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Travelling at my own risk? – A study to evaluate travel health related
knowledge, attitudes and risk taking

University of Tampere
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Department of International Health
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According to global statistics, international tourist arrivals in 2009 were 880 million. Finns made over 6.5 million leisure and business trips abroad. Far East and other exotic destinations are fashionable where tourists are increasingly exposed to serious diseases and accidents. Risk profiles of Finnish travellers are not well known. In Finland, travellers tend to overemphasize importance of vaccinations and malaria prophylaxis while disregarding other advice.

The main objectives of this Master Thesis are to obtain information regarding risk profile and evaluate the impact of the travel health consultation.

Data was collected in a survey through questionnaires before and after consultation, during autumn 2008 and January 2009 at the City of Tampere vaccinations and control of infectious diseases Unit. Sample size was 200.

The results showed that males intend to take more risks concerning excessive drinking and going out late than females. Males also protect themselves less such as not using condoms. As to the impact of the consultation, out of the 25 identical questions asked before and after the consultation only 4 were found statistically significantly different, and 50.9% did not change their conception of travel related risks. Furthermore 35.5% said that health consultation did not reduce their risk taking.

Individual travel related health consultation is vital. It is important, however, that many other channels are opened up in order to widen the possibilities of influencing attitudes for healthier well-being during travel.

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Abbreviations

ETHAB	European Travel Health Advisory Board
IHL	International Health Regulations
ISTM	The International Society of Travel Medicine
HBV	Hepatitis B Vaccine
HAV	Hepatitis A Vaccine
WHO	World Health Organization
THL	Terveyden ja hyvinvoinnin laitos (National Institute for Health and Welfare)
TD	Travellers' Diarrhoea
VFR	Visiting friends and relatives
DALY	Disability-Adjusted Life-Year
GSK	GlaxoSmithKline

1. INTRODUCTION

Over the last few years travelling has increased at a fast rate to become a global phenomenon. This is partly because of more affordable tickets, and partly because distant destinations have become more familiar and attractive through advertising which makes them more accessible for holidays and business trips. They are no longer exotic places solely for the rich.

With such large numbers travelling, and with the possible harmful consequences to the population when they return in the case of infectious diseases, it becomes more urgent, therefore, to investigate the intended behaviour of people abroad, to find out if certain groups of people are more in need of advice than others in order to prevent illness.

Destination is of crucial importance and in this study most of them are classed as middle- and low-income countries i.e. Thailand, India and Gambia. All are considered to be high risk areas for which vaccinations are recommended against dangerous diseases. In addition, due to the fact that the hygienic condition may be different in Europe, they are very high risk areas for contracting for example Travellers' Diarrhoea.

A major aspect also is to investigate the possibilities of compiling a profile of health risks in travellers to countries very different from the Finnish environment. This study, therefore, will concentrate on these aspects by investigating the knowledge, attitude and practices of travellers who undergo travel health consultation and to find out whether this is effective and to what extent.

In addition to the traditional means of information in Health Centres, it is also considered useful to find out whether the internet and the media could serve as a further means of information, since this is nowadays accessed on a daily basis by all ages of people planning their holidays or business trips.

2. LITERATURE REVIEW

Due to increasing mobility of people such as travelling for pleasure, business and migration worldwide, the role of travel related health has become a more important public health concern and after the 70's there has been ever increasing acceleration of interest in this area (Buck and Steffen, 2009).

The background information in this literature review, starting with the historical background of Travel Medicine, will illustrate different aspects such as travel related health risks, risk profile, risk perception and health consultation. However, topics are discussed from different angles which will help to understand the issues in context. Finally, after shedding light on travel related disease like Travel Diarrhoea, this literature review will close with the last chapter outlining disease prevention during travel.

The review was compiled from newspapers, medical journals, books and the internet. Many travel health newspaper reports were excluded because they were not scientifically relevant or reliable although the media in general pointed ways into looking into statistics on these issues.

The keywords used with PubMed and Medline were travel health, risk profile, travel medicine, Travellers diarrhoea, knowledge, attitudes and practices.

Articles also included were found through the web of science database using keywords and synonyms of the keywords like travel health, travel medicine, risk-exposure, and / or attitudes of travellers-behaviour of travellers. Additionally screening references lists of articles and books as a snowball technique was applied.

The search was made between January 2008 and December 2009 and some additional information and updates were added in the year 2010.

2.1. Historical background to travel medicine

Medical advice on health during travelling, is not a new area of interest, in fact, according to a recently published book *Travel Medicine Tales behind the Science* edited by Wilder-Smith et al. and section *History of the Development of Travel Medicine as a New Discipline* by Buck and Steffen, its roots can be traced as far back as the 1st century and Seneca's writings in which he commented on health risks of excessive drinking and sexual habits while on a particular holiday island.

Wars are and were times when armies travelled long distances into foreign territory and were open to diseases through infections and malnutrition on a large scale, such as during the times of Alexandra the Great in 300 BC. (Buck and Steffen, 2007)

Another source of spreading disease was through sea voyages and in order to protect themselves against disease, official quarantines began in ports in the 14th century. The plague, which decimated the populations in Europe was brought in through ships in the Middle ages. (Buck and Steffen, 2007)

Hygiene, cleanliness and control of deficient disease began to be an important part of the prevention of disease during ships voyages during the 18th century but by the 19th this had slowed down, especially since the knowledge of tropical infections was not very good. (Buck and Steffen, 2007)

From the 20th century and particularly in the last few years there has been an intensity of interest in the risk factors in travelling, and since the 1970's travel health epidemiology, microbiology and prevention have developed at a much faster rate. In what Buck and Steffen call the 'creation' of travel medicine, they record this development. In Europe and North America in particular there have been several areas of focus such as analysis of hospital records by Geddes and Gully, study of behavioural aspects by Peltola, Kyrönseppä and Hölsä and imported infections by refugees and tourist by Feldermeier, Feldheim, Rasp

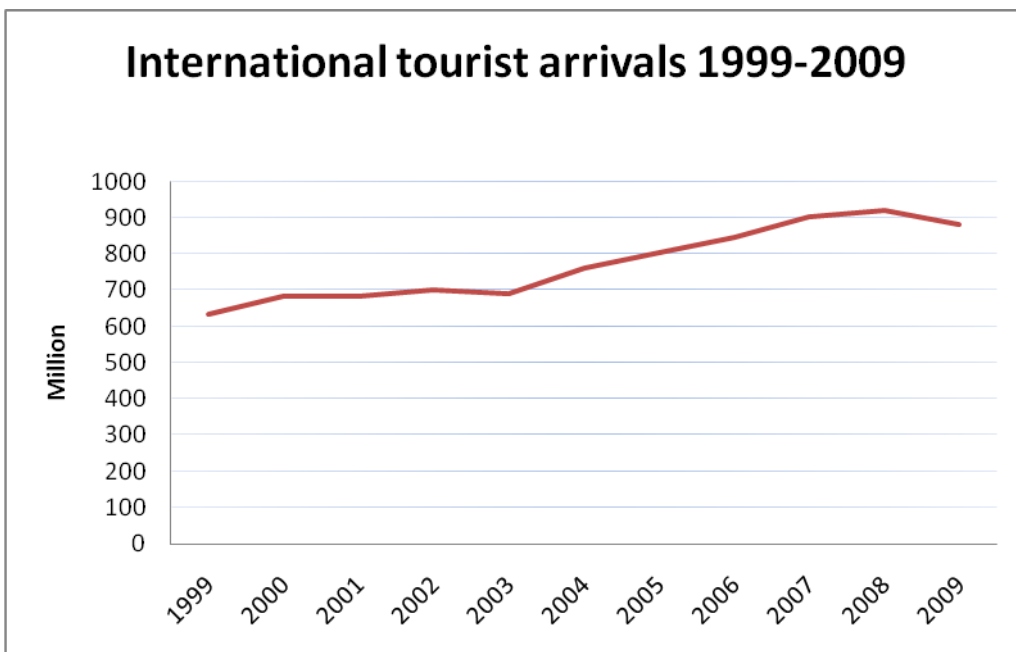
and Bienzle to mention a few of their examples. (Buck and Steffen, 2007)

As Kozarsky and Keystone state "the worldwide focus and knowledge base of travel medicine distinguishes it from other fields of medicine and nursing." Though travel advice has a long history, it has become a comparatively new field in its own right, in a field that in a modern world requires continuous updating of data.

2.2. Travelling and tourism

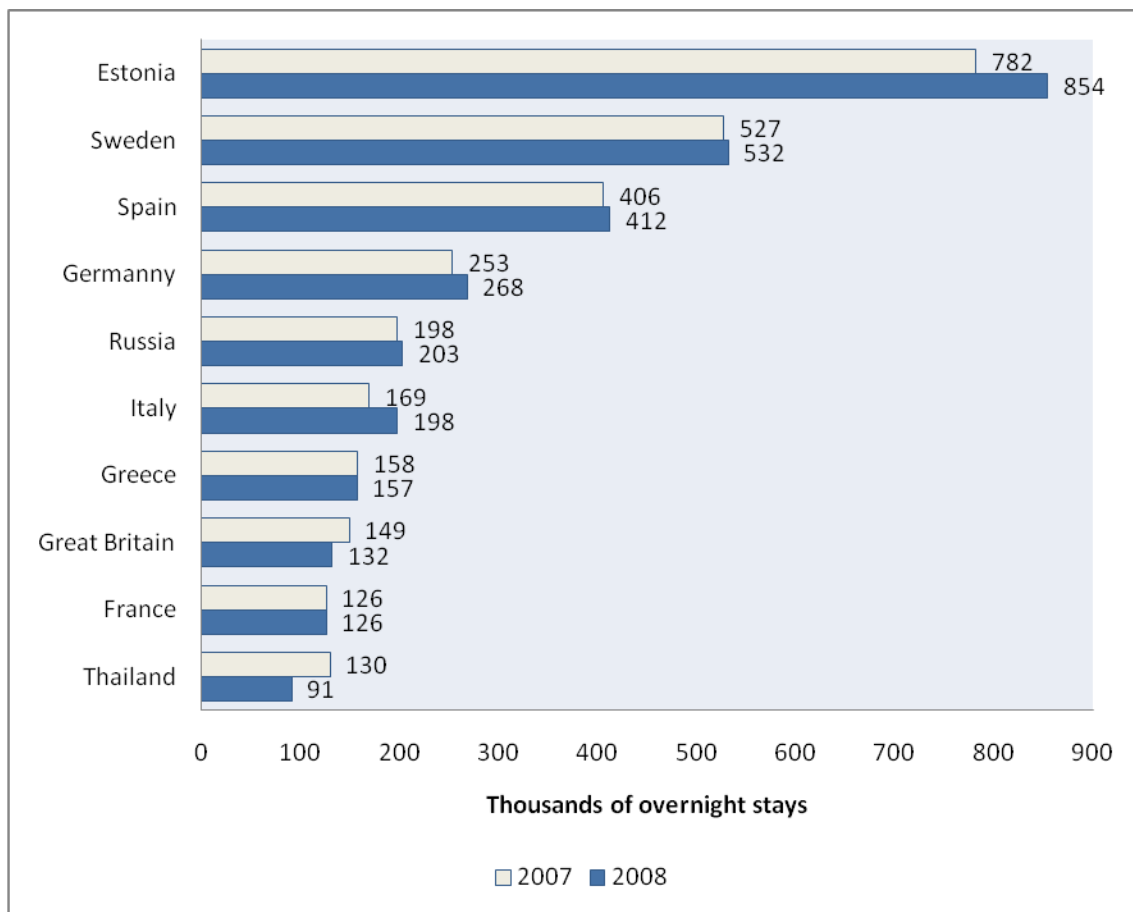
Globally international tourist arrivals grew by an estimated 6% to reach 898 million in 2007. This represents nearly 52 million more arrivals than in 2006. (WTO, 2008) Furthermore, in 2008, international tourist arrivals reached 924 million, up 16 million over 2007, representing a growth of 2%. (WTO, 2009). The second half of 2008 saw growth come to a standstill with the number of international arrivals declining slightly – a trend which continued in 2009. This development is shown in the following graph.

Graph 2.2.a. International tourist arrivals, 1999-2009, (data source: WTO, 2010)



Finns made over 6.5 million leisure and business trips abroad in 2008. (Tilastokeskus, 2009). The Far East and exotic destinations are increasingly fashionable, especially among holiday travellers where tourists are more exposed to diseases in comparison to travelling to the most popular destination, i.e. the Canary Islands. (SMAL, 2007).

