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HEALTH PROBLEMS AWARENESS DURING TRAVEL AMONG FACULTY MEMBERS OF A LARGE UNIVERSITY IN LATIN AMERICA. PRELIMINARY REPORT

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SUMMARY

Health safety during trips is based on previous counseling, vaccination and prevention of infections, previous diseases or specific problems related to the destination. Our aim was to assess two aspects, incidence of health problems related to travel and the traveler's awareness of health safety. To this end we phone-interviewed faculty members of a large public University, randomly selected from humanities, engineering and health schools. Out of 520 attempts, we were able to contact 67 (12.9%) and 46 (68.6%) agreed to participate in the study. There was a large male proportion (37/44, 84.1%), mature adults mostly in their forties and fifties (32/44, 72.7%), all of them with higher education, as you would expect of faculty members. Most described themselves as being sedentary or as taking occasional exercise, with only 15.9% (7/44) taking regular exercise. Preexisting diseases were reported by 15 travelers. Most trips lasted usually one week or less. Duration of the travel was related to the destination, with (12h) or longer trips being taken by 68.2% (30/44) of travelers, and the others taking shorter (3h) domestic trips. Most travelling was made by air (41/44) and only 31.8% (14/44) of the trips were motivated by leisure. Field research trips were not reported. Specific health counseling previous to travel was reported only by two (4.5%). Twenty seven of them (61.4%) reported updated immunization, but 11/30 reported unchecked immunizations. 30% (9/30) reported travel without any health insurance coverage. As a whole group, 6 (13.6%) travelers reported at least one health problem attributed to the trip. All of them were males travelling abroad. Five presented respiratory infections, such as influenza and common cold, one neurological, one orthopedic, one social and one hypertension. There were no gender differences regarding age groups, destination, type of transport, previous health counseling, leisure travel motivation or pre-existing diseases. Interestingly, the two cases of previous health counseling were made by domestic travelers. Our data clearly shows that despite a significant number of travel related health problems, these highly educated faculty members, had a low awareness of those risks, and a significant number of travels are made without prior counseling or health insurance. A counseling program conducted by a tourism and health professional must be implemented for faculty members in order to increase the awareness of travel related health problems.

KEYWORDS: Travel; Traveler's diseases; Epidemiology; Faculty member; Brazil.

INTRODUCTION

Health safety during trips is based on previous counseling, vaccination and prevention of infections, previous diseases' experience or specific problems related to the destination (MATOS & BARCELLOS, 2010). Travelers may be exposed to several health problems or infections at the destination or during travel (GAVISH & BRENNER, 2010). Travelling for short periods has become a common activity in the last fifty years, especially with air travel becoming available for most people (SILVERMAN & GENDREAU, 2009). Today, more than half a billion people make an international trip each year, either for leisure or business (GAVISH & BRENNER, 2010). Travel is considered as a safe procedure by most people due to the short period of stay and usually only the mandatory health measures are implemented, mainly when the destination is an area known as being disease prone, such as Africa (NEAVE *et al.,* 2010). The public health condition has improved in most countries in South America and their tourism structure is usually adequate. There are several reports dealing with health risks related to specific popular tourist destinations, risk ranging from 13.6-54.6% travel health problems. South America is usually considered safe for Americans (HILL, 2000) or Germans (RACK *et al.,* 2005), with lower incidence. Due to these concepts, most people travelling to the Old World consider health problems as being either punctual or occasional, with low awareness or expectation of travel health problems. In Brazil, a sub continental large country, there are few reports on health problems related to Brazilian travelers. Traveler's diarrhea occurs in 13.4% of holiday tourists from Northeastern Brazil (CAVALCANTI *et al.,* 2002). Most other reports are about anecdotal health incidents during expeditions (SHAW & LEGGAT, 2003) or case reports (CDC, 2002). We were unable to find any systematic search

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of travel related health problems for Brazilian travelers. There is an increasing number of Brazilian travelers, both for leisure and also for business, but without increasing information or awareness of travel related health problems (Anonymous, 2011). Usually, concerns and recommendations are raised with a foreign tourist coming to Brazil, but there is limited information for Brazilian travelers, and without considering data on their travel related health problems. We conducted a prospective interview questionnaire in a sample of faculty members of a large public university, aiming to assess travel related health problems and the awareness of travel related health problems and their prevention.

