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A Bibliometric Analysis of the IeJSME: 15 Years of Perseverance (2007-2021)

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Keywords: *Bibliometric analysis, IeJSME, citation, publication, research.*

Launched in 2007 by the International Medical University with Professor Richard Loh Li-Cher as the founding Editor, the International eJournal of Science, Medicine and Education (IeJSME) is a free online open-access journal. The fundamental objective of the journal is to provide a forum for disseminating quality articles of important scientific merit to the international research community.[1]

The journal set out initially to publish two issues annually. However, it began to publish three regular issues per year in 2014. The journal had successfully obtained an International Standard Serial Number (ISSN) in 2011 from the National Library of Malaysia and was subsequently registered on various websites including Directory of Open Access Journals (DOAJ), EBSCO, Malaysian Citation Centre (MyCITE), Index Copernicus International and WHO Western Pacific Region Index Medicus (WPRIM).

The journal has published more than 200 original articles and reviews as well as articles in supplement issues. Currently, the IeJSME publishes original articles, review articles, case reports, commentaries, letters to editors, and conference abstracts.

This paper summarises the patterns of publications such as study designs and citation counts of the published articles in the IeJSME for the past 15 years (2007 to 2021) using the Google Scholar database which is an open-access web-based search engine indexing scholarly literature across a broad range of published formats and disciplines.[2]

Types of Articles Published

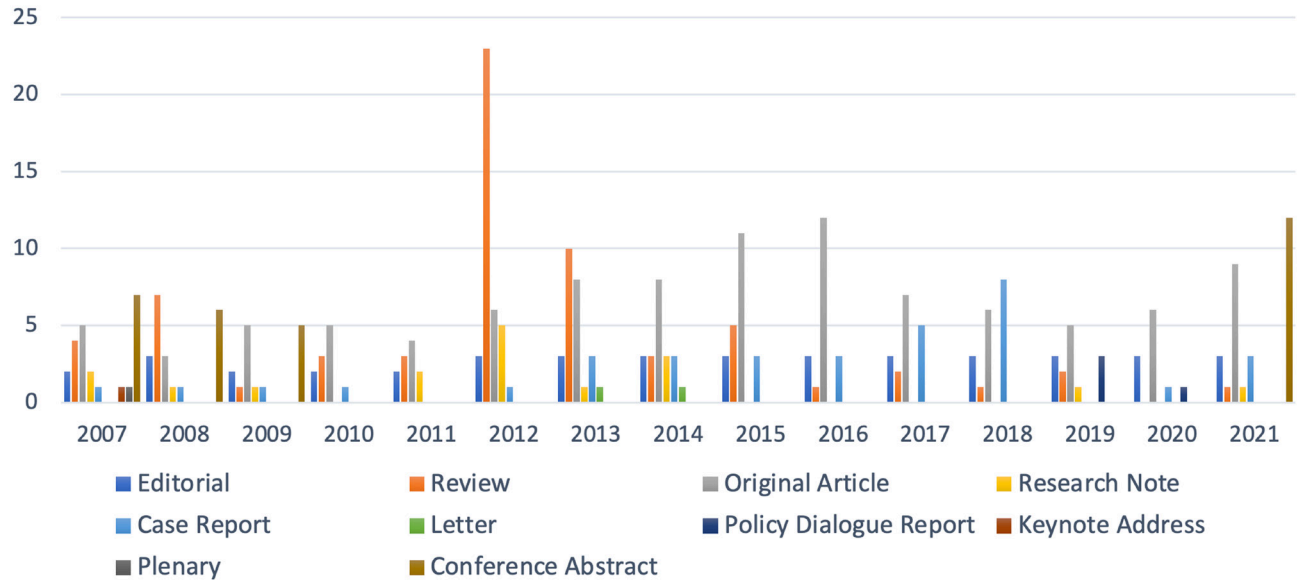

Figure I: Types of Articles Published by the IeJSME, 2007-2021

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The types of articles published by the IeJSME from 2007-2021 is shown in Figure I. Original articles constitute the largest category (66, 22.3%) followed by review articles (41, 13.85%).