Graph 2.2.b. Trips with overnight stays in destination country made by the population aged 15 to 74 (Statistics Finland, 2009)



2.3. Travel related health risks

According to WHO the key factors to which travellers may be exposed to travel-related risks can be determined as follows: mode of transport, destination, duration and season, purpose, standards of accommodation and food hygiene, behaviour of the traveller and underlying health of the traveller (WHO, 2009). The terminology used by Keystone et al (2008) from the perspective on what travel health risks depend is: “the itinerary, duration and season of travel, purpose of travel, lifestyle, and host characteristics”. Ericsson et al (2008) discussing Travel diarrhoea (TD) use similar expressions such as mentioned in the previous two references, but additionally include “country of origin” (see also 2.4). The fact that motor vehicle injuries represent, together with drowning, the major causes of avoidable casualties, as Keystone et al, 2008 suggest, modes of transport should be included as a personal travel health risk point.

All the above terminology has been taken into consideration in this study but the term ‘lifestyle’ is not used. Although it is important in general it is a slightly different concept for this work and here ‘behaviour’ will be used since it embodies knowledge, attitudes and practices which is a part of the risk profile examined in this thesis.

One very important issue is the consumption of alcohol, one of the main growing public health problems in developed countries and particularly Finland where alcohol related deaths are rising rapidly in 2008 (Statistics Finland, 2009)

In the past two decades deaths by alcohol-related diseases and alcohol poisonings have doubled, and clearly more men among aged 15-64 now die of alcohol-related causes than of ischaemic heart disease.

In an article addressing family physicians for pretravel consultation, a “Hazard Avoidance” Advice Table (with respective precautions) is presented. The table includes hazards such as insect borne, food borne and waterborne diseases followed by solar injury, altitude sickness, transportation-related illness, accidental injury and political hazards. In contrast to

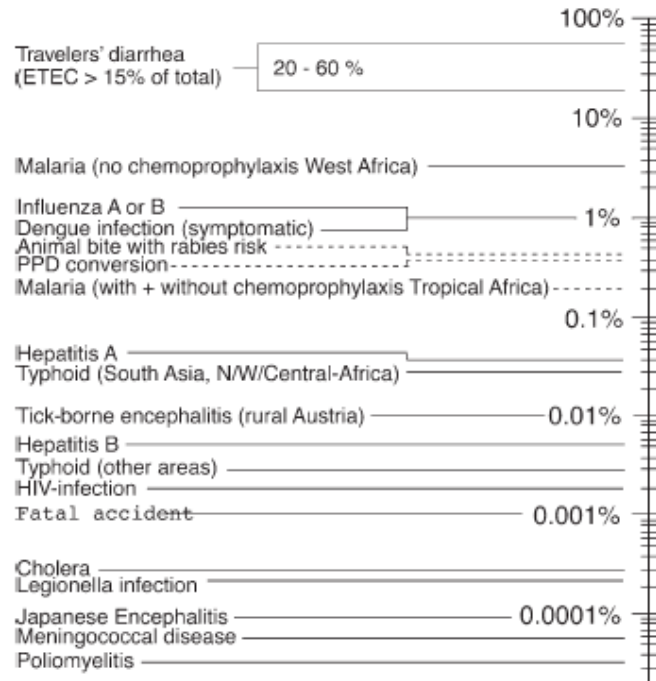
other publications, this article appears to discuss a much broader view of exposures, including, for example, also political hazards and altitude sickness. (Bazemore and Huntington, 2009)

The nature of “The Pretravel Consultation” article was to gather information and create a guideline or a brief handbook for family doctors and can as such be more comprehensive compared with articles based on studies which are always limited and restricted to some few variables. However for this thesis, it has been beneficial for broadening the input as well as the few articles mentioning political issues and considerations, an important aspect for travellers safety.

Steffen et al, who annually update incidences of travellers’ diseases, give additional information. For example by Meta analysis using PubMed and search word travel, in 2008, the Travellers’ Diarrhoea (TD) was the most infectious disease at 20-60%. (see graph 2.3.). In accordance with other scholars such as Ericsson et al (2008) Steffen et al estimates that a share of about half of the travellers of industrial countries who choose destinations in the developing world develop TD. Likewise conclude Keystone et al (2008) by referring to several authors discussing more generally (Epidemiology of TD) about that issue. Furthermore this graph shows how frequent health problems in travellers actually are.

Under the category of fatal accidents, as also presented in Graph 2.3., there is not a very clear idea of the range of accidents occurring, neither is it widely discussed in other articles except for example by Rack et al (2005) in an observational study about travellers consulting a travel clinic in Berlin, Germany. They found that 5.2% of all travellers experienced an accident.

Graph 2.3. Incidence rate per month of health problems during a stay in developing countries, (Steffen et al, 2008).



Destination is very significant for exposure. For example, Chongsuvivatwong et al (2009) conclude that for European and US travellers, Phuket and Chiang Mai in Thailand should not be considered as high risk areas for TD. Yet, diarrhoea is still an important and serious public health problem in Thailand (WHO, 2007), therefore, taking this fact into account, it could be claimed that the seriousness of this topic should not be neglected nor disregarded counselling Westerners.

Surveys (Keystone et al, 2008) show that “22-64% of Finnish, Scottish or American travellers reported some health problem, usually dependent on the destination, and sometimes the season.” This demonstrates the need for further investigation into the field of travel health in general and specifically into the travel population leaving from Finland.

2.4. The example of Diarrhoea

The severity of diarrhoea ranges from harmless to fatal. In harmless cases the duration is very short whereas in more serious incidences such as severe acute diarrhoea, the resulting dehydration can be fatal. Diarrhoea is understood as a symptom caused by a number of different microorganisms, such as viruses or bacteria. Usually these agents are transmitted by faeces from one individual to another through food, water or dirty hands. Here we can identify a significant measure of prevention, that is, hygiene. (Lindstrand et al, 2006). Furthermore “diarrhoeal diseases caused the fifth largest number of DALYs lost in the world in 2002” (Lindstrand et al, 2006).

According to the authors of the book ‘Global health’, diarrhoea is very prevalent all over the world but the majority of deaths caused by diarrhoea are clearly found in low-and middle income countries. (Lindstrand et al, 2006)

Diarrhoea is indisputably a global health issue and clearly Traveller’s Diarrhoea is the most common travel related health problem. (Keystone et al, 2008), (Lindstrand et al, 2006)

To sum up, taking these facts together, with the increasing number of Finnish travellers choosing the Far East or other exotic places as holiday destination into consideration (Graph 2.2.b.), this study suggests a need for effective travel health counselling concerning the issue of diarrhoea. Even more, a Swedish study in the nineties based on epidemiological surveys carried out 20-30 years ago looking at Swedish travellers visiting the Tropics and few other countries already emphasized that “destination, age, mode and duration of travel “ are important factors in contracting illnesses like diarrhoea or respiratory diseases. They suggested, that the high incidence of illnesses among young or high risk area travellers or participants of adventure tourism or long trips indicates that the travellers need a more detailed pre travel counselling regarding health risks. (Ahlm et al, 1994). It would appear that there have not been changes since then, which would indicate the need for possible different techniques of getting information to travellers, such as TV, the internet, etc.

2.5. Travel related health risk profile

In the national immunization program, 95% of Finnish children are vaccinated against diphtheria, tetanus, pertussis, polio, *Haemophilus influenzae* type b, measles, mumps, rubella and influenza. Furthermore, vaccination against tuberculosis, hepatitis A- and B-, influenza or tick-borne encephalitis are given to those at most risk. (Rapola, 2007)

“As research in travel medicine increases, it will become progressively more important to combine the information sourced from a number of different methodologies and consider novel approaches, as this will enhance the evidence base for risk assessment and optimize risk estimates.” (Leder et al, 2008)

There is evidence that younger individuals compared with older ones or business people are ready to take more health risks during travelling and on holidays. This has also been observed and studied among Finns in Finland (Aro et al, 2009), but more detailed risk profiles of Finnish travellers are not well known, and the particular characteristics of travel-related health advice poses challenges as understanding risks and risk taking can vary considerably.

Researching Travellers' diarrhoea Ericsson et al (2008) list groups of individuals being at risk for it. Supported by other references they categorise into military groups, expatriates, students and “international travellers for pleasure and business“ to mention only a few. The risk population for enteric infections, they conclude, can be constructed by the following two predictive key factors: 1. Place of origin of the travellers and 2. The level of hygiene of the host country. The reason, they explain is, that international travellers bear a resemblance to the susceptibility developing diarrhoea of the children of the country visited. To summarize as follows the general factors that can be identified that could hypothetically contribute towards defining a risk profile of travellers:

- A. Into which group could the traveller be categorized?
- B. Place of origin of the travellers and
- C. The level of hygiene of the host country,
(Ericsson et al, 2008)

Although this concerns the issue of TD only, it is very relevant in a broader sense, too. However, attitudes of an individual travelling and his or her behaviour are not much considered in that example though each of the three points may imply certain behavioural characteristics.

In the book “Travel Medicine” (Keystone et al, 2008), and very similarly discussed in Leggat’s review of Risk Assessment in Travel Medicine (2006), the pre-travel consultation is structured into three key elements:

- 1. Risk assessment
- 2. Risk communication
- 3. Risk management

Risk assessment again consists of three subtopics such as

- 1. Travel variables: countries, season, activities and purpose of travel
- 2. Health/medical variables: Age/gender, Vaccination history, Medical/health history
- 3. Psycho social variables: Type of traveller, reference/peer groups (Visiting Friends and Relatives (VFR), students, businessmen), attitudes about risk (baseline knowledge, perception of risk)

(Keystone et al.,2008)

The aim is to assess the individual needs of a person intending to travel in order to provide relevant pre-travel counselling. In fact, neither approach tries to put travellers into categories for example high at risk, moderate at risk or any similar kind of classification. Looking at the variables might give an indication of why not, since there are so many factors to be taken into consideration when identifying possible risks. This means that only an individual perspective assessing the pertinent essentials relating to risks can possibly meet the unique case of a single traveller which would in consequence serve as a base for risk reduction or better risk management.

The distinctive nature of a traveller and his or her trip suggests the necessity of looking at the wide range of all variables involved, rather than narrowing down aspects to specify a risk profile as such.

An additional obstacle to creating a risk profile of travellers is that the “demographic pattern of Western travellers to tropical areas is changing” (Lopez-Velez and Bayas, 2007), which implies first, that exposure assessment of travel related disease of travellers needs to be individually and secondly because of the changing nature of the demographic structure of the travellers population, counselling has to be continuously modified to be appropriate and up to date.

2.6. Travel related health risk perception

The concept of the reduction of risk serves as the ground upon which Travel medicine is built. The risks with which one is concerned in that sector may be avoidable such as vaccine-preventable diseases, some others may not. Some risks again appear relatively frequent as for example TD in contrast with rare and serious illnesses. On the other hand we have a disease like Malaria, where the risk depends on several factors of such as “efficacy of the prophylactic medication and compliance by the traveller in taking the medication”. (Shlim, 2010)

However, the way we sense risk is very subjective, based on our perception of risk, what do we consider as risky, and our tolerance how far we might go knowing there is a risk of hazards existing. (Shlim, 2010)

One conclusion of the European Airport Survey interviewing passengers boarding an international flight to a developing country at nine major European airports, was, that nearly one quarter of travelers going to enter a high-risk area for malaria had an inexact risk perception and even half were concerned travelling to a destination where there was no risk

of contracting malaria (Van Herck et al, 2004). This is an alarming comment, calling for better travel health education and implying the need for more effective travel health counselling.

With these facts and since there are different guidelines available from various organizations to assist Travel related health consultation, “the role of the travel health practitioner is to become more sophisticated in his or her understanding of the various differences in guidelines” (Magill and Shlim, 2010). In effect there is a need to assess the individual travellers distinctively, focusing on risk management and not only on risk reduction or avoidance because of the nature of the perception and tolerance of risk. (Magill and Shlim, 2010)

Hartjes et al (2009) identified and described in their article gaps in travel health knowledge and in prevention behaviours. In addition, they emphasized, that this lack combined with the result of their study, namely a low level of perceived risk and high-prevention self-efficacy could create adverse health costs. Their study population was American students studying abroad; a group that characteristically relied on travel health information provided by travel guidebooks designed for young people. Where their study obviously calls for better travel health education for students, advocating Web based resources for transmitting information, it may at the same time indicate aims and pathways for a broader population looking for travel health advice. (Hartjes et al, 2009)

2.7. Travel related health consultation

Looking generally at the travel health consultation, we recognize that advising and providing information are dominant characteristics. Bauer (2005), questioning the result of such counselling, suggests that the use of an educational-behavioural framework might increase the success and acceptance of travel health advice: Travel health consultants

should view their work as being more like educating travellers than advising them. Consequently, Bauer (2005) believes, the term travel health *education* might be then more suitable than travel health *advice*.

