

Knowledge, attitude, and practice of travel medicine among primary health care physicians in the Cluster-1, Riyadh City, Saudi Arabia: A cross-sectional study

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ABSTRACT

Introduction: Travel medicine deals with prevention and management of health problems of travelers to avoid or reduce the risk of avoidable illnesses. Primary healthcare physicians are the key individuals to provide the same. The objective of current study was to explore the level of knowledge, attitude, and current practical application of travel medicine among primary health care physicians serving in the Riyadh Health Cluster, Saudi Arabia. **Methodology:** A descriptive cross-sectional study among 210 primary healthcare physicians serving in Riyadh Health Cluster was conducted using a paper-based self-administered questionnaire collecting information on socio-demographic characteristics and knowledge, attitude as well as practice of travel medicine. **Results:** The majority of study participants were females (117, 55.7%) and 63% ($n = 133$) were non-Saudi physicians. More than 30% that is 66 participants had clinical experience of less than 5 years and around 67% (i.e., 141) participants were serving at the designation of registrar/senior registrar. One hundred sixty-seven participants (79.5%) had ever provided health advice to the travelers. Majority of the study participants had gained information on the travel medicine through Ministry of Health guidelines (66%). Nearly 11.4% participants were not sure about the cause of occurrence of typhoid infection. As reported by 30.5%, travelers never really sought advice on the travel insurance. Nearly 79.5% participants reported to have provided post-travel consultation for diarrhea, followed by respiratory infection (45.2%), fever (42%), and skin problems (21%). **Conclusion:** The knowledge, attitude, and practice of travel medicine among primary healthcare physicians was found to be sub-optimal in Riyadh.

Keywords: Attitude, practice, primary healthcare knowledge, Saudi Arabia, travel medicine

Introduction

Travel Medicine is considered as a branch of medicine wherein, it deals with prevention and management of health problems of travelers all around the world.^[1] Major concern for travel medicine is to avoid or reduce the risk of travelers to avoidable illnesses by prevention, and specific protection strategies like

vaccination of travelers as pre travel counseling design. There is a list of factors which require travelers to visit the travel clinic such as malaria prophylaxis, yellow fever vaccination, travelers' diarrhea, or other enteric infections and during pandemic disease such as Novel Coronavirus infection (COVID 19) these days.^[1]

The primary health care physicians are the first contact in a health care system. They are responsible to provide preventive care. This includes guiding travelers to visit a travel medicine clinic for obtaining appropriate medical advice before and after travel. Integrating travel medicine within the parts of the primary

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health care is an essential component of the preventive services and considered as one of the main training topics offered to physicians with updated evidence according to the worldwide preventive health recommendations.^[2]

In Saudi Arabia, the direction of the Ministry of Health in the KSA is to activate travel medicine clinics, which is valid specifically during Hajj and Omrah and have now begun at King Khalid International Airport and some consulting health centers. However, due to the absence of a medical clinic in travel medicine at least in the Kingdom of Saudi Arabia, the travelers have often found it difficult to search for qualified professionals to obtain advice and answer his questions about pre- and post-travel problems.^[2] After personal visits to many consulting health care centers and travel clinic at King Khalid International Airport, the authors had an eyeballing that even if there is a travel medicine clinic, it may not have been fully implemented to serve the travelers.

There are a few studies to assess the knowledge, attitude, and practice of travel medicine among Primary Health Care Physicians in Kingdom of Saudi Arabia. The available evidence showed a very low level of knowledge and practice. Also, physicians are not adequately prepared to provide an acceptable level of travel medicine.^[2,3]

The objective of current study is to explore the level of knowledge, attitude, and current practical application of travel medicine among primary health care physicians serving in the Riyadh Health Cluster (Cluster 1), Saudi Arabia.

Methodology

During the year 2020, a cross-sectional study was conducted among primary health care physicians working in Cluster 1, Riyadh City (Kingdom of Saudi Arabia). A total of 210 participants were recruited by calculating sample size at 95% CI and 5% margin of error using Raosoft sample size calculator application available online.^[4] As the participation in the study was on voluntary basis and involved administration of a validated self-administered questionnaire hence, it was estimated that non-response rate can go up to 50%. Physicians who were working in other specialty or cluster were not included in the study.