METHODS

We decided to phone-interview faculty members of a large university, with the assumption that they would probably be frequent travelers for collaborative scientific work. The university had more than 5000 faculty members, all of them with Ph.D. degrees and usually over 35 years old. We avoided pairing by gender due to a specific male/female ratio in each type of school or profession. A sample of the faculty of eight schools and/or institutes (out of the 99 schools of the university), including the areas of humanities (2), engineering (3) and health (3). After approval from the Ethics Review Board of the Institute for Tropical Medicine (IMT-USP), the administration of the university supplied a list of telephone numbers from the selected schools and a phone-interview was conducted by two trained interviewers. The questionnaire was previously tested in a sample of undergraduate volunteers. The duration of the interview was set to last less than three minutes, with at least two attempts of contacting each member. All faculty members who agreed with the interview were included, except those who had not travelled significantly in the last year.

Variables involved demographic characteristics, self reported physical activity, education, preexisting diseases, domestic or foreign destination, the duration and type of transportation and stay, the goal of the travel as either leisure or scientific collaboration. Awareness of travel related health problems was evaluated by vaccine check as reported by the travelers and medical counseling before travel as well as the option for private health insurance for travel. Confirmation of those data by vaccine card or more information was not attempted.

All data were analyzed using the EpiInfo 6.01 package (http://wwwn.cdc.gov/epiinfo/), using a chi square test to compare frequencies between specific groups, except for age, which was compared by Student´s t tests. Difference was considered significant when the probability of equality was less than 0.05 ($p < 0.05$)

RESULTS

We performed 520 attempts to interview the faculty members of a large public University, randomly sampled from different study areas, such as humanities, engineering and health schools. From those attempts, we managed to contact 67 (12.9%), and 46 (68.6%) agreed to participate in the study. Two interviews were excluded, as the members reported no trips during the last year.

Demographic characteristics of the study population are shown in all tables, as a whole group. There was a large male proportion (37/44, 84.1%), mature adults mostly in the forties and fifties (32/44, 72.7%), all of them with higher education, as you would expect with faculty members. Most described their lifestyle as sedentary or with occasional exercise, with only 15.9% (7/44) reporting regular exercise.

Preexisting diseases were reported by 15 travelers. Systemic hypertension was reported by four, diabetes by three, hypercholesterolemia by two, with cardiac problems, asthma, glaucoma, migraine, thyroid problems and disc hernia individually reported. None reported any worsening of those conditions during travel.

Most trips were shorter than one month, usually one week or less. The trip duration was related to destination, with longer trips to foreign destinations, with a mean of 12 h flight duration, while domestic trips were shorter, around three hours duration. Foreign destinations trips, mostly to North America and Europe, were more frequently reported 68.2% (30/44) and most 93.2% (41/44) travelling was made by air. Leisure motivated 31.8% of the trips (14/44) and other trips were related to scientific work, such as meetings or visits. There were no field trips for research among the studied sample participants.

Specific health counseling previous to travel was reported only by two (4.5%) while 27 (61.4%) referred to be update with immunization schedules, but more than one third of foreign travelers (11/30) preferred not to have checked their immunization records. Health insurance for travel was contracted only for foreign travel, but 30% (9/30) reported travel without any health insurance, and no domestic travel was insured despite long distances within Brazil.

As a whole group, 6 (13.6%) travelers reported at least one health problem attributed to the trip. All were males and travel abroad. One problem was associated to social problem (victim of violent theft) and the other five were respiratory illnesses (influenza and common cold), one neurological, and one orthopedic and one case presented systemic hypertension. No other tropical diseases, as malaria or dengue, accident or destiny associated illness were reported. Gastrointestinal symptoms were unreported, but most people considered those symptoms normal during travel.

The gender effect on travel behavior can be seen in Table 1, when all variables were sorted according to the sex of the traveler. There are no gender differences as related to age groups, destination, type of transport, previous health counseling, leisure travel motivation or pre-existing diseases but, as women travel mostly to Brazilian destinations, fewer women bought health insurances and also used less air transport. Women were also more careful about vaccine check but without previous health counseling. There was no health problems related to travel in the woman group.