Total Articles Published and Authorship Patterns

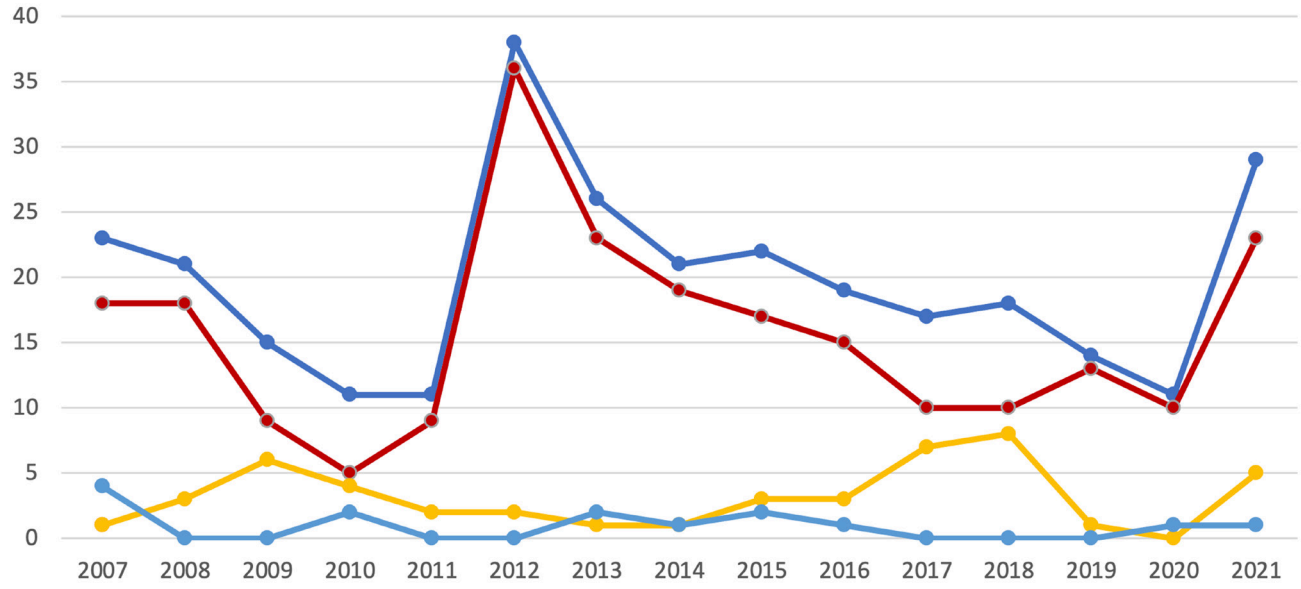

Figure II: Total Articles Published and Authorship Patterns of the IeJSME, 2007-2021

The IeJSME has published 42 issues encompassing a total of 296 articles.

The journal took some time to establish itself and was helped by an IMU anniversary issue in 2012. The number of original articles published increased steadily from 2011 till 2016 but has fluctuated in number since with an encouraging increase in the last two years.

Most of our principal contributors (79%) are affiliated with the International Medical University, but there have been contributors from overseas (4.7%) and other institutions in Malaysia (15.9%) (Figure II).

Among other authors, a total of 73 institutions were represented out of which 25 (34.25%) were from overseas. The top 10 affiliated institutions were Hospital Tuanku Jaafar, Seremban (16 articles), Penang Medical College (11 articles), Universiti Malaya (11 articles), Hospital Melaka (6 articles), Hospital Sultanah Bahiyyah, Kedah (4 articles), Hospital Tengku Ampuan Afzan, Kuantan (4 articles), International Islamic University Malaysia, Kuantan (4 articles), Hospital Kuala Lipis, Pahang (3 articles), Open University (3 articles), and Universiti Sains Malaysia, Kubang Kerian (3 articles).

Study Designs

Only published original articles (n=100) and research notes (n=17) were analysed for their study designs. The majority of the published articles were cross-sectional studies (n=79, 67.5%). Seven articles (5.98%) were retrospective studies and seven articles (5.98%) were uncategorised. Five articles (4.27%) were experimental studies while another 5 (4.27%) articles were laboratory studies. A small minority of three papers (2.56%) were retrospective analysis followed by 2 articles (1.71%) which were item analysis studies, 2 articles (1.71%) being longitudinal studies, and 2 articles (1.71%) being observational studies. The remaining 5 articles were each being bibliometric analysis, content analysis, mixed methods study, randomised controlled trial, and literature review, respectively.

Domains of Study of Published Articles in the IeJSME, 2007-2021

Only editorials, reviews, original articles, research notes, policy dialogue reports, and case reports were analysed for their domains of study (medicine, science, or medical education). Letters, keynote address, plenary, and conference abstracts were excluded. A total of 179 (70.5%) of the published articles fell under the domain of medicine followed by 64 (25.2%) articles under the domain of medical education. Only 11 (4.3%) articles were published under the domain of science.