The paper-based mode of data collection was adopted. The items in the tool included information on socio-demographic characteristics, knowledge about the travel medicine, attitude towards the same and practical application of the concepts of travel medicine.

The collected data were entered and analyzed using SPSS version 25 software. In the analysis, the results of numerical variables like age were described as mean and standard deviation. Categorical variables were represented as numbers and their percentages for descriptive analysis.

Ethical considerations

Ethical approval was obtained from KSMC researches, Ethics Committee, and the Program Director of Family Medicine to conduct the study. The participation in the survey was purely voluntary. The participants were enrolled in the survey after obtaining their informed consent. The information sheet was provided to each participant to have knowledge about the study objectives. No identification information including name and address of the participant was asked to maintain anonymity and confidentiality. The collected information was kept confidential and the filled-up questionnaires were saved in a special locker. The access to those was only available with the researcher. All the questionnaires were discarded after completion of the study.

Results

Sociodemographic characteristics

Out of 210 primary healthcare physicians enrolled in the study, majority were females (117, 55.7%) and 63% ($n = 133$) were non-Saudi physicians. There were 42 participants (20.0%) aged 50 years or more. A similar number of study participants belonged to younger age groups (25.2-28.1%). More than 30% that is 66 participants had clinical experience of less than 5 years. More than 67% (i.e., 141) participants were serving at the designation of registrar/senior registrar. [Table 1]

Knowledge about travel medicine

Knowledge about various diseases

The assessment of knowledge about various aspects of travel medicine was based on the questions pertaining to diseases like yellow fever, malaria, rabies, typhoid, meningitis, and diarrhea.

Table 1: Sociodemographic characteristics of the study participants (primary health care physicians) in the Riyadh City

Characteristic	Number (n=210)	Percent
Gender		
Female	117	55.7
Male	93	44.3
Nationality		
Saudi	77	36.7
Non Saudi	133	63.3
Age (in years)		
<30	53	25.2
30-39	56	26.7
40-49	59	28.1
≥50	42	20.0
Clinical experience (in years)		
<5 years	66	31.4
5 - <10 years	40	19.0
10-15 years	48	22.9
≥15 years	56	26.7
Designation		
Registrar/senior registrar	141	67.1
Resident	51	24.3
Consultant	18	8.6

Nearly 90.5% study participants agreed that individuals should go for travel medicine benefits 4-6 weeks prior to the travel date. When asked about the causes of typhoid infection, nearly 11.4% participants were not sure if the infection occurs because of fecal contamination of food and water. Around 47 to 50% participants were not aware that yellow fever vaccine should not be administered to pregnant women and baby aged less than nine months. Less than 50% participants were aware that Sub-Saharan Africa is also known as meningitis belt. When asked about if the traveler needs to be advised about antibiotic prophylaxis, nearly 33% responded yes, whereas 55% refused the advice. [Figure 1].

Attitude of primary healthcare physicians

Sources of information about travel medicine

Majority of the study participants had gained information on the travel medicine through Ministry of Health guidelines (66%) followed by websites (42%). [Figure 2]. Forty-eight percent participants had only one source of information about travel medicine. [Figure 3].

Practice of primary healthcare physicians towards travel medicine

About 70% participants (n = 125) provided more than 20 consultations in a day. A total of 72 (34.3%) study participants provided pre-travel consultations within a month prior to the survey. However, during only 111 (52.9%) study participants had provided post-travel consultations within past one year

before survey. Of all the study participants, 167 (79.5%) had ever provided health advice to the travelers. Majority of the participants had less than 10 travelers per week for related health advice; nearly 5-10 minutes were spent on more than 30% travelers (72, 34.4%) seeking health advice from the study participants. [Table 2]