The effect of destination was also analyzed on travel related health risks awareness and most variables were similar in abroad or domestic (Table 2). Interesting, the two cases of previous health counseling were made by domestic travelers, but no one of the domestic travels had contracted any additional health insurance related to travel, unlike travelers flying abroad, most of whom had some kind of health insurance arrangement. An interesting point is also the leisure travel motivation, which was similar in both destinations, showing that faculty members had resources to travel abroad for leisure but this fact affects little their health awareness. Health problems related to travel were reported only

Table 1
Whole group findings and gender influence in travel health awareness in faculty members. Significance determined by Pearson chi-square

Event(n)		Whole group	Gender		*p*
			Males (37)	Females (7)	
Age groups	< 40	6/44	6/37	0/7	NS
	41-50	20/44	16/37	4/7	
	51-60	12/44	10/37	2/7	
	>60	6/44	5/37	1/7	
Regular exercise		7/44	6/37	1/7	NS
Pre existing diseases		15/44	11/37	4/7	NS
Leisure travel motivation		14/44	11/37	3/7	NS
Air transportation		41/44	36/37	5/7	NS
Brazilian destination		14/44	10/37	4/7	$p < 0.05$
Previous health counseling		2/44	2/37	0/7	NS
Health insurance		21/44	20/37	1/7	$p < 0.05$
Vaccine check		27/44	21/37	6/7	NS
Health problems related to travel		6/44	6/37	0/7	NS

Table 2
Destination effect on travel health awareness in faculty members

Type of destination		Foreign (30)	Nationwide (14)	
Age groups	< 40	5/30	1/14	NS
	41-50	12/30	8/14	
	51-60	9/30	3/14	
	> 60	4/30	2/14	
Regular exercise		6/30	1/14	NS
Pre existing diseases		10/30	5/14	NS
Leisure travel motivation		9/30	5/14	NS
Air transportation		30/30	11/14	$p<0.10$
Previous health counseling		0/30	2/14	NS
Health insurance		21/30	0/14	$p<0.001$
Vaccine check		19/30	8/14	NS
Health problems related to travel		6/30	0/14	$p<0.10$

Table 3
Type of objective of the travel, as work or leisure, in travel health awareness in faculty members. No significant differences were found

Trip objective (n)		Work (30)	Leisure (14)
Age groups	< 40	5/30	1/14
	41-50	13/30	7/14
	51-60	7/30	5/14
	> 60	5/30	1/14
Regular exercise		4/30	3/14
Pre existing diseases		11/30	4/14
Air transportation		28/30	13/14
Brazilian destination		9/30	5/14
Previous health counseling		1/30	1/14
Health insurance		15/30	7/14
Vaccine check		17/30	10/14
Health problems related to travel		5/30	1/14

in foreign travel. This fact is probably related to the travel abroad is more remarkable and more retrievable than nationwide trips.

DISCUSSION

Our data clearly show that faculty members presented good health status, despite low frequency of regular exercise. Most of them also had adequate health care, with few pre-existing diseases. As for their destinations, most of them went to industrialized countries both for work and leisure, without exposure to endemic diseases. There were few differences according to gender or type of travel. The main difference was an increased frequency of health insurance among travelers to foreign destinations. Thus, most problems related to health in travel for those people are occasional and less frequent than elsewhere reported, due to bias of highly educated and trained travelers. Elderly travelers had been reported to comply with health related recommendations (ALON *et al.,* 2010) with less health problems, similar to our data. No endemic disease, injury or destiny associated disease were reported, but there are no field trips to risky areas in the sample. Gastrointestinal symptoms were unreported, but most people considered those symptoms normal during travel (VAN HERCK *et al.,* 2004). There were no gender differences as related to age groups, destination, type of transport, previous health counseling, leisure travel motivation or pre-existing diseases but, as women traveled mostly to Brazilian destinations, fewer women bought health insurance and they also used less air transport. Women were also more careful about vaccine check but without previous health counseling. There were no health problems related to travel in the woman group, but this data is biased due to small sample. The above cited findings were also reported for global tourism analysis, showing gender differences for

travel health problems (SCHLAGENHAUF *et al.,* 2010). Interesting, the two cases of previous health counseling were made by domestic travelers, but none of the domestic travelers had any additional health insurance, unlike travelers to foreign destinations, most of whom had some form of health insurance. An interesting point is also the leisure travel motivation, which was similar to both destinations, showing that faculty members had resources to travel abroad for leisure but this fact affects little their health awareness.