Subject Areas

After medical education which accounted for 25.2% of the 254 articles, public health was the next largest subject area among the remaining published articles (n=40, 15.7%). This was followed by nursing science (n=17, 6.69%); environmental health (n=15, 5.9%); obstetrics and gynecology (n=12, 4.72%); clinical practice (n=11, 4.33%); cancer (n=10, 3.94%); and nutrition and dietetics (n=8, 3.15%).

In addition, 7 (2.76%) articles were related to clinical research, non-communicable disease, and tropical medicine each, while 6 (2.36%) articles were related to orthopedics, pediatrics, and psychology each. Meanwhile 5 (1.97%) articles were related to drug delivery and 4 (1.58%) articles were related to oral health.

Three (1.18%) articles fell under the subject areas of big data, life sciences, and respiratory disease each. Also, 10 (3.93%) articles were of the subject areas of chemistry, gastrointestinal disease, neuroscience, rehabilitation, and rheumatology with 2 (0.79%) articles in each of subject areas. Lastly, the remaining 10 articles (3.93%) were each from the subject areas of allergy, bioactive molecules, communicable disease, complementary and traditional medicine, endocrinology, immunology, infections, musculoskeletal disease, parasitology, and travel medicine.

Citation Counts

Total citation counts for each article were retrieved from Google Scholar database on 2nd Aug 2022. The 10 articles of the IeJSME with the highest citation counts are summarised in Table I.

Table I: Top 10 Most Cited Articles of IeJSME, 2007-2021

NO	AUTHORS	AFFILIATION	TITLE	Article Category / Type	CITATIONS
1	Wan-Loy Chu	IMU	Biotechnological applications of microalgae	Review Article	179
2	Mitra N K, Nagaraja H S, Ponnudurai G, Judson J P	IMU	The levels of difficulty and discrimination indices in Type A multiple choice questions of pre-clinical Semester 1 multi-disciplinary summative tests	Original Article	159
3	Pei Kuan Lai, Pek Hong Lim	IMU	Concept of professional socialisation in nursing	Research Note	67
4	Patil Sapna S, Hasamnis Ameya A, Pathare Rooma S, Parmar Aarti, Rashid A K, Narayan K A	Asian Institute of Medicine, Science and Technology University, Kedah	Prevalence of exclusive breast feeding and its correlates in an urban slum in western India	Original Article	65
5	Bharti N Karelia, Ajita Pillai, Bhavisha N Vegada	PDU Government Medical College, India	The levels of difficulty and discrimination indices and relationship between them in four-response type multiple choice questions of pharmacology summative tests of Year II MBBS students	Original Article	53
6	Geok-Lin Khor	IMU	Food availability and the rising obesity prevalence in Malaysia	Review Article	52
7	Syer Ree Tee, Xin Yun Teoh, Wan Abdul Rahman Wan Mohd Aiman, Ahmad Aiful, Calvin Siu Yee Har, Zi Fu Tan, Abdul Rashid Khan	Penang Medical College	The prevalence of hypertension and its associated risk factors in two rural communities in Penang, Malaysia	Original Article	50
8	Stephen Arthur Hudson, John Jackson Mc Anaw, Barbara Julienne Johnson	University of Strathclyde, Glasgow	The changing roles of pharmacists in society	Review Article	37
9	Hematram Yadav	IMU	A review of maternal mortality in Malaysia	Review Article	28
10	Jagmohni Kaur Sidhu	IMU	Effect of stress on medical students	Research Note	26

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It is noteworthy that out of the 100 original articles published in the 15 years period, 45 articles were found to have recorded zero citation but the average citation count per year for original articles is 2.9.

The IeJSME serves as a general (medical and health sciences) rather than a specialty medical journal.[3] A wider coverage of research topics is crucial to add to the enrichment of the knowledge reservoir for this journal as well as to ensure the sustainability of the journal by soliciting sufficient manuscripts. Moreover, it provides valuable learning opportunities and serves as a good platform for novice researchers including the undergraduate medical students to publish their hard work with certain research quality.[3] This objective has been met with an average of 15-20 articles published each year within the last 1.5 decades. Although the number of published articles has been fluctuating throughout the years, the IeJSME continues to receive submissions not only from the IMU but also other institutions in Malaysia and abroad.