Application of travel medicine through primary health care

Fifty-five percent study participants claimed that the travelers came to them to seek advice on the travel vaccine safety and First Aid. As reported by 30.5%, travelers never really sought advice on the travel insurance and as many as 23.8% reported that they were never asked about barotrauma. Seeking malaria prophylaxis by travelers was reported by 38% participants. The 16.7% participants reported that no traveler came to seek advice on the issue of jet lag. [Figure 4]

As far as the post-travel consultation is concerned, nearly 79.5% participants reported to have provided consultation for diarrhea, followed by respiratory infection (45.2%), fever (42%), and skin problems (21%). The symptoms not mentioned in the questionnaire were marked as “others” (8.1%) by the study participants [Figure 5]. Nearly 37% post-travel sickness related consultations were sought for two symptoms. [Figure 6].

Discussion

In the present cross-sectional study, the objective was to measure the knowledge, attitude, and practice of travel medicine concepts by the preventive care experts that is the primary healthcare physicians, as per the health system structure in Saudi Arabia. As travel medicine is considered more of a pre-and post-travel preventive care, the selected participants are the core people to whom a traveler must contact to prepare themselves for health issues that they can face while traveling to a certain place.^[5]

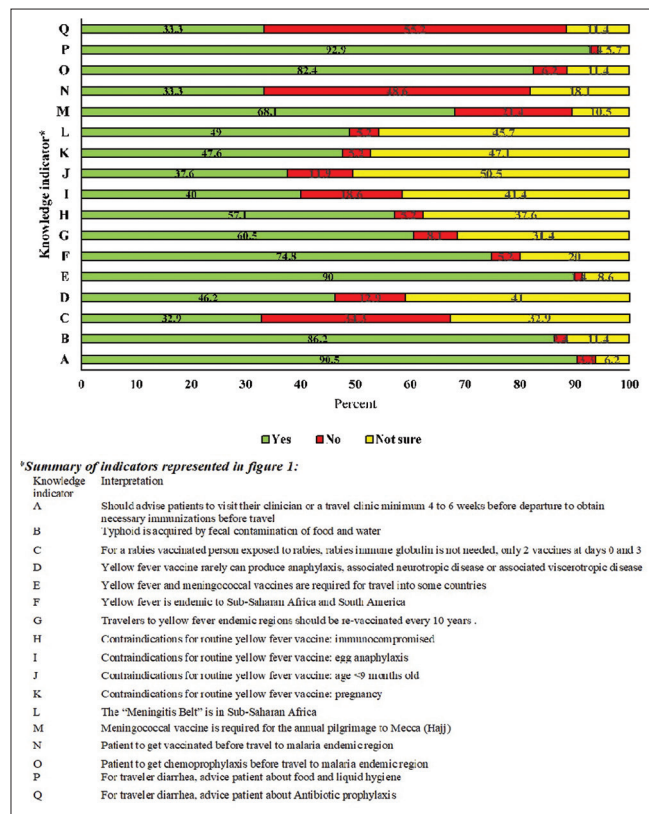


Figure 1: Assessment of knowledge of primary health care physicians towards travel medicine