Lopez-Velez and Bayas (2007) state that the social profile of Spanish travellers visiting high risk areas in the tropics is one of a high educational level and of living in large urban areas. This indicates easy access to travel health counselling services. Nonetheless they found evidence that a large number (26,9%) of these Spanish tourists studied intending to visit places with high health risks, sought no travel related health advice before the journey, moreover a great portion was unable to name any risk disease related to their destination and finally 40% could not correctly define the exposure for several communicable diseases. The message here is two-fold. First, regardless of the educational level and the opportunities of acquiring information, travellers have a tendency to be unprepared and unaware of potential travel related health risks, and may not seek professional advice well in advance. Second, this study suggests a broadening of travel related health consultation into travel agencies in order to reach more travelers, which improves the provision of relevant and useful travel health information.

Considerable awareness of risks observed among ICRC Expatriates by Dahlgren et al, (2009) during assignments overseas, still does not seem to be enough to prevent health risks. Where their study's focus was less on travel related health risks, it still shows that if individuals find themselves in a totally different climate and environment, risk taking behavior might be unpredictable. (Dahlgren et al, 2009). Preparedness for everybody travelling regardless of the purpose of travel, needs to be at the highest achievable level and to be as individual as possible for health protection. Furthermore, since risk reduction might not be possible in every case, more weight has to be put on risk management.

Counselling in Sweden is 57%, an indication that there is still room for improvement. "A majority of travelers sought general information (74%) and travel health advice (59%) prior to departure. Most perceived vaccination as safe and effective, but only 40% and 3% of

travellers reported adequate vaccine coverage against hepatitis A or hepatitis B, respectively.” (Dahlgren et al, 2006)

According to Gherardin (2007), a brief consultation makes it difficult to map out the complete risk profile. “Practitioners must allocate appropriate time; the longer and more complex the itinerary, the more time will be required. It should be made as a specific consultation, not an add-on to something else.” (Gherardin, 2007)

One Finnish study shows that 56% of travellers, who were travelling to tropical countries, sought travel health counselling before leaving. (Halmela and Voutilainen, 2008) A main problem, however, in Finland is that health professionals and travellers alike may overemphasize the importance of vaccinations and malaria prophylaxis while disregarding other health related advice. This advice may be equally vital for preserving general well being and physical comfort during the holiday, not to mention preventing serious illnesses, even death eventually in some cases.

2.8. Disease prevention during travel

Bruni and Steffen (1997), strongly advocate that “self therapy with an appropriate travel kit may be a solution for reducing incapacitation in uncomplicated illness”. Obviously instruction would be needed on how to apply the respective medicine the authors mention referring to a review made earlier. However, more recently in 2008 Travel Medicine (Keystone et al) strongly recommends the practice of carrying a medical kit for travellers and also describes what the contents should be. Moreover, they introduce a list of instructions on how to glue lacerations and staple wounds.

3. OBJECTIVES

This study has two main focuses. First, it has been recognized that travel counselling in Finland does not prevent travel related health problems on a satisfactory level. Therefore the findings will give, as fully as possible, descriptive information regarding the risk profile of Finnish travellers to create an up-to-date and more specific model, possibly scientific-model, of travellers today.

This leads to the second aim, which is to explore the potential impact of professional travel health counselling on self-perceived risks and how it could be improved to better fit the risk profiles of different travellers.

There appears to be a need for further investigations since there is still too high a rate of preventive cases, for example of diarrhoea, even though there has been counselling available in Tampere for a number of years. Furthermore, to conclude, this study will recommend through which channels advice and travel health counselling could be transmitted in order to better reach recipients.

The summary of the main objectives of the study are as follows:

1. To obtain descriptive information regarding the risk profile of Finnish travellers.
2. To explore the potential impact of professional travel health counselling on self-perceived risk and how it could be improved to better fit the risk profiles of different travellers.

4. MATERIALS AND METHODS

The study method was a survey through semi supervised self administered questionnaire (see appendix) with quantitative and qualitative questions before and after consultation in order to find a difference in the intended behaviour during respondents travel.

4.1. Study site

Tampere is the third largest city, having 200,000 inhabitants. (City of Tampere, 2008)

The city of Tampere Health Care Centre is part of the community health services and one of the few community in Finland which is giving specifically information and vaccines to travellers. At the Health Centre there were one receptionist, three public health nurses giving advice and vaccines and one medical doctor giving advice on vaccines and prescriptions for malaria prophylaxis and medicine. For clients who did not require medical prescription only the public health nurse at the reception attended. The professionals forming the team at the Travel health clinic at the health centre of Tampere is in accordance with Shaw (2006) who names the positions in his review “Running a travel clinic: doctor, nurse and practice administration staff”. The two general models discussed in Travel medicine (Keystone et al, 2008) embody a comparable arrangement with “Nurses and Physicians”.

4.2. Survey as a method

Arlene Fink defines surveys as follows: “Surveys are information collection methods used to describe, compare, or explain individual and societal knowledge, feelings, values, preferences, and behavior” (Fink, 2006).

The semisupervised questionnaire is one survey method where instructions can be given verbally before the form is given out. This is usually given out by the receptionist in a clinic or passed out in auditoriums and airplanes, for example. An advantage here is that the person distributing the questionnaires is at hand for any additional instructions which the respondent might need, and can collect the forms as soon as they are completed. The semi-supervised questionnaire method was, therefore, chosen for this study since this advantage was considered to be an important element for the results. Another important feature of this method is that it is cost effective.

European Travel Health Advisory Board (ETHAB) promoted surveys were looked at to see if similar questions should be asked. Indeed looking at the recommendations of travel related health consultation, similar questions were found and used.

4.3. Designing the question form

The design of the questionnaire begun in 2008 at the thesis seminar with students and professors and a pilot study was made as part of the initial design process. One of the models used in the early stages of the study plan was the airport survey questionnaire used in many studies worldwide.

4.3.1. Consultation of specialists

The design of the question form was part of the thesis seminar and the feedback from the supervisor and fellow students was important in this early stage.

Furthermore feedback received at the North European Travel Medicine conference held in Helsinki in May 2008 gave some additional input and ideas for the question form. Further

feedback was gained at the symposium of global health in Tampere. Information gained from literature such as the Review of Risk Assessment in Travel Medicine (Leggat P, 2006) gave a framework for the questionnaire.

4.3.2. Pilot study

The pilot study consisted of a total of 13 participants.

The question form was designed so that the participants received two separate question forms. The first one was given before the consultation and it was returned after filling it in. The second form was given after the consultation with the same code as the first and then returned. After this the two forms were clipped together. This became difficult to administer and complete supervision was needed to match the client and the correct form with the problem that there was a possibility of mixing the codes or clients. Furthermore the number of the questions on the second form was not necessary because it consisted of questions, which could have been answered before the consultation while waiting for the consultation. Some of the questions were also reformed and made more detailed for the final questionnaire.

4.3.3. Wording of the question form

Wording can be one of the most important aspects of the questionnaire, since it can be responsible for unnecessarily leading the respondent towards a particular view they may not actually hold, or confuse the respondent into giving an answer which is opposite to the views they hold. Therefore, straight forward, simple question sentences are essential where there are no ambiguities or complex dimensions (Buckingham and Saunders, 2004). The wording was chosen by taking this into the consideration, and the feedback of the pilot study proved that the questions were understandable.

4.3.4. The questionnaire

The five page double sided paper questionnaire was in Finnish language and consisted of 95 quantitative and qualitative questions (see translated form appendix). In addition to these there were 22 clarifying sub questions integrated. 2 questions were related to the socio-economic background of the respondent. This part was followed by 10 question about the destination, time, duration, nature of the journey like purpose of visit, hobbies at destination, level of accommodation, mode of transport and single or group traveller. The next section included 25 identical questions posed before and after the travel health counselling. Out of these, 9 questions were describing intended behaviour regarding exposure. After that 9 questions were asked concerning risk estimation of exposure. Finally the last 6 questions were collected about the severity of health events.

4.4. Ethical consideration and permission

The permission procedure at the City of Tampere consisted first an oral agreement from the staff of the clinic. The filled form was submitted to the town administration in order to make the procedure clearance. After three weeks the permission was approved by The City of Tampere Chief Doctor of Health Services, Paula Viita.

Consent was given by the participants when asked if they would participate in the study and their questionnaires were treated anonymously.

4.5. Inclusion and exclusion criteria

Inclusion criteria:

-over 18 years of age

- traveller coming to have travel related health consultation at the clinic in Tampere
- clients who give consent
- travelling destination is known

Exclusion criteria:

- travellers who do not understand written Finnish language.
- returning travellers

4.6. Recruitment

The participants were invited from among people who were to undergo health related travel consultation at the Tampere health clinic centre. When clients registered, they were asked by the researcher for their willingness to participate in the study. The participant received the question form before the consultation and answered the first part. After the consultation the participants answered the second part of the form and returned the filled in questionnaires to a return box at the reception or handed them over to the researcher. A written explanation information about the survey was on the first page of the question form and instructions were given on how to fill it in. The researcher was available to answer any additional questions about the survey. Successful recruitment of 200 participants required the attendance of the researcher at all times.

Not all eligible clients were approached individually, but rather in small groups at the same time. In other words, when a few clients were waiting in the waiting area they were introduced to the study together. Therefore it is difficult to estimate how many of the participants were approached and how many refused because some did not answer anything or were looking at the ceiling but refusal was also understood by the shake of the head. Occasionally a group refusal occurred.

4.7. Data collection

The data was collected through survey method between 4th of November and 13th of January at Tampere Health Care Centre on Mondays 9.00-10.30, Tuesdays 12.30–14.30, and Wednesdays 9.00–10.30.

The questionnaires were handed out by the researcher at Tampere Health Care clinic.

The procedure for the data collection took place as follows:

1. The clients arrived and queued for the receptionist to sign in
2. After having signed in the clients waited for their turn
3. The researcher approached the clients and asked if they would like to voluntarily participate in the study.
4. After filling in the first part, the clients were called for the consultation by public health nurse or the doctor.
5. The clients underwent the consultation.
6. After the consultation the clients answered the second part and returned the form to the researcher.

4.8. Data entry

A similar electronic form to the paper format was created with the *e-lomake3* programme to enable data entry.

The original plan was to find a group of travellers through the travel agencies' internet pages who could answer the survey electronically. This plan was withdrawn due to time consumption needed for the arrangements and networking. The data information entered was transferred to Excel and then to SPSS. After the data entry was completed, every tenth questionnaire was checked as a control.

4.9. Analytical approach

The data was first examined for the distributions of age and gender.

The analysis was then made by the utilization of the PASW 17.0/ SPSS 17.0 software programs and the charts were processed with Excel 2007.

Statistical methods were frequency and percentage distributions to find out the intended risk behaviour and risk perception of the travellers.

For the decision point to reject the null hypothesis a confidence level of 0.05 was chosen.

The proportions of all the participants for each question answered were analysed. Furthermore the corresponding confidence intervals are provided because of the varying sample size, which are shown in the first column of the tables 5.3.1, 5.3.2 and 5.3.3. The confidence interval for proportion 'p' was calculated as follows

$$p \pm z_{\alpha/2} \cdot \sqrt{\frac{p \cdot (100 - p)}{n}}$$

where z is the factor for the 0.05 confidence interval and the square root expression an estimate of the standard error of the proportion p for sample size n. (Swinscow, 1997)

Between genders no differences in their answers is the null hypothesis. The same methodology of SPSS Monte Carlo significance test was used as in similar travel health related studies (Halmela and Voutilainen, 2008). The probability of this statistics was the basis for accepting or rejecting the null hypothesis.

Categorizing ages into three ranges allowed looking for trends. This was accomplished by applying the linear by linear association test.

To find out if the consultation had an impact, the before and after answers of 25 identical questions were tested. Because of the dependency of the pairs, the marginal homogeneity test was applied. The null hypothesis is that the consultation has a little or no impact, that

is, the answers did not change statistically significantly.

Additionally, cross tabulations were made to see the direction of the changes of the answers that are statistically significant and to determine if the intervention had a positive or negative impact, see graph 5.5.a.