As the name suggests, IeJSME welcomes articles in the domains of medicine, science, and medical education. The analysis revealed that a big proportion of the published articles fell under the medicine domain. This is justifiable as IeJSME is the journal of the IMU which is a medical university. Nevertheless, IeJSME has been publishing articles covering a wide range of subject areas and has attracted authors with different and vast research interests.

The IeJSME does not only seek quantity of published articles but also quality as well. Besides citation, each published article is easily retrievable from Google Scholar which is a widely accessible online database. Although the analysis in this study revealed that a large proportion of original articles (45%) had not been cited at all, this might likely have been because the official website was intermittently inaccessible during 2019-2021 while undergoing upgrading and maintenance.

As the name of the journal suggests, the IeJSME has been geared towards establishing international relevance and importance as well as receiving international recognition.[3] This objective has also been achieved with the involvement of authors and co-authors from overseas countries, as well as authors affiliated with institutions abroad. The analysis of this paper revealed that the number of non-IMU affiliated authors had been fluctuating throughout the 15 years but the number of overseas authors had been decreasing. This suggests that IeJSME needs to improve its visibility particularly amongst the international readers and gear up its publicity to attract more international authorship. By welcoming international authorship, the IeJSME will serve as a good platform for scholastic interactions as well as open doors for potential international collaborations.

Looking back, the IeJSME has come a long way since its first establishment in a local university. From its first publication of two issues per year, it is now a tri-annual journal. After the 15-year journey, the IeJSME is now relatively well-established as a medical journal with regular publications. Moving forward, the IeJSME is gearing up its efforts towards achieving its aim to be indexed on international websites such as Scopus and the National Library of Medicine or PubMed. Nevertheless, there is still room for more improvement. There may be a need to move the direction of the journal by adopting certain editorial policies.[3] Perhaps it is timely for the editors to

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consider having a fixed theme or topic for every issue to improve the quality and quantity of publications.

The IeJSME has thrived and undergone development within these 15 years. It will continue to strive forward to improve and is grateful for the support from both authors and readers throughout these years. The journal will move forward to fill more important niches in basic sciences, clinical practice, and health professions education and this will be accelerated once it is indexed in an international website.

REFERENCES

1. Lim PKC. IeJSME celebrates its 10th Anniversary. International e-Journal of Science, Medicine and Education. 2017;11(1):1.
2. Teng CL, Lim KG, Khoo EM, Ng CJ, Chong LY, Lee MY, *et al.* A bibliometric study of the publication type and citation count of Medical Journal of Malaysia for the period 1980-2016. IeJSME. 2019;13(1):26-32.
3. Loh L-C. Gathering Momentum. IeJSME. 2007;1(2):54.

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Descriptive analysis of international deportations caused by irresponsible traveller behaviour

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Background: The COVID-19 pandemic focused public attention on the importance of responsible tourism. The purpose of this study was to characterise irresponsible tourist behaviour leading to deportation from the destination country.

Methods: A web-based search of media reports relating to deportations of tourists was conducted.

Results: The most common reasons for deportation were related to indecent exposure or physical damage to sacred monuments and violations of COVID-19-related national public health rules. Other incidents resulted from social media posts and breach of environmental regulations.

Conclusions: The results of this study may inform future research efforts and targeted public awareness campaigns.

Keywords: *responsible travel; deportation; COVID-19; cultural sensitivity; sustainable travel*

Introduction

The COVID-19 pandemic has focused public attention on the importance of responsible tourism, whereby international travellers endeavour to minimise their impact on a destination country's heritage, its communities, biodiversity, and environmental resources. The importance of this subject is underscored by the existence of an active responsible travel interest group within the International Society of Travel Medicine (ISTM). Departures from the principles of responsible tourism demonstrate disrespect towards host countries, threaten fragile ecosystems, and undermine efforts to cultivate harmonious international relationships. There has been minimal coverage of this subject in the travel and international health literature. Lim *et al.* (2018) drew attention to the risks of harm associated with environmental damage, voluntourism, and sex tourism and proposed a checklist of responsible tourist behaviours.[1] The purpose of this study was to characterise high-profile examples of irresponsible tourist behaviour, which led to deportation from the destination country.