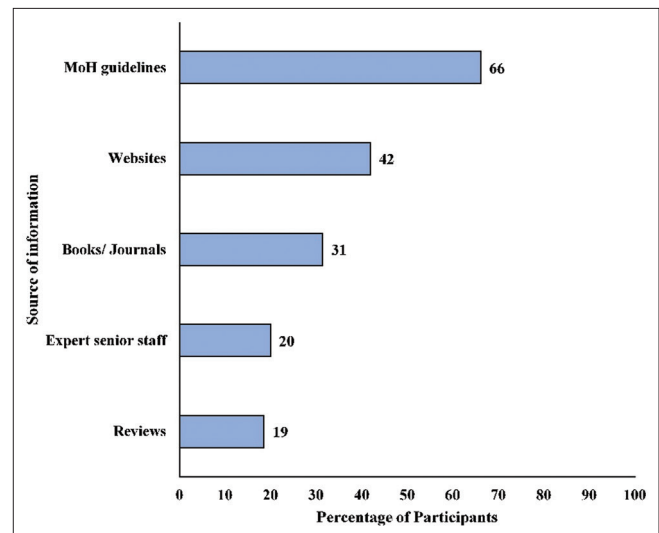


Figure 2: Sources of information among study participants about travel medicine

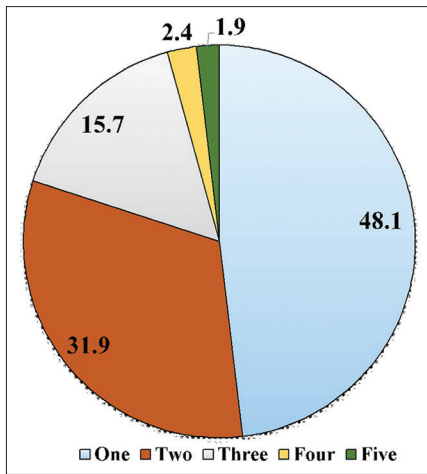


Figure 3: Distribution of number of sources about travel medicine reported by study participants

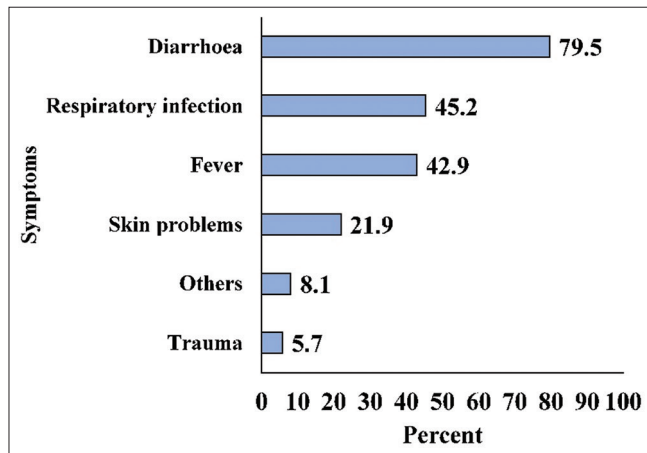


Figure 5: Post-travel presentations of travel related sickness reported to the primary health care physicians at their health care centers

The study found that majority of the primary healthcare physicians working in the Riyadh Health Cluster had 10-15 years of clinical experience, with 55.7% of the physicians being females. Thirty-four percent physicians had spent around 5-10 minutes in providing a travel-related consultation. This is equivalent to average time spent by a doctor with a patient to provide a general consultation.^[6]

As part of assessment of knowledge regarding various travel medicine issues, the participating physicians were asked to respond to certain disease specific questions as specified in Figure 4. The major concern appears to be having no surety about various contraindications for yellow fever vaccine among physicians. Also, a similar number of participants was not aware that the Sub-Saharan Africa is regarded as meningitis belt. This reflects low level of knowledge among study participants regarding diseases encoded for travel medicine. The reason for less knowledge could be because of non-incorporation of travel medicine as separate and essential entity in medical curricula as well as non-exposure of physicians to the medical conferences about the same.^[7-9]

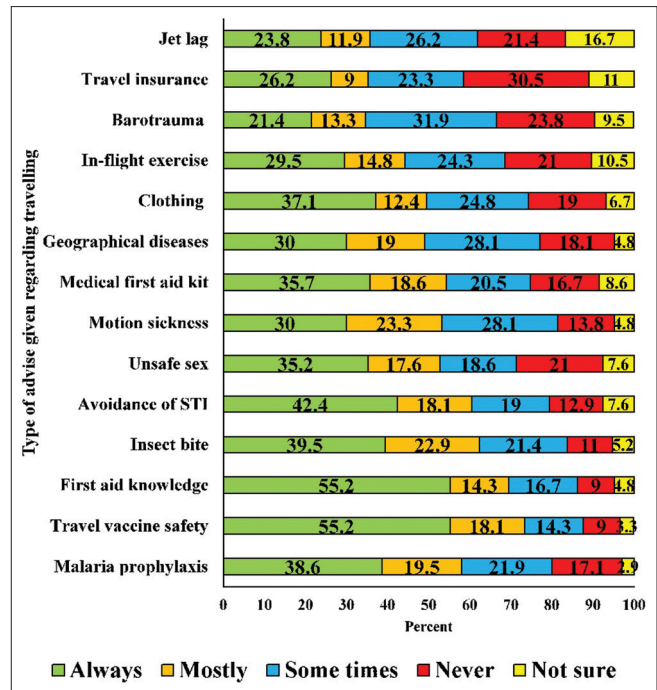


Figure 4: Practical application of the travel medicine by primary health care physicians

