid vaccination rates were lower than expected (70% and 35%, respectively). Nearly half of the travellers who visited malaria endemic areas did not receive any chemoprophylaxis. Having elementary education level, travelling to the Middle East or North Africa, travelling for less than 1 month duration, and staying in a house or a hotel were associated with a higher probability of not pursuing health consultation.

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*Conclusions:* Significant gaps were found in pre-travel health practices of business travellers departing to Africa, the Middle East and Asia. Strategies should be developed in order to improve awareness of business travellers.

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## Introduction

International travel has increased by 50% over the last decade, with 1.035 billion tourist arrivals in 2012 [1]. With increasing globalization, international business travel to tropical and subtropical countries has grown significantly over the past two decades, along with an increasing need to understand the health issues for these travellers. Several studies have shown that business travellers account for 12–21% of all international travellers [2,3]. Employees of major corporations are often required to travel for business reasons. People who travel for work can be a heterogeneous group, ranging from business executives to expatriates [4]. Exposure to infectious diseases at high risk destinations can pose significant threats to the health and safety of employees if their risk perception and prevention methods are inadequate. Business travellers frequently visit these areas while often they do not receive pre-travel preparation. They may also stay for long period of time at their destination; long duration of travel is often associated with increased health risk [5].

GeoSentinel Global Surveillance network data revealed that 13.6% of ill returned travellers seen during the period 2007–2011 were business travellers [6]. In addition, 17.6% and 14% of all travellers who were diagnosed with vaccine-preventable diseases and malaria, respectively, were business travellers [7,8]. Limited studies have explored the knowledge, attitudes and practices among business travellers in relation to travel risks. They consistently found a need to improve business travellers' risk perception and for development of corporate health strategies [9–12].

The objective of the current survey was to assess the practices of business travellers who travel to tropical and subtropical areas about pre-travel health advice and to identify specific recommendations for improving preventive measures in regards to travel-related diseases.

## Methods

A prospective questionnaire-based study was conducted from 1st of November 2011 to 30th of April 2013. Data collection was carried out 3 days weekly. Travellers leaving from the departure gates of Athens International Airport were invited to participate in the survey. Inclusion criteria were being a Greek resident,  $\geq 19$  years old, and travelling for work purposes to Africa, Asia and the Middle East. Those travelling to Australia, New Zealand and Japan were excluded from the study (except those continuing on to a tropical or subtropical destination). Therefore only four airlines were selected. Travellers participated on a voluntary basis. Permission was given by the International Airport Authority and all airlines flying to the above destinations.

The study was approved by the Hellenic Center for Disease Control and Prevention (HCDCP).

Data was collected using a standardized anonymous questionnaire. It was administered by 4 trained interviewers and lasted about 10 min. Approximately 10–20 travellers were interviewed from each flight per day. Data included information about demographic and travel characteristics, and pre-travel consultation.

We define business travel as travel for business or professional purposes including frequent travel for professional reasons. High risk travel and travel to areas with moderate-high prevalence of malaria were defined according to published sources including the EuroTravNet and GeoSentinel Surveillance network [8,13–15]. The definition of high risk travel is based on travel characteristics such as the area, the season and long duration of travel, the place of stay, and outdoor activities, and travellers' characteristics (e.g. behaviour, history of pre-existing medical problems, pregnancy, and immunosuppression). Short-term and long-term travel was defined as a trip of  $< 1$  month and  $\geq 1$  month duration, respectively.

Vaccination and malaria chemoprophylaxis were assessed according to the national HCDCP guidelines, which are in accordance with the World Health Organization and US Centers for Disease Control and Prevention guidelines [16–18]. Urban accommodation was defined as towns with population of  $\geq 5000$  people, whereas rural accommodation as villages with up to population of 5000 or staying in the countryside (Hellenic Statistics Authority: personal communication). An organized trip was defined as a guided, package trip, mainly to popular tourist destinations. Outdoor activities include adventure sport, backpacking, hiking, and remote expedition.

Chi-squared tests and Fisher's exact test were used for comparison between categorical variables. The standard multiple logistic regression was conducted (if  $p$ -value  $< 0.15$  in univariate analysis) to examine the relation between pre-travel preparation and independent factors. Odds ratios (ORs) and their 95% confidence intervals (CIs) were calculated.  $p$ -values of 0.05 or less were considered statistically significant. Unanswered items were excluded from the analysis. Analysis was performed using STATA v12.1 software.

## Results

A total of 684 business travellers participated in the survey (98% participation rate). The majority of them were travelling to the Middle East (46.8%) (Table 1). The five most common destinations were Qatar (22.2%), United Arab Emirates (17%), India (7.6%), China (6.7%) and Indonesia (4.8%). Forty five percent of travellers visited malaria endemic areas.

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