Methods

A web-based search of written media reports published in the English language, relating to deportations of tourists from any country, was conducted on the Google® search engine, using combinations of search terms, including "deportation", "deport*", "deport tourist" and "deported". Duplicate reports were removed from the analysis. For each search term used, the first 25 pages of website matches were examined. The following variables were extracted from each report and entered in a Google Drive database: host country, nationality of deportee(s), number of people involved, date of event, incident category, gender of deportees, age of deportees, alcohol or drug involvement, whether detention or incarceration occurred, and any recorded reaction from locals. Information regarding deportations that occurred due to visa issues, identity fraud, illegal immigration status, or a crime committed by a long-term resident of a foreign country were excluded from the analysis, as well as official government web pages providing information on travel to various countries. All data were validated by both researchers and analysed descriptively using frequencies, proportions (percentages), and means.

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Results

Of 780 print media articles retrieved, 22 met the inclusion criteria for our study. Table I summarises the characteristics of each deportation occurrence. Incidents leading to deportation occurred between 2012 and 2022. The most common reasons for deportation in this series were related to indecent exposure or physical damage to sacred monuments (n=6) and violations of COVID-19-related public health rules (n=6). Other incidents resulted from social media posts (n=3) and breach of environmental regulations (n=2). The region with the highest number of reported deportations was South-East Asia (68.2%, n=15), with the largest proportion of incidents reported from the island of Bali, Indonesia (45.5%, n=10). Deported tourists were residents of 18 countries. The gender of the deportees was provided in 20 cases, with males alone being involved in 35% (n=7), females alone in 20% (n=4), and both male and female tourists in 45% of incidents (n=9). Where age was specified (n=9), the mean age of deported tourists was 35.7 years.

Two media reports mentioned tourist intoxication with alcohol or recreational drugs ('magic mushrooms'). Two incidents, one in Malaysia and the other in the United Arab Emirates, led to tourists receiving monetary fines in addition to facing deportation. In three of the Bali-based deportations, the media reported negative local reactions to the deportees' actions. In the case of the American LGBTQIA+ female deported from Bali in January 2021 for posting tweets that caused offense to her hosts, there was significant outrage registered by Indonesian people online who expressed concerns that the woman's tweets would encourage an influx of "Westerners" into the country during the COVID-19 pandemic. In the second incident involving two Russian tourists who took nude photographs of themselves at a sacred tree in Bali in May 2022, some local people were reported as saying that foreign visitors should be more informed about Balinese customs.

Discussion

Healthcare professionals should play an active role in promoting responsible travel behaviour, which minimises adverse impacts on the host country, its people, and their environment. While occasionally the subject of discussions at international travel medicine conferences, there is hardly any literature in this area in medical journals. A previous reflective commentary called for research to develop a better understanding of the attitudes of travellers, their travel healthcare providers, and the travel industry towards responsible tourism.[1] We have previously discussed issues in this journal around the transportation by travellers of therapeutic or controlled drugs across international borders.[2]

Ours is the first study to examine the issue of deportation of tourists as a result of irresponsible tourist behaviour. The media reports cited give an insight into the range of offenses that can precipitate deportation. Personal indiscretions at significant sites in more conservative destinations, physical damage to monuments, breaches of COVID-19 control measures, and posting of offensive images or comments on social media accounted for the majority of circumstances leading to deportation. A study from two decades ago found that approximately 5% of travellers arrested abroad were subsequently deported, the majority of whom were male.[3] Reasons for detention were

analysed in that study but no specific information on the events leading to deportation were provided.

While most of the reports in the present study made no reference to the use of alcohol or recreational drugs, a study of air rage incidents aboard commercial flights identified alcohol as a precipitating factor in over half of cases.[4] The preponderance of COVID-19-related transgressions highlights the challenges faced by national authorities in the implementation of effective public health control measures during the pandemic. A perspective from India during an intense wave of COVID-19 disease called for tourists not to travel to pilgrimage sites to avoid the risks associated with super-spreading events at mass gatherings.[5]

Our study was subject to the limitations of web-based search strategies, including website optimisation restrictions. We restricted our internet search to a single search engine with a comprehensive global index. Additional reports may have been available in other search engines such as Bing. Relevant reports in languages other than English were not retrieved. Essential details that may have afforded useful insights into irresponsible tourist behaviour may not have been reported by the journalists concerned. This report focused on deportations, representing the extremity of sanctions applied to travellers who engage in irresponsible and offensive behaviour. We acknowledge that the threshold for deportation varies between jurisdictions and that many irresponsible acts attract penalties other than deportation, including fines and periods of incarceration.