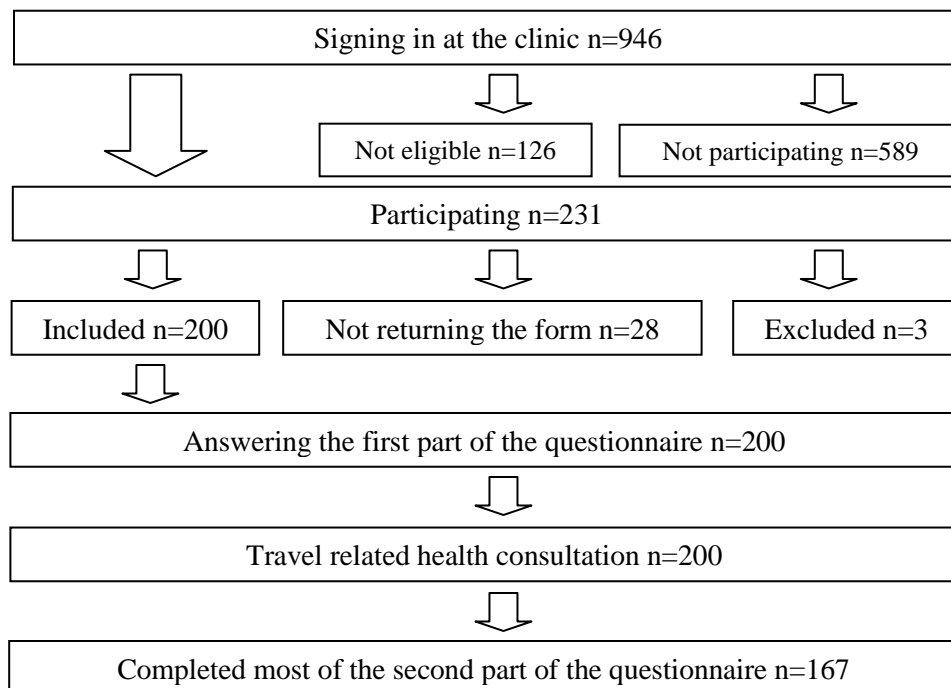
5. RESULTS

5.1. Study population

In 21 data collecting days, between 4th of November 2008 and 13th of January 2009, all together 946 clients were registered at the reception, from which the under aged and post travellers had to be deducted in order to obtain the required number of eligible study subjects. An estimation of the number of the under aged, non and post travellers was, according to the public health nurse, 6 per day. An estimation of 820 eligible subjects was made which gives the recruitment rate of 231 / 820. There were all together 231 forms, with consecutive coded numbers, which were handed out. Out of these 203 were returned, including two empty and one disqualified for being under age.

The filling in of the form varied so that 167 were almost or completely filled in, with the least complete answering only the four first questions.

Graph 5.1.a. Outline of study and answers



The number of included participants was in total 200. As to gender, the proportion is 52,3% women. The mean age was 37.5 ranging from 18-80 years with the age categorization put into 3 classes: 18-37, 38-57, 58-80. The range of the last group was large because there was only 1 over 77. The educational level of the participants was: higher university degree 17,9% (35), lower university degree 12,8% (25), applied sciences degree/diploma 29,2% (57) and vocational training 17,4% (34). Those travelling with chronic sicknesses were 17,8% out of which those who answered, asthma was the most frequent with 3, 5%. The mean of travel times was 7.39 days.

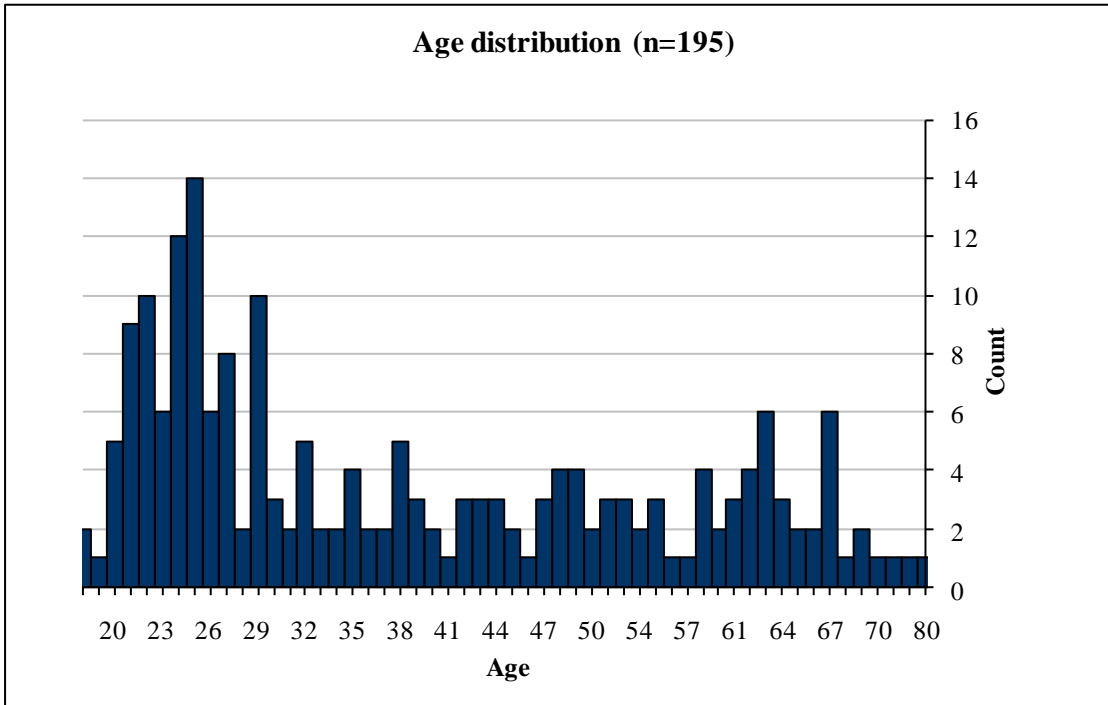
Furthermore, n=197, 56.3 % (111) of those who answered had never received professional travel health consultation and 24.9% (49) had received once and 18.7% (37) had received more than once.

Table 5.1 Demographic background

Demographic information of the travellers	n	years	f	valid%
Gender				
Women	197		(103)	52.3
Mean age	195	37.5		
Median	195	35		
Age range	195	18-80		
Age in categories	195			
18-37			(107)	54.9
38-57			(49)	25.1
57-80			(39)	20.0
Education *	195			
Higher university degree			(35)	17.9
Lower university degree			(24)	12.3
Applied sciences degree/diploma			(57)	29.2
Vocational training			(34)	17.4
Student examination			(31)	15.9
Grammar school			(14)	7.2

*Only the highest option was counted

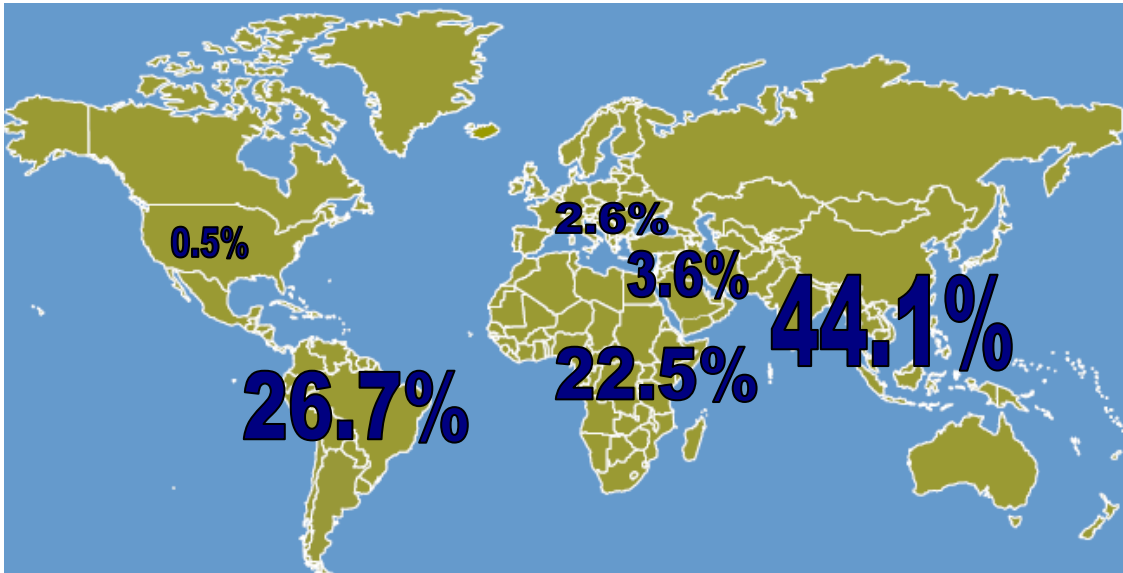
Graph 5.1. Age distribution of the respondents



5.2. Destination, Reason for Travelling, Accommodation, Hobbies

Of those who came to the Travel health clinic and answered n=195, 17,3%'s (34) first destination of entry was Thailand followed by India and Gambia. Map 5.2. represents the first country of entry distribution of destination in percentages looking at the continents.

Map 5.2 Travellers first country of entry destination continent in percentages n=195



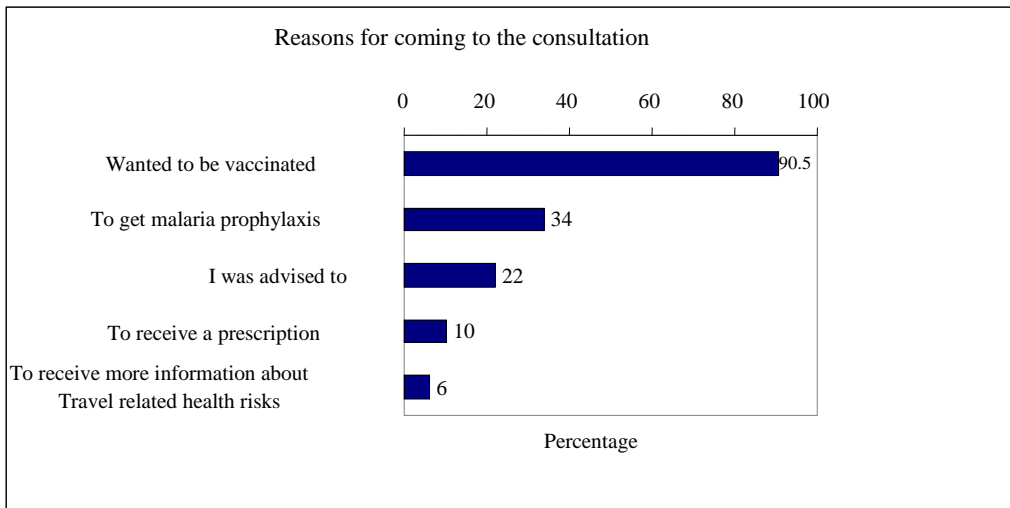
Six and half percent of the individuals visiting the Travel health clinic answered ‘work’ as the main reason for travelling, beside 90% tourists (holidays) and 12.5% VFR (Visiting friends and relatives).

It is clear from the following table 5.2 also (n=195) that the majority of travellers are on holiday, i.e. 90% and stay in hotels, 82%.

Table 5.2. Information about the intended travel

Information about intended travel	n	%	f	days
Destinations to 42 different countries	195			
Thailand		17.3	34	
India		14.8	29	
Gambia		11.7	23	
The mean travel duration time	178			33,8
Median				15.0
The main reason for travelling:	199			
Holiday		90.5	180	
Work		6.5	13	
VFR		12.6	25	
Accommodation	200			
Hotel		82.5	165	
Hostel		33.0	66	
Friends & Relatives		19.0	38	
Camping		8.5	17	
Activities	199			
Did not know beforehand		55.0	110	
Not going to take part in any activity		11.5	23	
Scuba diving	200	6.5		
Walking/hiking	200	6.5		

Graph 5.2 Reason for coming to consultation n=199 (multiple choice possible)



5.3. Risk profile

The risk profile was studied looking at the intended behaviour during their travel before the consultation.

The difference before and after answers were even with the four significant statistical difference small (see chapter 5.5) and since the sample size of the 'before' study population was larger, the 'before' answers were chosen to show the intended behaviour in order to find differences among gender and age categories.

5.3.1. Intended behaviour of the traveller before the consultation

In the table 5.3.1. is shown the yes answers for the each question. The answers on the question form were yes/no/i don't know. The 'I don't know' answers were only few and categorized with no for the statistical analysis. The 'yes' answers are percentages within the chosen category, gender, age group.