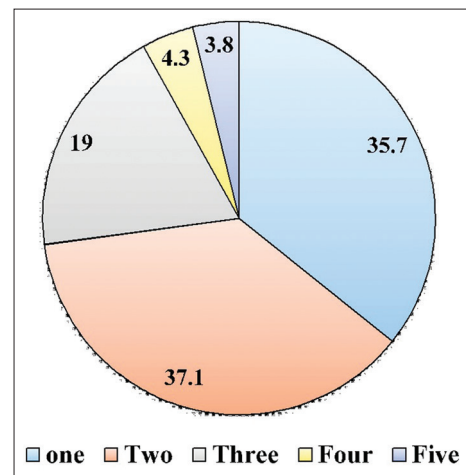


Figure 6: Distribution of number of post-travel sickness symptoms reported among study participants

More or less, as many as 66% participant physicians had gathered their knowledge about travel medicine through Saudi Ministry of Health guidelines [Figure 2], indicating weak attitude and strong dependence on the government actions in orienting physicians towards the same. This in turn can be related to the extent to which a person tends to explore about anything on their own. Since the cues to get to think about travel medicine were not much strong during the training period of physicians, it can be said that while actually serving the community, their focus also remained at the prevalent issues.

This is important to state that around 48% participant physicians had only one source of information about the aspects of

Table 2: Practice of study participants (primary health care physicians) towards travel medicine

Characteristic	Number (n=210)	Percent
Number of patients seen per day (in terms of consultancy)		
<10 consultations	38	18.1
Up to 20 consultations	47	22.4
21 to 30 consultations	53	25.2
31 to 40 consultations	44	21.0
41 to 50 consultations	28	13.3
Pre-travel consultation given in past month	72	34.3
Post-travel consultation given during past 1 year	111	52.9
Ever provided Health advice to travelers	167	79.5
Number of travelers seen per week		
<10	126	60.0
20-29	2	1.0
No traveler seen	82	39.0
Duration of health advice given to travelers		
1-5 min	41	19.5
5-10 min	72	34.3
10-15 min	32	15.2
>15 min	5	2.4
Not seen	60	28.6
Whether attended travel medicine updates		
Yes	59	28.1
No	151	71.9

travel medicine [Figure 3], which can be linked with the fact of non-building of attitude towards learning the new concepts because foundation was not laid down in the learning phase. It sometimes is about “not realizing” that there is always more to learn in order to be more efficient at what we do.^[3]

The present study revealed that around 34.7% pre-travel consultations were given by the primary health care physicians in the Riyadh Health Cluster in past one month [Table 2]. One reason could be preference for a particular gender for interaction by the patients. A study done in Riyadh found that at certain instances, patients preferred male doctor for interaction as they perceived male doctors to be more knowledgeable.^[7] Since in travel medicine, the consultation is usually of preventive nature gender preference based on perception about knowledgeability of physicians may have acted as one barrier to avail consultation. As much as this depends upon the choice of the traveler to seek advice from a primary health care physician, the low percentage may also be because of the global emergence of COVID19 since the beginning of the year 2020,^[8] which also happens to be the period to conduct the present study.

Not only the patient related factors, but preference of physicians as well as their perception about the importance of travel medicine in reducing the chances of infection transmission also seems to be in play. Only 28% study participants happened to have attended any travel medicine updates related event [Table 2]. A similar Oman-based study published in 2019 reported even lesser proportion (18%) to have attended any such events.^[3] One of the

major causes can be that the concept is not taken up exclusively as the part of regular medical curriculum. When the primary care physicians are in job, the setback to their chances to attend any continuing medical education events may be because of the kind of setting they are working in. A physician working in a health care setting with research or academic orientation tends to get more oriented towards attending any such event as compared to the one working in a relatively simple tier of healthcare system.