Notwithstanding these limitations, we believe that this study of extreme irresponsible behaviour in tourists should inspire the travel medicine community to intensify its efforts to promote responsible travel. The ISTM responsible travel interest group should take a lead in publishing appropriate guidelines for international travellers. Wall posters in travel clinics, written information leaflets, social media posts and podcasts may be useful practical approaches to achieving this objective. We reiterate our call for future qualitative research in this neglected area.

Conclusions

Travel health professionals and the travel industry have an important role to play in promoting responsible tourist behaviour. This is the first study to describe deportations in travellers as the result of deviations from the principles of responsible tourism. The results may inform future research efforts and targeted public awareness campaigns.

Acknowledgements : None.

Funding : None received.

Competing interests : None declared.

Ethical approval : This study did not involve human or animal subjects and was therefore exempt from ethics committee review.

Data availability: The data underlying this article are available and were derived from sources in the public domain.

REFERENCES

1. Lim BCW, Flaherty G. Leaving light footprints – the importance of promoting responsible international travel. Int J Trav Med Glob Health 2018; 6(3):88-91. doi: 10.15171/ijtmgh.2018.18
2. Kissane JR, Flaherty GT. Transportation of therapeutic and controlled drugs across international borders: a descriptive analysis of information available to travellers. Int Health. 2022;ihac014. doi:10.1093/inthealth/ihac014
3. MacPherson DW, Guérillot F, Streiner DL, Ahmed K, Gushulak BD, Pardy G. Arrest and detention in international travelers. J Travel Med. 2000;7(4):180-186. doi:10.2310/7060.2000.00056
4. Coyle DJ, Smith MM, Flaherty GT. Descriptive analysis of air rage incidents aboard international commercial flights, 2000–2020. Transp Res Inter Persp. 2021; 11:1-6. doi: 10.1016/j.trip.2021.100418
5. Mandal S, Arinaminpathy N, Bhargava B, Panda S. Responsible travel to and within India during the COVID-19 pandemic. J Travel Med. 2021;28(8):taab147. doi:10.1093/jtm/taab147

Table I: Summary of specific irresponsible travel incidents leading to deportation

DATE	MEDIA ARTICLE SOURCE	COUNTRY	INCIDENT CATEGORY
November 2012	https://www.independent.ie/irish-news/irishman-gets-three-months-in-jail-for-sex-with-woman-in-back-of-dubai-taxi-28904500.html	United Arab Emirates	Public sexual indiscretion
June 2015	https://www.theguardian.com/world/2015/jun/12/british-tourist-who-stripped-naked-on-malaysian-mountain-to-be-charged	Malaysia	Indecent exposure at sacred site
January 2019	https://www.nzherald.co.nz/nz/exclusive-unruly-tourists-speak-out-as-deportation-looms/JTPLYHXKSSNRLEDXPOYKGZFLOQ/	New Zealand	Public disorder and environmental damage
January 2020	https://www.theguardian.com/world/2020/jan/15/tourists-to-be-deported-over-alleged-damage-defecation-at-machu-picchu	Peru	Environmental damage at national monument
January 2021	https://www.news.com.au/travel/travel-updates/travel-stories/us-woman-to-be-deported-from-indonesia-over-offensive-bali-tweets/news-story/4fc0ce78a9d5cfdcd3c19ee4f1e0cfe8	Indonesia	Offensive social media posts
May 2021	https://www.traveller.com.au/bali-to-deport-influencers-josh-paler-lin-and-leia-se-after-fake-mask-prank-h1vl0a	Indonesia	Breach of COVID-19 regulations
July 2021	https://eu.usatoday.com/story/travel/news/2021/07/12/bali-orders-us-tourist-leave-violating-covid-19-rules-unmasked/7934698002/	Indonesia	Breach of COVID-19 regulations
July 2021	https://www.travelpulse.com/news/destinations/four-tourists-deported-from-bali-for-covid-19-violations.html	Indonesia	Breach of COVID-19 regulations