Table is divided in to 2 sections first giving the answers to risk behaviour and the second to intension for protective behaviour. All the significance level <0.05 are marked with bold text and a star after the value and 0.06-0.10 are marked with bold text and normal is 0.11 or higher.

Table 5.3.1. Intended behaviour, frequencies (f.) and percentages (%) of those who answered yes

	n	Total		Gender			Age			p-value	
		(f.)	% of all	CI 95%	(f.) % Men	(f.) % Women	p-value	(f.)18-37	(f.)38-57		(f.)58-80
Risk behaviour											
Eat uncooked food	189	(83)	43.9	36.8-51.0	(37) 42.0	(45) 45.5	0.68	(52) 50.5	(19) 41.3	(10) 27.8	0.59
Go out late	197	(88)	44.7	37.7-51.6	(52) 56.5	(33) 32.4	0.000*	(63) 60.0	(11) 22.9	(10) 25.6	0.12
Drink at one time	192	(33)	17.2	11.9-22.5	(22) 24.7	(8) 8.0	0.000*	(24) 23.3	(4) 8.7	(2) 5.3	0.000*
Protective behaviour											
Protect from sun	198	(192)	97.0	94.6-99.4	(88) 94.6	(101) 99.0	0.11	(104) 98.1	(45) 93.8	(38) 97.4	0.39
Drink bottled water	198	(180)	90.9	86.9-94.9	(81) 87.1	(97) 95.1	0.08	(92) 86.8	(46) 95.8	(38) 97.4	0.99
Wash hands properly	198	(186)	93.9	90.6-97.3	(85) 91.4	(99) 97.1	0.13	(98) 92.5	(47) 97.9	(37) 94.9	0.54
Use condoms if you	161	(149)	92.5	88.5-96.6	(70) 87.5	(78) 98.7	0.005*	(90) 97.8	(34) 89.5	(22) 81.5	0.12
Use anti mosquito repel.	133	(106)	75.7	72.9-86.5	(47) 71.2	(57) 80.3	0.28	(25) 74.3	(25) 71.4	(26) 83.9	0.13
Use mosquito nets	137	(52)	38.0	29.8-46.1	(28) 42.4	(21) 30.9	0.24	(31) 43.7	(10) 30.3	(8) 27.6	0.58

bold text= p-value <0.2

*= statistically significant p-value <0.05

For comparison between men and women Monte Carlo test was used

For comparison between age categories linear by linear association was used

Table 5.3.2. Risk perception before the consultation.
Frequencies (f.) and percentage who answered average or great.

	Total			Gender		p-value	Age			p-value		
	n	(f.) % of all	CI 95%	n	(f.) % M		(f.) % W	n	(f.)%18-37		(f.)%38-57	(f.)%58-80
Estimate the risk of sickness or accident during this trip, if you:												
Eat uncooked food	198	(144)72.7	66.5-78.9	195	(67)71.3	(75)74.3	0.748	193	(80)74.8	(33)68.8	(27)71.1	0.599
Not protect from sun	195	(155)79.5	73.8-85.2	194	(70) 74.5	(85) 85.0	0.068	193	(87)81.3	(39)81.3	(28)73.7	0.407
Drink unbottled water	196	(179)91.3	87.4-95.3	195	(86)92.5	(92)90.2	0.620	193	(96)90.6	(45)93.8	(35)89.7	0.994
Do not wash your hands	195	(174)89.2	84.9-93.6	194	(82)89.1	(91)89.2	0.985	192	(94)87.9	(43)89.6	(34)91.9	0.535
Stay out late	196	(109)55.6	48.7-62.6	195	(49)52.1	(59)58.4	0.391	193	(53)50.0	(31)64.6	(24)61.5	0.138
Do not use condoms	185	(160)86.5	81.6-91.4	184	(75)85.2	(84)87.5	0.654	182	(93) 88.6	(40) 88.9	(24) 75.0	0.077
Drink a lot of alcohol	193	(151)78.2	72.4-84.1	192	(72)77.4	(78)78.8	0.819	190	(76) 71.0	(38) 82.6	(34) 91.9	0.006*
Don't use mosquito rep.	134	(84)62.7	54.5-70.9	133	(37) 55.2	(46) 69.7	0.086	132	(38)55.9	(22)66.7	(27)71.0	0.148
Don't use a net when sleep	133	(73)54.9	46.4-63.4	132	(34)50.7	(38)58.5	0.388	131	(34)50.0	(21)63.6	(16)53.3	0.594

Table 5.3.3. Frequencies (f.) and percentages within the group who answered average or severe.

	Total			Gender		p-value	Age			p-value		
	n	(f.) % of all	CI 95%	n	(f.) % M		(f.) % W	n	(f.)%18-37		(f.)%38-57	(f.)%58-80
Estimate what kind of consequences the following diseases might have to health:												
Diarrhoea	195	(163)83.6	78.4-88.8	194	(75)81.5	(87)85.3	0.745	191	(88)82.2	(40)83.3	(32)86.5	0.219
Sun burn	194	(151)77.8	72.0-83.7	193	(62) 68.1	(88) 86.3	0.003*	191	(79)73.8	(42)87.5	(27)75.0	0.530
Hepatitis	194	(169)87.1	82.4-91.8	193	(74) 80.4	(94) 93.1	0.010*	191	(94) 88.7	(44) 91.7	(37) 75.7	0.060
Dengue fever	193	(111)57.5	50.5-64.5	192	(49)53.8	(61)60.4	0.383	190	(61)57.5	(29)61.7	(19)51.4	0.630
Malaria	193	(144)74.6	68.5-80.8	192	(65)70.7	(78)78.0	0.252	190	(78)73.6	(40)83.3	(24)66.7	0.719
STD	191	(139)72.8	66.5-79.1	190	(64)71.1	(74)74.0	0.745	188	(82) 76.6	(38) 80.9	(16) 47.1	0.005*

bold text= p-value <0.2

*= statistically significant p-value <0.05

For comparison between men and women Monte Carlo test was used

For comparison between age categories linear by linear association was used

Considerably high percentage of travellers intend to eat uncooked food (43,9%) especially those of aged 18-37 (50,5%) See table 5.3.1. Drinking bottled water increases with the age categories. Going out late is increases with the 18-37 years age group and within male respondents. Use of condoms were higher in the female younger age group. Drinking alcohol at once was clearly higher with males 24.7 % than with females 8 % and with younger age group 18-37 years old 23.4% with lower 38-57 8.7% and 58-80 5.3%.

The differences between male and female intended risk behaviour were statistically different. More men drink at one time a lot of alcohol and go out late than women. Furthermore more women intend to protect themselves with using condoms than men. The trend test shows that there is only one statistically significant difference with age categories about indented drinking while travelling.

5.3.2. Risk perception before the consultation

There were only one statistically significant finding between age categories with the perception of drinking a lot of alcohol at once, see table 5.3.2. The older group 58 to 80 years of age 91,9 % (34) found that excessive drinking might cause average or great risk of sickness or accident and 18 to 38 years age group the percentages was 71% (76).

5.3.3. Respondents estimation of the consequences of diseases.

There were two statistically significant difference between men and women concerning sun burn. Of men 68,1 % (62) found that sun burn causes average or severe consequences to health. For the same question for women the percentages was 86,3 (88), see table 5.3.3. More women found also hepatitis to have average or severe consequences to health than men.

5.3.4. Medical insurance and knowledge of political/crime situation of the destination

In this study questionnaire n= 199, 22.1% (44) replied they knew where to seek help services if they fell ill at their destination, whereas 27.6% (55) said they would find out before departure and 38.7% (77) would seek help only if they fell ill. This means that quite a high percentage had not really considered the fact that they could or might fall ill or have an accident away from home. As many as n=196, 82.7% (162) had taken medical care insurance and 10.2% (20) said they would take it before the trip and 4.1% (8) did not know if they had this type of insurance.

As to crime and political conflicts, n=195, 78.5% (153) knew the security situation at the place of destination, acquired through sources such as the internet and news. So that although they were covered by insurance and were therefore financially covered, they did not know what they would do if something happened.

5.4. Medical kit for travellers

The large amount 87.4% (167) of the respondents n=191 answering that the question about the medical kit for travellers would take along something to clean wounds such as disinfections and band aid. Moreover n=187, 86.1 % (161) would take along hand disinfectant and even n=177, 85.3% (151) would pack additional medicine which they might need. 33.5% (53) of n=158 would take condoms and a considerable group of n= 185, 71.4% (132) take their vaccination card along.

5.5. Impact of the consultation

There were 25 identical questions asked before and after see table 5.5. The marginal homogeneity test was used to compare, before and after. Four dependent paired variables were found statistically significantly different. The marginal homogeneity test does not show the direction of the change but it can be shown descriptively from the charts.

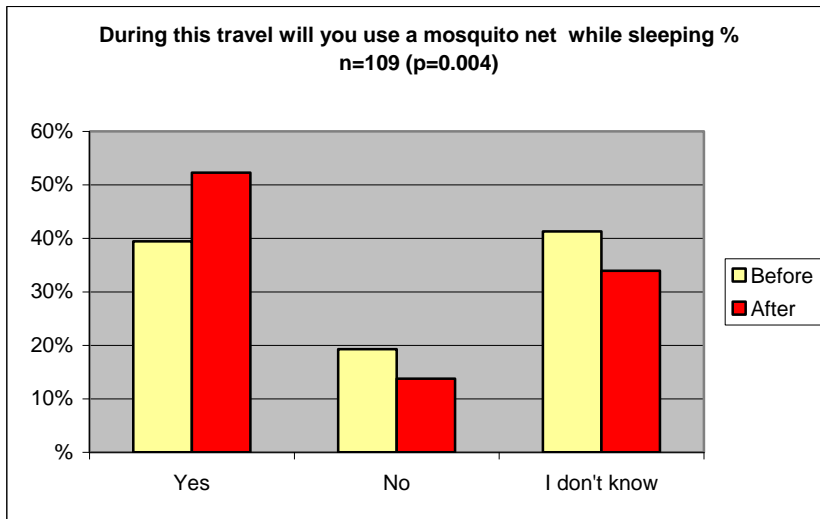
From these graphs, therefore, it is shown that the four significant variables where there is change after consultation are: use of mosquito nets, risk of sickness or accident if staying out late, serious consequences to health from diarrhoea, and to health from sun burn.