Our data clearly show that there are health problems in a significant number of highly educated Brazilian travelers but they had low awareness of those risks, and a significant number of trips are conducted without prior counseling or health insurance. Our group was composed by highly educated faculty members and this high knowledge could induce low awareness of health problems in travel. Another issue is the misconceptions that good sanitation standards of Old World and North American countries would protect them from any risks in travel (BAATEN *et al.,* 2010; BIELASZEWSKA *et al.,* 2011). Our reported level of health problems, around 15%, was similar to those found in tourist arriving in Brazil (CAVALCANTI *et al.,* 2002), after exclusion of traveler diarrhea (BELDEROCK *et al.,* 2011), similar to other Old World destinies. In fact, most of the problems in travel could be defined as international health problems unrelated to endemic diseases in the destiny, but related to travel and traveler behavior. A program conducted to increase the awareness of travel related health problems for Brazilian travelers must be implanted with participation of both tourism and health professionals.

RESUMO

Preocupação com problemas de saúde durante viagens em professores de uma grande universidade na América Latina. Descrição preliminar

A segurança sanitária em viagens é baseada no aconselhamento, vacinação e orientação do viajante para a prevenção de doenças em viagens, genéricas ou específicas de seu destino. Visando avaliar a preocupação, providências preventivas e problemas relativos à saúde e à prevenção de doenças, entrevistamos professores universitários de uma grande universidade pública, distribuídos aleatoriamente entre as áreas de Exatas, Humanidades e da Saúde, selecionados por interesse e por relato de problemas de saúde em viagens no ano antecedente à pesquisa. Após amostragem e sorteio, foram tentadas 520 entrevistas por telefone, sendo encontrados 67 (12,9%) docentes e 46 (68,6%) concordaram com a entrevista, sendo que dois foram excluídos por ausência de viagem no ultimo ano. Esta amostragem tinha predominância de homens (37/44, 84,1%), entre os 40 e 50 anos de idade (32/44, 72,7%) todos com educação superior como esperado. A maioria era sedentária ou referia exercício ocasional, com apenas 15,9% (7/44) informando exercício regular. Doenças pré-existentes foram referidas por 15 viajantes. A maioria das viagens durou uma semana ou menos no destino. A duração da viagem estava relacionada ao destino sendo que viagens com mais de 12 h eram sempre relacionadas a destinos no exterior, 68,2% (30/44) das viagens, sendo mais rápidas (< 3h) as viagens domésticas. A maioria das viagens foi aérea (41/44) e o lazer motivou 31,8% (14/44) delas. Aconselhamento de saúde anterior à viagem foi descrito apenas por 2 (4,5%) e a maioria (61,4% ou 27/44) referia vacinação embora 11/30 apenas descrevia vacinação não atualizada. 30% (9/30) viajaram sem nenhum tipo de seguro de saúde. Como um grupo total, seis homens (13,6%) viajando ao exterior apresentaram pelo menos um problema de saúde atribuído à viagem. Cinco apresentaram problemas respiratórios, como influenza ou resfriado, sendo que ocorreram problemas neurológicos, ortopédicos, de hipertensão em viajantes isolados, com um caso de problema de crime. Não houve diferenças quanto ao gênero ou grupo etário, destinos ou tipo de transporte, aconselhamento prévio, motivação da viagem, ou doenças preexistentes. É interessante notar que os dois aconselhamentos prévios foram feitos apenas para viagens de destinos nacionais. Nossos dados mostram que há problemas de saúde em viagens em um número significante de viajantes altamente educados, apesar da pequena amostra, e eles têm despreocupação com saúde, com número significante de viagens sem aconselhamento prévio ou seguro de saúde. Sugere-se a implantação de um programa de aconselhamento para segurança quanto aos problemas de saúde em viagens.

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