The section on practice of travel medicine by primary healthcare physicians indirectly highlights about the issues considered worth discussing by the travelers as well. As evident from the results, majority of the participants had reported that they gave advice on first aid as well as travel vaccine safety [Figure 4]. It may be because the international traveling rules have certain guidelines which involve essential vaccination prior to visiting a specific geographic zone with certain prevalent infections like yellow fever.^[10] Perhaps the practice of advising on other travel related health concerns will raise if the primary healthcare physicians start investing in promoting about the travel medicine consultation facility available at their workplace. This again can be boosted up by their active and periodic exposure to travel medicine conferences or workshops. A study published in US showed that the primary health care professionals have the greatest level of knowledge about travel medicine, but the problem is the volume of travelers as few of them seek advice before traveling.^[11]

As evident from the kinds of post travel consultations given by participant physicians illustrated in Figure 5 (diarrhea, respiratory infections, fever, skin problems, etc.), making them invest in promoting pre-travel consultation among community may have the potential to reduce the occurrence of post-travel health issues and unwanted complications. This can further boost up the role of preventive medicine in reducing the toll on higher levels of healthcare service delivery.^[12,13]

The major role of Primary Care Physicians involves dissemination of preventive healthcare services like immunization, patient education, their risk identification, and its management. The travel medicine experts or clinics also deliver the same services in a more sophisticated setting, thereby, adding up the cost of these basic services.^[14]

Primary care physicians being the first contact point for the community in both rural and urban settings, can deliver these basic services in a more effective way as they are more familiar with the local people and their health contexts. Hence, the important services of travel medicine can be routed through primary healthcare physicians without adding up any extra cost of infrastructure or economic burden on the service user.

For this, they need to be trained and updated regularly on International travel norms, health care risks, and its mitigation.

This can also ensure coverage of areas where establishing travel medicine clinics is not feasible.

The current study has its strength in highlighting the issue itself. The discussion with physicians during data collection must have triggered the wish to learn more about the same. The study area was a whole cluster and inclusion of all the primary healthcare physicians in the study to present viewpoints of a whole community.

The study did not incorporate asking about the barriers the physicians face in acquiring knowledge and practicing travel medicine because as an initial step, it was considered important to have an understanding about their orientation towards the concept.

Recommendations

The primary healthcare physicians should be encouraged to participate in events related to travel medicine update. Medical curricula should incorporate the concept as a separate entity to orient the budding physicians, especially during these times when the epidemics and pandemics (like SARS, Ebola, COVID-19) have become prevalent. The government efforts should incline towards raising community awareness to seek pre- and post-travel consultations at primary healthcare level via established primary healthcare centers and travel medicine clinics in their vicinity. This can be promoted by mandating the public to visit primary healthcare centers and thereby, asking them to produce a certificate by primary physician that they have been counselled on travel medicine.

To conclude, knowledge, attitude, and practice of travel medicine among primary healthcare physicians was found to be sub-optimal in Riyadh. This needs to be strengthened by regular trainings among physicians, and community mobilization for the services available.

Key Findings of this Manuscript

- Only 72 (34.3%) physicians had provided pre-travel consultations within a month prior to the survey. And only 111 (52.9%) physicians had provided post-travel consultations within past one year before survey. Totally, 60% physicians see less than 10 travelers each week.
- MoH guidelines was the source of information for 66% of the physicians. About 71.9% physicians never attended travel medicine updates.
- A total of 34.3% physicians gave health advice for duration of 5-10 minutes, more than 15 minutes spent by only 2.8% of the physicians.
- Also, 55.2% physicians never advised travelers on antibiotic prophylaxis for traveler's diarrhea. Also, 48% physicians didn't know about malaria prophylaxis for traveling to malaria endemic regions.
- Totally, 30% physicians never gave advice on travel insurance and 23.8% physicians never talked about barotrauma or in flight exercise.
- First aid and travel vaccine safety knowledge were the most commonly given information.
- A total of 79.5% physicians reported to have treated patients with traveler diarrhea followed by respiratory infections (45%).