July 2021	https://www.washingtonpost.com/world/2021/07/19/katie-hopkins-quarantine-video-australia/	Australia	Breach of COVID-19 regulations
December 2021	https://www.pattayamail.com/thailandnews/israeli-tourist-escaping-quarantine-hotel-in-thailand-will-be-charged-and-deported-384446	Thailand	Breach of COVID-19 regulations
August 2021	https://www.reuters.com/world/asia-pacific/singapore-jails-briton-not-wearing-face-mask-public-2021-08-18/	Singapore	Breach of COVID-19 regulations
November 2021	https://www.timesofisrael.com/israelis-detained-for-photographing-erdogan-palace-set-to-be-deported-lawyer/	Turkey	Photography in restricted location
November 2021	https://coconuts.co/bali/news/danish-man-who-damaged-shrine-in-bali-set-for-deportation-after-serving-prison-sentence/	Indonesia	Damage to national monument
April 2022	https://www.news.com.au/travel/destinations/asia/bali/canadian-actor-faces-deportation-from-bali-over-naked-haka/news-story/b66f8756bc3ee5a46a6f6cf563c1fc54	Indonesia	Indecent exposure at sacred site
April 2022	https://balidiscovery.com/bali-deport-5-moldavians-1-russian/	Indonesia	Illegal occupation of building
May 2022	https://www.abc.net.au/news/2022-05-09/foreigners-in-bali-find-themselves-in-hot-water-with-hindus/101040060	Indonesia	Indecent exposure at sacred site
May 2022	https://thethaiger.com/news/regional/video-estonian-model-faces-deportation-from-bali-for-criticizing-corrupt-police	Indonesia	Criticism of local police on social media
June 2022	https://economictimes.indiatimes.com/nri/migrate/kuwait-to-deport-expats-who-protested-over-remarks-against-prophet/articleshow/92166479.cms	Kuwait	Unauthorised protests
August 2022	https://www.newsfirst.lk/2022/08/12/scottish-tourist-goes-to-court-against-decision-to-deport-her-from-sri-lanka/	Sri Lanka	Posting of protest footage on social media
August 2022	https://www.ttrweekly.com/site/2022/08/tourist-deported-for-not-paying-his-bill/	Indonesia	Failure to pay accommodation bill
August 2022	https://indonesiaexpat.id/featured/russian-deported-from-suspected-magic-mushroom-effects/	Indonesia	Recreational drug intoxication
August 2022	https://www.thaiexaminer.com/thai-news-foreigners/2022/08/17/dutch-tourist-arrested-for-parrot-fish-kill-roslan-bendenia/	Thailand	Illegal catching of endangered fish

Pre-travel Health Advice and Medical Services by Healthcare Professionals – A Literature Review

Pei Kuan Lai

Introduction: Travel medicine is an emerging branch of medicine concerned with the well-beings of travellers before, during, and after travel. Pre-travel health advice and medical services are important to keep travellers healthy and ensure a safe and pleasant journey by minimising impact of illness and accidents.

Objective: This paper serves as a literature review paper on the pre-travel health advice seeking behaviours amongst travellers as well as the pre-travel health advice and medical services provided by the health professionals.

Methodology: An extensive online literature search using the search terms of "pre-travel", "health advice", "medical services", and "health professionals" was done on electronic bibliographic databases including PubMed and Scopus supplemented by Google Scholar.

Results: Twenty original studies as retrieved from the online databases which fulfilled the inclusion criteria were included in the review. Prevalence of pre-travel advice seeking behaviour is reportedly low in Malaysia (36.8% - 40.5%). Studies done amongst pharmacists in Malaysia revealed that the Malaysian pharmacists have been actively involved in providing pre-travel health advice and medical services (76.6% - 85%). High percentages of healthcare professionals in Europe and American (68% - 94.7%) provide pre-travel advice and medical services, followed by 79.5% in Saudi and 44.7% in Qatar. The top 5 topics of health advice most frequently cited were on malaria, travel insurance, sexually transmitted disease/HIV, vaccinations and first aid kit. The average duration spent for pre-travel consultation range from 5 to 30 minutes.

Conclusion: Travellers should be educated on the importance of seeking pre-travel advice and vaccinations to raise their awareness. Healthcare practitioners should be well-trained and informed to provide good pre-travel advice and services.

Keywords: *Pre-travel, health advice, medical services, travellers.*

Introduction

Travelling is one of the favourite activities globally, be it for leisure or business purposes. Over the past six decades, tourism industry has been experiencing rapid expansion and diversification.[1] In 2013, international travel increased by 5% and reached a record of 1087 million arrivals worldwide.[2] As reported by the United Nations World Tourism Organization (UNWTO) World Tourism Barometer, international tourists worldwide had subsequently grown 7% remarkably in 2017 reaching a total of 1.322 billion and it was expected to increase at a rate of between 4% and 5% in 2018.[3] By year 2030, the number of international travellers was estimated to reach 1.8 billion per year.[4]