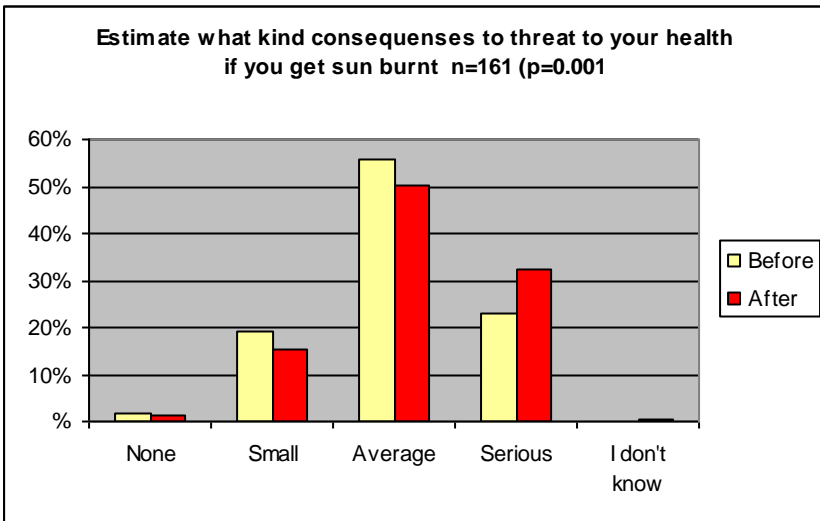
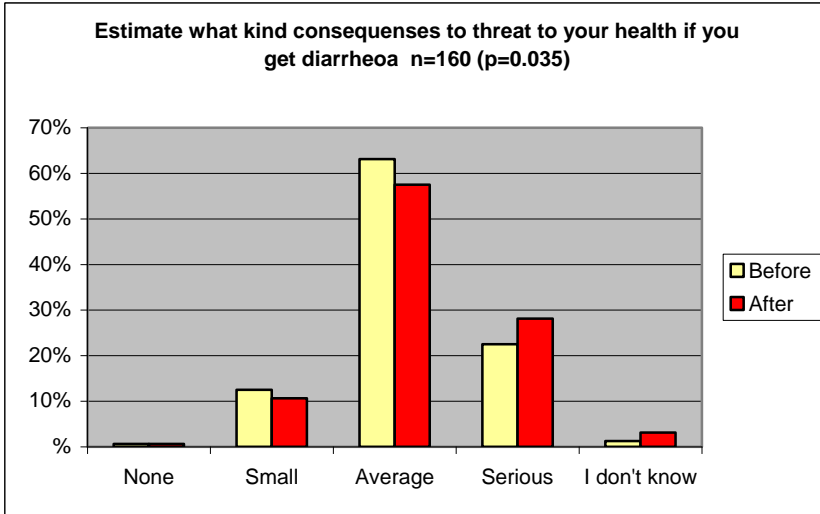
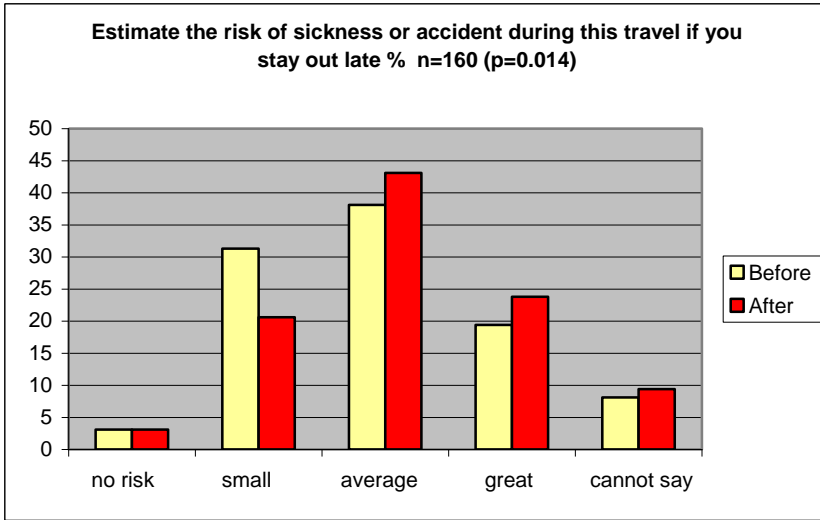
Table 5.5 Testing the difference of the answers before and after

Question asked	n	p-value
During this trip you will:		
Eat raw food e.g. meat, fish	161	0.746
Protect your skin with sun screen	166	1.000
Drink only bottled water/soft drinks	166	1.000
Wash your hands carefully	166	0.094
Stay out late e.g. visit a night club	163	0.655
Use condoms if you have sex with someone other than your own regular partner	130	0.055
Drink a lot of alcohol at one time i.e. 10-12 units	157	0.166
Use mosquito repellent	111	0.089
Use a mosquito net while sleeping	109	0.004
Estimate the risk of sickness or accident during this trip, if you:		
Eat uncooked food e.g. meat, fish, salad	160	0.740
Not protecting your skin with sun screen lotion or clothing when in the sun	159	0.592
Drink unbottled/ tap water	160	0.735
Do not wash you hands/ bad hygiene	159	1.000
Stay out late	160	0.014

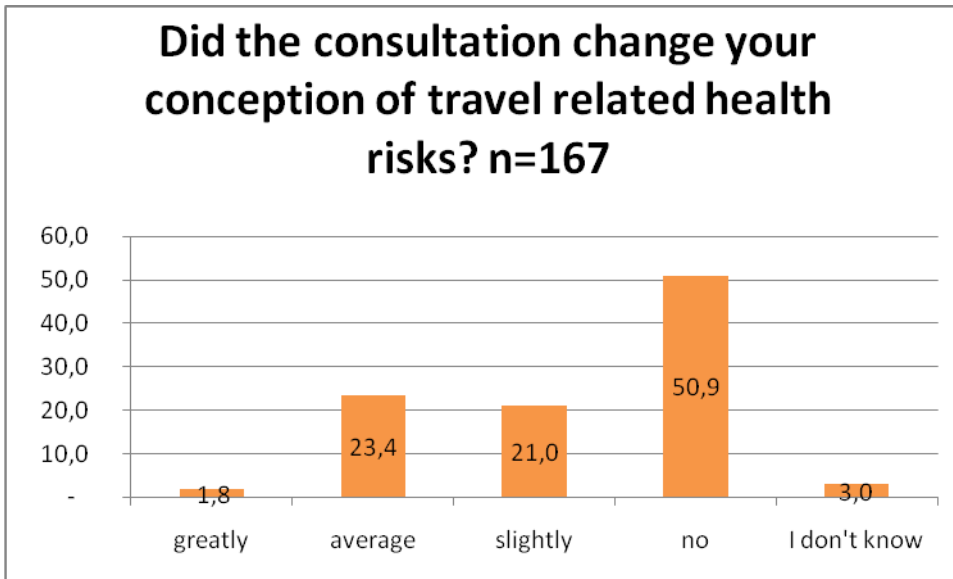
Question asked	n	p-value
Do not use condoms if you have sex with someone other than your own regular partner	151	1.000
Drink a lot of alcohol at one time	159	0.620
You do not use mosquito repellent	102	0.209
You do not use a net when sleeping	101	0.581
Estimate what are the following possible health risks during this trip?		
Intestinal bacteria i.e. diarrhoea	160	0.035
Sun burn	161	0.001
Hepatitis (liver infection)	159	0.336
Dengue fever	153	0.178
Malaria	156	0.939
Sexually transmitted disease	153	0.885

Graph 5.5.a. Statistically significantly different answers before and after the consultation can be clearly seen that the yes answer increased after the consultation with intended behaviour

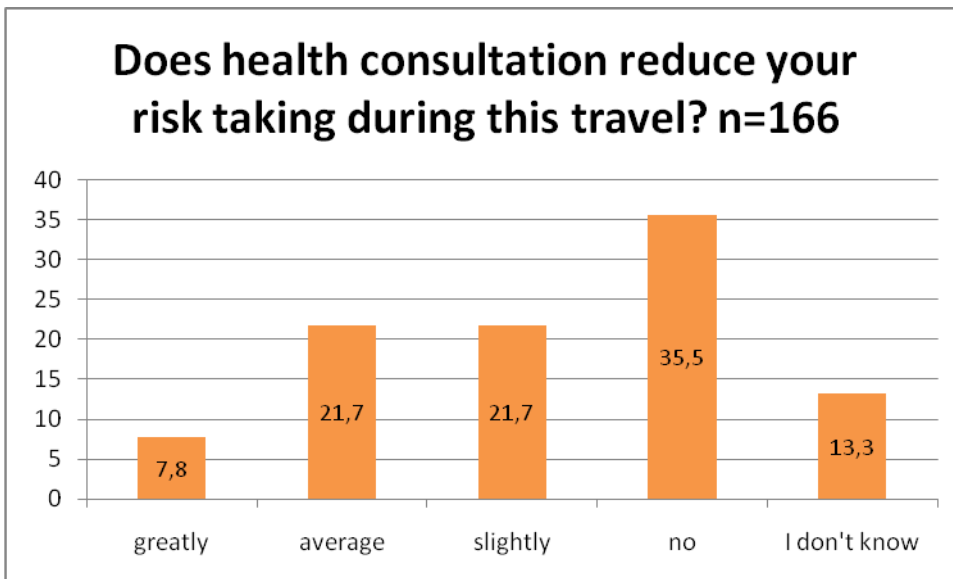




Graph 5.5.b.



Graph 5.5.c.



Graph 5.5.b which asks ‘did the consultation change your conception of travel related health risks?’ Over half, 50,9% (85) of the respondents choose ‘no’.

Graph 5.5c illustrates the answers to the question ‘did health consultation reduce your risk taking during this travel?’. 35,5% (59) of the participants made the choice of ‘no’. A large

proportion of the ‘no’ answers is again recognised. 51,2% (85) decided to alter their behaviour while travelling regarding risk taking. The main feature here is that 7,8% reduce their risk taking ‘greatly’ which, I suggest is significant.

5.6. Where did the travellers get information before the consultation

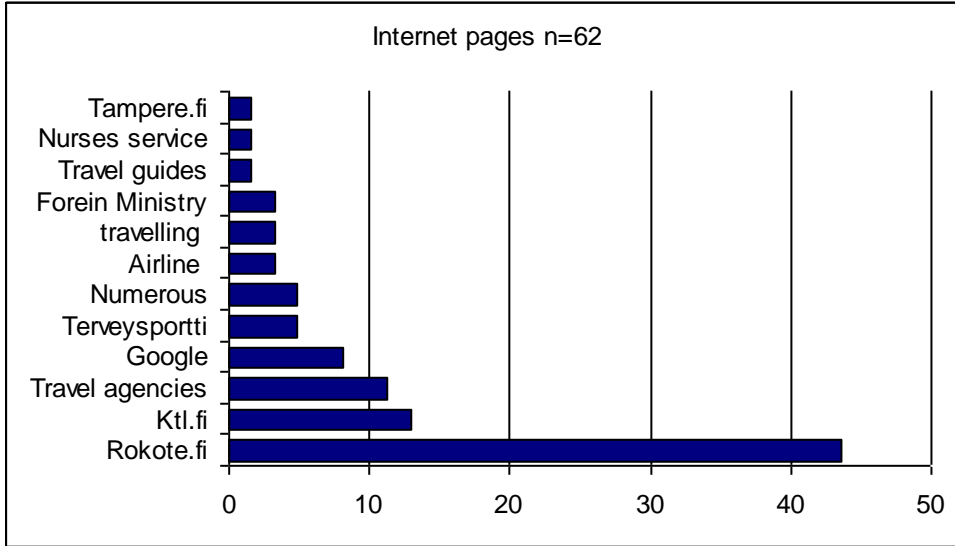
From 199 respondents, 73.9% (147) said they searched for information about travel related health advice from the internet before coming to the consultation.

Table 5.6. Places where travellers sought advice or information before this consultation were

Places where respondents sought advice or information before this consultation n=199	
	% (f)
Nowhere	5.5 (11)
Internet	73.9 (147)
Magazines	7.5 (15)
Pharmacy	5.0 (10)
Health centre	21.1 (42)
Occupational Health Centre	8.0 (16)
Travel Heath Clinic	10.6 (21)

Only 62 answered from which internet pages they sought information.

Graph 5.6. From which internet pages travelers searched advice in percentages



6. DISCUSSION

The general objective for undertaking this study was to assess the knowledge, attitudes, and behavior of travellers in Tampere in connection with health risks involved while abroad in very different conditions from their own in Finland. The destination of the majority of travelers was to the Far East, a quarter to South American countries and nearly a quarter to the African continent with the rest divided between North America, Europe and the Middle East, that is, countries where culture, race and social behaviour is extremely different. The travellers were mostly tourists and only a small proportion were on business or visiting friends or family.

The motivation for this study was prompted by the need to examine more closely the ever increasing mobility of the population and the possible preventability of many of the cases of contractible diseases and various degrees of stomach upsets from mild to potentially fatal attacks. In addition to the risks connected with health it was felt that other reasonably preventable problems, such as accidents and potentially serious political unrest, and consequences of crime at the destinations should also be integrated into questionnaires in order to widen the perspective of risks. Results from these questionnaires could be utilized for further studies in order to improve conditions enabling the decrease in incidents of illness and serious incidents which put tourists in danger, either through carelessness in behavior, carefree attitudes or ignorance through lack of knowledge of the other culture.

6.1. Aims and main findings

This study is based on a questionnaire received from 200 participants seeking travel counselling. This sample was adequate but the large number of variables complicated the statistical calculation for finding a more exact risk profile from which it could be extrapolated to the whole population who required advice or education. When finding a risk

profile the sample size should be large so that risk profile by destination could be looked into. Certainly a study concerning one destination is feasible because the epidemiology of one country would be easier to describe. However, as mentioned in 6.2. the results have nevertheless proved to be valid and reliable, and can be generalised in Tampere.

6.1.1. Study population

It seems that the age distribution compared with the Tampere population is skewed. Although because the respondents were not chosen, the distribution of age and gender became by chance. In this study it was not possible to find out the actual age nor gender distribution of all clients it is assumed that younger people visit more travel health consultation than older. Other interpretation could be that younger clients want to answer more questioner than older. The gender distribution was similar to the Tampere population so it could be said that women and men seek equally for travel related health consultation.

6.1.2. Tourism, destination, reason for travelling, accommodation, hobbies

Tourism demand slowed significantly through the year under the influence of an extremely volatile world economy, for example the financial crisis, commodity and oil price fluctuations, sharp exchange rate fluctuations, all of which undermined both consumer and business confidence and resulted in the current global economic recession.