Message from this manuscript

- The percentage of primary care physicians delivering pre- and post-travel services was found to be very low.
- Their knowledge levels were also found to be low for delivering quality travel medicine services.
- However, there is potential to utilize the Primary Care Physicians for delivering travel medicine services at grass root level of healthcare delivery systems. This will require their capacity building through continuing medical education programs about practice of travel medicine.

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Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

References

1. Public Health Agency of Canada. Archived: Canada Communicable Disease Report [Internet]. Canada. 2009 [cited 2020 May 09]. Available from: <https://www.canada.ca/en/public-health/services/reports-publications/canada-communicable-disease-report-ccdr/monthly-issue/2009-35/guidelines-practice-travel-medicine.html>.
2. Ali AM. Knowledge and self-reported practice of travel medicine among primary health care physicians, Jeddah, Saudi Arabia [Internet]. Family Medicine Residents Researches. 2014 [cited 2020 May 09]. Available from: <https://fmresidentsresearches.wordpress.com/2016/05/08/knowledge-and-self-reported-practice-of-travel-medicine-among-primary-health-care-physicians-jeddah-saudi-arabia/>.
3. Kurup P, Al Abri S, Al Ajmi F, Khamis H, Singh J. Knowledge, attitude and practice of travel medicine among primary care physicians in Oman: The need for intervention. *East Mediterr Health J* 2019;25:40-6.
4. Sample Size Calculator by Raosoft, Inc. [Internet]. Raosoft.com. 2004. [cited 2020 May 09]. Available from: <http://www.raosoft.com/samplesize.html>.
5. Aw B, Boraston S, Botten D, Cherniwchan D, Fazal H, Kelton T, *et al.* Travel medicine: What's involved? When to refer? *Can Fam Physician* 2014;60:1091-103.
6. Dugdale D, Epstein R, Pantilat S. Time and the patient-physician relationship. *J Gen Intern Med* 1999;14:S34-40.

7. Mandil A, Alhayyan R, Alshalawi A, Alemran A, Alayed M. Preference of physicians' gender among male and female primary health care clinic attendees in a university hospital in Saudi Arabia. *Saudi Medical J* 2015;36:1011.
8. U. S. Department of Health and Human Agencies, National Center for Immunization and Respiratory Diseases (NCIRD), Division of Viral Diseases. Symptoms of Novel Coronavirus (2019-nCoV). Center for Disease Control, Atlanta, United States of America [Internet]. 2020 [cited 2020 May 09]. Available from: <https://web.archive.org/web/20200130202038/https://www.cdc.gov/coronavirus/2019-ncov/about/symptoms.html>.
9. Fiume O. When do you stop learning? Lean Enterprise Institute. [Internet] 2017. [cited 2020 May 09]. Available from: <https://www.lean.org/LeanPost/Posting.cfm?LeanPostId=732>.
10. U.S. Department of Health and Human Services. Vaccines for Travelers. Center for Disease Control, Atlanta, United States of America [Internet]. [cited 2020 May 09]. Available from: https://www.vaccines.gov/who_and_when/travel.
11. Kogelman L, Barnett E, Chen L, Quinn E, Yanni E, Wilson M, *et al.* Knowledge, attitudes and practices of US practitioners who provide pre-travel advice. *J Travel Med* 2014;21:104-14.
12. Beaton T. How preventive healthcare services reduce spending for payers. *Health Payer Intelligence* [Internet]. 2017 [cited 2020 May 09]. Available from: <https://healthpayerintelligence.com/news/how-preventive-healthcare-services-reduce-spending-for-payers>.
13. Murthy B, Murthy M, Prabhu P. Maternal mortality in a tertiary care hospital: A 10-year review. *Int J Prev Med* 2013;4:105-9.
14. Dirubbo N. Why travel health belongs in primary care. *Clin Rev* [Internet] 2015;25:10,12. Available from: https://cdn.mdedge.com/files/s3fs-public/issues/articles/GuestEd_0115.pdf.