As shown in this study, Thailand was the most common destination also in the European Airport Survey, (Van Herck et al, 2004). Gambia was the third most popular destination and the reason why it might rank so high, is, because during the time I was conducting my study, flight costs for this destination became much cheaper than earlier and so it seems the reduction in the price of the airplane ticket had a strong impact on people's preference of destination.

It is possible that people travelling for business reasons might go to a private doctor and

therefore the real amount of business travellers searching for travel health advice may be in reality higher. On the other hand, Van Herck et al. suggest by analysing and comparing the subgroup of travellers, VFR, tourists and business travellers, that actually “tourists had more often sought travel health advice” (Van Herck et al. 2004) which is then in accordance with my results.

6.1.3. Risk profile

The findings supported similar results to other studies in many areas and particularly in the men and the age group 18-37 years old that intended risk taking was considerably higher than in the older population, especially in connection with going out late and consuming high levels of alcohol at one time. The results that younger individuals intended to take more risks concerning health are supported by Aro et al 2009 and Ericsson et al 2008, see Chapter 2.4. As seen in the literature review p. 16, it appears that when in a new, different climate, people’s behavior become unpredictable. This would suggest that there is a need for further more solid information to be directed towards this group. Ericsson et al comment in the concluding remarks about Traveller related Risk Factors that ‘robust scientific evidence suggest a high rate of attack of TD in young subjects’. Furthermore they propose that the most affected are between 20 and 29 years of age, the reasons they estimate are:

- Greater appetite of young individuals leads to a larger bacteria load or
- The association of young age with an adventure travel style implies ‘a higher risk of encountering contaminated food or water’.

The highest risks involved for these groups is in connection with excessive drinking, which in itself leads to being less cautious than normal and taking decisions about the areas they visit, such as places where they might become victims of crime, and having unsafe sexual contacts. They may well be aware of these hazards to some extent, but yet they often change their behaviour abroad in the name of adventure, by becoming careless.

6.1.4. Medical kit for travelers

From the questionnaires, there was a clear indication that the majority would prepare themselves for accidents or feeling unwell by taking along various preparations such as pain killers, plasters and disinfectants for wounds. This again would suggest that travellers are aware of the possibilities of their being at least some possible minor problems during their time abroad.

6.1.5. The impact of the consultation

It would appear from this study that consultation for nearly half the participants did have some impact on their awareness of what the consequences of not preparing themselves for new situations would bring about, but nevertheless it seems that there should still be a more effective means of convincing travellers of the need to take advice seriously before and during their time abroad. As to eating habits and hand washing, most were fully aware before consultation of the dangers though some still said they would still eat even uncooked food.

Where there was change, more people claimed that they had more information it was in four areas, that is in the use of mosquito nets, in understanding the risk of sickness or accident, in being aware that contracting diarrhoea can have serious consequences to the health and finally, that sun burn can also result in more serious problems.

From a different aspect in graph 5.5b, in answer to the following two questions, 'Did consultation change your conception of travel related health risks?' 46,2% answered positively and to 'Does health consultation reduce your risk taking during this travel? ', it was 51,2% .

These two separate graphs show that in the first there are only four variables which are statistically significant. but in the second it would appear there is an overall indication that consultation does have a positive of reducing risk taking during travel.

On graph 5.5. b. (Did the consultation change your conception of travel related health risks?) of the 'no' 50,9% (85) seems to be a high number. However, 6% (11), see graph 5.2. of the individuals intending to go abroad and therefore seeking travel counselling, ask for further advice concerning travel related health risks. This in relation with the fact that actually up to over 45% change their conception of travel related risks is the point, which needs to be considered. Even though 21% of those change their concept only slightly, they still adapt their understanding of travel related health risks. This suggests an impact of successful travel counselling concerning information about risk exposure to some extent.

6.1.6. Where did the travelers get information before the consultation

Overall the study shows that there were two main sources used for information: a. health centres and b. the internet. The latter would appear to be an increasingly popular means to obtain knowledge about many different aspects of maintaining good health while travelling.

6.2. Strength of the Study

The strength of this study is that it supports many of the other studies but in addition, it also extends research in this area by having two questionnaires, one before and one after the consultation. This has the added advantage of giving deeper and wider information into attitudes and knowledge about health risks in order to show any weaknesses in earlier results. This further information could lead to more accessible information for travellers' advice possibilities.

Generalizability: the recruitment rate was fairly high and therefore it could be suggested that the results in Tampere are generalizable. In Finland the result can be used as indicative information of travelers going to health consultations.

Validity and reliability: The pilot study was an important part of validating the

questionnaire in that it was instrumental in understanding how the questions would be received and how they might be changed and improved. The response rate was fairly high and the questionnaires which were returned were filled in well and legibly. Even though this was voluntary, the return was high, which would indicate an interest and a general understanding of the seriousness of the research. It is difficult to estimate why some people did not wish to respond but it would appear to have been mostly because they were in a hurry, as mentioned in 4.7 of this study. All were Finnish speakers and had no difficulty in understanding the questions. All the staff involved were professionals and themselves interested to take part in the research. They were at hand to answer any questions the participants should ask.

This study has also looked in more detail at particular characteristics of the participants in order to find more specific risk profiles, which will give information for further research.

6.3. Limitations of the study

There is always the danger with questionnaires that the answers will not be accurate, but in this case the participants were cooperative and took their time to fill in the questions.

The questions themselves can also prove to be limiting, but a great amount of time was taken to ensure the best possible and accurate results. As mentioned in the aims and main findings, there were some complications in the statistical calculations due to the large number of variables, however, these were selected to some extent in order to find a risk profile.

A more extensive qualitative research methodology whereby there were open questions might prove to give a deeper and wider understanding of people's attitudes and therefore would be worth pursuing in further research studies on the efficacy of the consultation.

6.3.1. Study population and educational background

Compared with the educational structure of the Finnish population in 2008 (Statistics Finland, 2009) it seems that the educational distribution in this study population is slightly higher; for example 8% of the Finnish population undertake a long, very long or even higher university training, whereas in here a population of 17,9% (35) had a higher university degree. The categorization used does not apply to the Finnish statistics and since in fact does not contain such a classification as for example ‘vocational training’ used. Only a rough interpretation can be made, therefore, about the meaning of the educational background of the participants in the study. However, two possible explanations can be given:

A: Higher education is associated with higher income so affordability to go abroad is more likely for these people. To sum up, the individuals travelling might represent a higher educational level than the educational distribution in the Finnish population as a whole. But this has to stay as a hypothetical comment, not generalizable, because I did look only at the ones seeking pre travel health advice and not at the travellers leaving from Finland as an entity including also the ones not searching travel health counselling. Tampere population educational background is similar to Finland.

Yet, this hypothetical comment would be in accordance with the findings of Lopez-Velez and Bayas. Together with other scholars they described the social profile of travellers to high risk areas in the tropics based on a study done at the departure gates of international airports in Spain as mainly employed individuals “with a high educational level and living in large urban areas.

B: Higher education is also associated with higher awareness of dangers and risks due to better general knowledge and information seeking attitudes. Therefore people with lower educational background would take a bigger share in the group not seeking pre travel health advice.

6.3.2. Internal validity

On almost every study day, the first ones to sign in at the clinic were naturally excluded because they did not have to wait before entering the consultation and therefore there was no possibility to participate in the questionnaire. The reason for this was that one of the requirements for permission to study was that it should not interfere with the regular work practice at the centre. This causes selection bias which might have an influence on the representativity of the results. Furthermore for those who did not want to answer were another group which influences the generalizability.

6.3.3. External validity

The sample was chosen from the clients of the travel health consultation aged over 18, therefore the result can be generalized for adults visiting the clinic.

6.3.4. The limitations of the questionnaire

After the first pilot session, the question form was changed considerably. However the second actual questionnaire was not piloted at the clinic due to time limitations. After starting the distribution, a small number of ideas for improvement was suggested by the respondents and the staff, for example, question asking ‘What information was special or essential in the consultation’ was left out.

It could also be considered that the large number of variables, that is 273, has to some extent created an excess of information for the research question posed and also complicated interpretation of the outcome. On the other hand, this extra information can be useful for further research.

6.4. Scientific Conclusions

The main objectives of this study as mentioned earlier were, a. to obtain descriptive information regarding the risk profile of Finnish travellers and b. to explore the potential impact of professional travel health counselling on self-perceived risk and how it could be improved to better fit the risk profiles of different travellers.

In this study the results were similar to those of, for example Hartjes et al, 2009. In addition a 'Finnish study from this year, 2010, with a slightly different focus came to the same conclusion as Aro et al, 2009, that younger travellers, particularly young men are prepared to take more risks than the older generations. This in fact, fits the general pattern of behaviour even at home (Hartjes et al, 2009) In addition, a Finnish study from this year with a slightly different focus came to the same conclusion. (Aro et al, 2009)

Professional travel health counselling had an impact on self-perceived risk of individuals coming to the consultation. But the differences in the results of the before and after answers were so small that the knowledge/attitudes and practices yield long before the consultation. As a result, this means that the main influence should be before the consultation and through as many different medias as possible, especially the internet and also through the schools' health education where travel health education could be a part of their health education. (Bauer, 2005, Hartjes et al, 2009)

To improve the travel health consultation as such, further studies are needed targeting the content of given advice and practices in the consultation, which was not included in this study. It could therefore be considered that the term 'education' would be more appropriate than 'advice' as considered on p.16 here, in the cases where there is no need for vaccinations or prescriptions.

6.5. Comparison to earlier studies

Earlier research, such as airport studies, tended to follow a similar pattern and questionnaires, and therefore, validated previous results with little new different knowledge. However, this research is more comprehensive and includes more variables, which, though complicating the statistics, did produce more different information. New information was found partly due to the fact that the questionnaires were given both before and after the consultations and thus gave insights into how the participants felt about the usefulness of the consultation. It was also possible to compare the Finnish results with other studies.

6.6. Public Health Implementation

Travel health consultations are needed in order to give opportunity to provide professional health advice to travellers and the chance to clarify and reassure the clients of any uncertainties and worries. Above all it is to supply possible life-saving vaccines and prophylaxis. Furthermore national public health resources could be allocated also on media campaigns especially through internet for safe travelling, and giving knowledge aimed at changing people's attitudes and practices.

6.7. Further Research proposals

With enough resources, this data could be further analysed or the questionnaire with small revision used for further research. This would provide more generalizability. Post-travel questionnaire could give more information on the profile 'who got sick'.

7. CONCLUSIONS AND RECOMMENDATIONS

It is most likely that the group most at risk would be the travellers who do not attend the travel related health consultations, and certainly those entering specific endemic countries without appropriate vaccination coverage or malaria prophylaxis are at high risk. This study concentrated on the people who wanted advice on vaccinations with professionals with specialized knowledge on travel related health issues. The results in my study should not be interpreted as being the risk profile applicable to the whole of the Finnish population, but as a reflection of the travellers who do go for travel health consultation at the professional level. In addition, the study also gives the profile of people seeking this advice, as the result indicates that over 90% go to the consultation to get vaccines and to receive malaria prophylaxis.

It would appear that the marketing forces of commercial pharmaceutical companies, for example, GSK advertise vaccines and medicines through popular internet pages and have a strong influence on many respondents' view of health advice for preparations for travelling. The advertisements on their site are almost exclusively about vaccines and medicines. On the other hand, another popular site, THL's homepage, gives information about all health sectors, including basic hygiene and health information based on updated WHO recommendations. This study has revealed that a large number of respondents had visited the GSK site for information, indicating the popularity of Pharmaceutical marketing, and possibly their power on influence. Therefore public private partnership is advisable in this field of area in order to make better travel health recommendations for customers by using commercial funding and channels.

Professional travel health advice and vaccinations are given in many health centres in Finland. For example, tetanus is regularly updated at a doctor's appointment when other health problems occur. Especially at schools this basic vaccination program is implemented which means that nearly all under 30 year olds are protected against tetanus.

This certainly has to be taken into account in the Halmela and Voutilainen study result where the group of non visitors is as high as 47% which clearly changes the risk profile of the under 30s. It seems that there is need for more research on the attitudes, knowledge and practices of the under 40s group.

The results show that very detailed risk profiling needs a larger sample size to bring out a specific group in the different risk behaviours. This would indicate that the results here give answers and indicates which age or gender group needs to be targeted when giving short consultations at a clinic. The under 40s travellers, for example, need to be addressed on increased risk on accidents, theft, eating uncooked food, sleeping without mosquito protection, having unprotected sex particularly if they drink large quantities of alcohol while abroad. Surprisingly, a specific group on washing hands and drinking bottled water did not exist. It seemed that this basic hygiene information was evident to almost 90% on all chosen groups.

Special consideration has to be given to risky hobbies, for example to inexperienced scuba divers so that they should be informed about not flying for 48 hours after deep water diving. It became clear with the questionnaire that the use of the internet for information about travel related health information was the main channel through which especially younger people found answers to their queries. The marketing of travel health issues therefore could be channelled more often through the internet to introduce a campaign such as the dangers of excessive drinking while abroad since it is the underlying reason for unpredictable behavioural change, such as eating uncooked food, not using condoms with casual partners, and it certainly increases the risk of getting injured.

In addition it was also found that 42% of people over 68 found information from the internet and since they travel frequently and are mostly retired, this is further reason to increase information through this channel.

Chongsuvivatwong et al concludes that among European and US travellers to Phuket and Chiang Mai in Thailand, these should not be considered to be high risk areas for Traveller's

diarrhoea. Certain amount of disregard for counselling is found among Westerners in that they feel there is no need to take extra precautions. I would suggest that this might be a possible reason why too little weight is put on the importance of travel counselling in the overall area of health. This is serious negligence, since according to global estimation it can be as high as 60%.

From this it would appear that there should be an emphasis on being more conscious of the consequences of being careless and a stronger effort to improve simple habits in hygiene in view of the serious debilitating illnesses that can reach beyond merely spoiling a few days of the traveller's holiday or business trip. Diarrhoea is obviously more likely to occur in places where there is less access to running, clean water, but even so, it is preventable in most cases. Furthermore, before the consultation, 90% said they would wash their hands thoroughly so there may be some discrepancy here as to what they say and what they do, possibly even simply a matter of sometimes forgetting to do so. This is both in the above figure and in Finland. There has not been a change in the number of cases, which is somewhat surprising considering that there is more information available from many sources nowadays.

It seems that the pre knowledge and the attitude is the directing force in reality. People come to be vaccinated and not necessarily to receive advice on washing hands and drinking habits, especially since the questionnaires show that a high percentage of the participants are already well informed. However, the charts and graphs show that there is a change in risk perception even in personal hygiene and eating habits.

Something which is rarely asked in research is whether people are well prepared beforehand about how and where to seek help if they actually fall ill or have an accident of some kind. Yet Keystone, see my literature review, states that there is a high rate of accidents amongst foreigners and this should therefore be a topic for further discussion and a means of finding ways for this information to reach those intending to go abroad.

Since the amount of travellers is increasing and individual counselling is needed for the travellers' safety and health, it is suggested here that courses should be increased and that the name Tampere Health Centre name should be actually changed from Vaccination Center to Travellers' Centre for Information and Vaccinations (matkailijoiden terveysterveysneuvonta ja rokotukset). An effort should be made to increase accurate and correct information through the internet since my study shows that the majority of people, both young and old, consult the sites for travel related health information. As I mentioned earlier, I would also recommend that travel related health education should be available in schools.

Even though the results of this research show a statistically significant small improvement from consultation, it nevertheless is a change for the better and proves that it is beneficial and therefore worth making more awareness in the direction suggested here for simple changes in behaviour to provide safer travel. These changes can be improved by disseminating information through multiple channels.

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APPENDIX. Translation of the Questionnaire

TERVEYDEN JA
HYVINVOINNIN LAITOS

Date _____

Code _____

To the Participant. To date, research into the risks to Finnish travellers has not been comprehensively covered and it would, therefore, be appreciated if you would participate in this study intended to trace the travellers' understanding and awareness of the state of their own health before going abroad. The questionnaire should be filled out both before and after the consultation.

After completing the form, if you wish to participate further in this study after your trip, please give your contact information at the end of the form.

The first part of the form takes about 10 minutes to fill in. This study is a part of a Master thesis in Health Sciences conducted at the University of Tampere and a research for the National Public Health Institute. The results will be published in appropriate journals.

Thank you in advance for your participation.

Mika Hyrynen
Tel. 040 745 6585

1. Why did you come to the reception? You can choose one or more options.

someone advised me, who? _____

In order to receive,

vaccination/vaccinations

prescriptions

medicine for malaria prevention

more information on travelling related health risks

other, what? _____

2. Will you be traveling to an area where there is at present malaria?

No

Yes

I Don't know

3. During this trip you will:

	Yes	No	I don't know
Eat raw food e.g. meat, fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Protect your skin with sun screen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drink only bottled water/soft drinks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wash your hands carefully	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stay out late e.g. visit a night club	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use condoms if you have sex with someone other than your own regular partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drink a lot of alcohol at one time i.e. 10-12 units (12 units=½litre of liquor or 1.5 litres of mild wine or 14 bottles of 4.5% beer)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. b) Answer only if you are travelling to a malaria endemic zone

During this trip you will:

	Yes	No	I don't know
Use mosquito repellent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use a mosquito net while sleeping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Estimate the risk of sickness or accident during this trip, if you:

	no risk	small	average	great	cannot say
Eat uncooked food e.g. meat, fish, salad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not protecting your skin with sun screen lotion or clothing when in the sun	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drink unbottled/ tap water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do not wash you hands/ bad hygiene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stay out late	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do not use condoms if you have sex with someone other than your own regular partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drink a lot of alcohol at one time (i.e. 10-12 units)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(12 units= $\frac{1}{2}$ litre of liquor or 1.5 litres of mild wine or 14 bottles of 4.5% beer)

4. b) Answer only if you are travelling to a malaria endemic zone

Estimate the risk of sickness or accident during this trip, if:

	none	small	average	great	can't say
You do not use mosquito repellent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
You do not use a net when sleeping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Estimate what are the following possible health risks during this trip?

	None	small	average	serious	don't know
Intestinal bacteria i.e. tourist diarrhea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sun burn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hepatitis (liver infection)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dengue fever	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Malaria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sexually transmitted disease	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Have you been vaccinated against the following diseases

	Yes	no	can't say
Tetanus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Polio	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MPR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hepatitis A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hepatitis B	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Japanese encephalitis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yellow Fever	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Typhoid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tic bourne encephalitis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other? _____			

Please continue up to question 26 before the consultation or answer to the end after the consultation

7. To which country/countries, when, how long and how will you travel?

Country/countries _____

Towns _____

Date of departure: _____

How long will the trip last days

8. With whom will you travel? You may choose one or more options.

Alone

With a friend

With a partner/spouse

With family. How many children _____

With another group _____

9. What is the purpose of the trip? You may choose one or more options.

Holiday/free time

Work

Visit friends or relatives

Muutto ulkomaille

Other, what? _____

10. How will you spend your free time? (e.g. mountain climbing, scuba diving...)

How? _____

Nothing

Don't know yet

11. Where do you intend to travel and stay most of the time? You may choose one or several options..

- Town
 Countryside
 Beach location
 High altitude area (e.g. mountains)

Elsewhere. Where? _____

12. Where do you intend to stay. Evaluate the standard of accommodation. Choose one or more.

	high	average	basic	don't know
Hotel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hostel/ trekking hut	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
With fiends and/or relatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At camping place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Elsewhere. Where?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Don't know yet				

13. How do you intend to get around/travel at destination? Choose one or more options

- Bus
 car
 Motorbike/scooter
 Bicycle
 Plane

Any other means? _____

14. From where have you obtained information for this trip concerning health risks??

Choose one or more options?

- From nowhere
 The internet, where from? _____
 Journal/daily newspapers, from where? _____
 Chemists
 Health centre
 Occupational health
 Travel clinic

From somewhere else, where? _____

15. Have you received professional travel advice within the last five years before the trip?

- No
 Once
 Several times, how many? ____

From whom (profession)? _____

16. What is the year of your birth? 19__

17. What is your gender?

- Male
 Female

18. What is your profession? _____

What is your education? Choose one or more

- Secondary School
 Student matriculation examination
 Vocational training
 Applied sciences degree
 Lower university degree
 Higher university degree
 Any other? _____

20. Do you suffer from a chronic disease?

- No
 Yes, what? _____

21. Has anything of the following happened to you during a trip abroad? Choose one or more options

- Falling ill, what? _____
 Something stolen
 Injured, what? _____
 Traffic accident

22. If you become ill do you know how and from where to find help? Choose only one

- No
 No, but I will find out before the trip
 No, but I will find out when I reach my destination
 Yes

23. What of the following will you take on the trip?

	Yes	No	Can't say
Disinfectant and plasters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Disinfectant for hands/swipes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condoms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vaccination card	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medication you might need, what?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Anything else concerning health? _____

24. Estimate how many times have you been abroad in the last five years?
 _____ number of times

25. Do you have health insurance to cover this trip?

- Yes
 No
 Not yet, but I intend to for this trip
 Don't know

26. Have you notified the Foreign Ministry or the Finnish Consulate about this trip?

- Yes
 No
 No, but intend to do so
 Don't know

27. Are you aware of the present safety situation where you are going? (e.g. crime political unrest)

- No
 Yes, Where did you get the information from? _____

Answer the following question only after the consultation (n. 2 min.)

28. Who gave you consultation?

- Nurse
 Doctor
 Don't know

29. What did you receive at the consultation? Choose one or more options.

- Prescription, what? _____
 Malarial prophylactic, what? _____
 More information about health risks during the trip.
 Other, what? _____

30. Will you be travelling to an area where this is malaria at present?

- No
 Yes
 Don't know

31. What diseases were you vaccinated against

	Yes	No	Can't say
Tetanus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Polio	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MPR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hepatitis A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hepatitis B	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Japanese encephalitis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yellow fever	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Typhoid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tick-bourne encephalitis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, what _____			

32. What influenced you this time to **take** medicine/vaccinations?

	Yes	No	Can't say
The price of medicine/vaccination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Someone else paid for the vaccination/medicines (i.e employ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Effectiveness of medicines/vaccinations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seriousness of the prevented disease	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advertizing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mild side effects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice of doctor or nurse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, what _____			

33. What reasons this time influenced your decision not to take medicines or vaccinations?

	Yes	No	Can't say
Price of medicine and/or vaccines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Effectiveness of medicine or vaccinations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seriousness of prevention	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mainokset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Haittavaikutukset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice of doctor or nurse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, what? _____			

34. Would you take more vaccines/medicines if Kela covered part of the cost?

No

Yes, what medicine/vaccine? _____

Don't know

35. Estimate again that during this trip:

	Yes	No	I don't know
Eat raw food e.g. meat, fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Protect your skin with sun screen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drink only bottled water/soft drinks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wash your hands carefully	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stay out late e.g. visit a night club	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use condoms if you have sex with someone other than your own regular partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drink a lot of alcohol at one time i.e. 10-12 units	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(12 units= $\frac{1}{2}$ litre of liquor or 1.5 litres of mild wine or 14 bottles of 4.5% beer)

35. b) Answer only if you are travelling to a malaria endemic zone

During this trip you will:

	Yes	No	I don't know
Use mosquito repellent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use a mosquito net while sleeping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

36. Estimate the risk of sickness or accident during this trip, if you:

	no risk	small	average	great	cannot say
Eat uncooked food e.g. meat, fish, salad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not protecting your skin with sun screen lotion or clothing when in the sun	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drink unbottled/ tap water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do not wash you hands/ bad hygiene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stay out late	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do not use condoms if you have sex with someone other than your own regular partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drink a lot of alcohol at one time (i.e. 10-12 units)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(12 units= $\frac{1}{2}$ litre of liquor or 1.5 litres of mild wine or 14 bottles of 4.5% beer)

36. b) Answer only if you are travelling to a malaria endemic zone

Estimate the risk of sickness or accident during this trip, if:

	none	small	average	great	can't say
You do not use mosquito repellent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
You do not use a net when sleeping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

37. Estimate what are the following possible health risks during this trip?

	None	small	average	serious	don't know
Intestinal bacteria i.e. tourist diarrhoea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sun burn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hepatitis (liver infection)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dengue fever	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Malaria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sexually transmitted disease	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

38. Did the counselling change your ideas about health related risks?

- A great deal
- To some extent
- A little
- No
- Can't say

39. Will the advice lessen the chance of risks during this trip?

- A great deal
- To some extent
- A little
- No
- Can't say

40. What information was this time particularly necessary?

41. Please leave your personal details if you would like to take part in this study after our trip.

Tel: _____

Email: _____

Thank you for giving further information for this study

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