Prior to the COVID-19 outbreak, it was estimated that 11.9 million outbound trips were recorded in Malaysia in 2016 (www.statista.com) and this figure was projected to grow by an average of 3.5% annually to 14.2 million trips by 2021.[5] Tourism is one of the major industries contributing to the Gross Domestic Product in Malaysia.[6] In 2017 alone, Malaysia received 25.95 million tourists which garnered RM82.1 billion to the economy in the country.[6] According to the Department of Statistics Malaysia Official Portal, the outbound tourism expenditure by Malaysians showed

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a steady upward trend from RM31.1 billion in 2015 to RM44.8 billion in 2019 before the pandemic.[7] Besides, annual sales of RM220 million in 2017 were also reported by the Malaysian Association of Tour and Travel Agents (MATTA).[5] Over the years, the number of Malaysians travelling abroad has also increased tremendously along with improved access to air travel, easier booking of flight tickets with the availability of Internet, as well as the rise of low-cost and economic airlines.[5]

Travel medicine is an emerging branch of medicine for more than 25 years[8] with the recent celebration of the 30th anniversary in 2021 by the International Society of Travel Medicine (ISTM). It deals with preventing and managing diseases and conditions which are commonly acquired during travel.[9] It involves a wide range of interdisciplinary fields ranging from epidemiology, preventive medicine, infectious diseases, primary care, emergency medicine, tropical medicine, dermatology, gastroenterology and many other medical speciality fields.[9] It is concerned with the well-beings of travellers before, during, and after travel.[8] The primary purpose of travel medicine is to minimise impact of illness and accidents by various modes of self-treatment which ultimately keeps the travellers healthy and alive.[10] The art of travel medicine lies in the meticulous adoption of preventive strategies while avoiding measures which may bring unnecessary adverse events, costs, or inconveniences.[10]

As international travel has increased dramatically, the risk of travel associated illnesses has also increased drastically,[11] such as infectious diseases.[12] Conservatively, 30-50% of travellers were estimated to experience injuries or fall ill whilst travelling.[13] The maximum level of joy and fun during travelling could be attained by travellers if they are well advised of the risk to their health and safety associated with the trip.[7] Therefore, travel medicine has emerged as an obvious necessity[10] and it is crucial for travellers to seek pre-travel health advice and medical services to protect themselves from possible travel-related illnesses.[1,14] Ideally, pre-travel consultation should be done 6 to 8 weeks before travel to allow for vaccine courses or trial of chemoprophylaxis.[8] The risks of conditions such as infectious diseases, extreme temperatures, and marine hazards could be reduced and effectively prevented by pre-travel advice, vaccinations, and chemoprophylaxis.[15]

Hence, the main objective of this paper is to serve as a literature review paper on the pre-travel health advice seeking behaviours amongst travellers as well as the pre-travel health advice and medical services provided by the health professionals. By gathering all the published evidences for this topic, it aims to describe and provide insights on the behaviours of travellers in seeking pre-travel health advice as well as the involvements of health professionals including physicians, general practitioners (GPs), pharmacists, and nurses, not only from Malaysia but also globally, in travel medicine.

Methodology

An extensive online literature search using the search terms of "pre-travel", "health advice", "medical services", and "health professionals" was done on electronic bibliographic databases including PubMed and Scopus supplemented by Google Scholar.

The inclusion criteria for the eligible studies to be included in this literature review are as follows:

1. Study site: Studies conducted in Malaysia and all other countries.
2. Study participants: All healthcare professionals, including physicians, GPs, pharmacists, nurses, and etc.
3. Study design: Cross-sectional study
4. Study type: Original articles
5. Language: English

The exclusion criteria of the papers are:

1. Books, monographs, reports, case reports, conference abstracts, editorials, letters, comments, reviews (narrative or systematic), study protocols, as well as theses or dissertations

Results

The literature search was performed from inception through 3rd July 2022. An online database search using search terms "pre-travel", "health advice", "medical services", and "health professionals" yielded 20 relevant papers which fulfilled the inclusion criteria for this review. After finalising the studies to be included for review, full texts of all the eligible studies were retrieved. The retrieved references were managed using EndNote X8 citation manager.[16]

The studies were conducted in many countries globally, including Australia, Thailand, Ireland, New Zealand, United Kingdom, Qatar, Saudi Arabia, United States, Germany, France, Turkey, Switzerland, and Malaysia. Out of the 20 papers, two papers were published in Malaysia (each in Kuala Lumpur and Selangor). The studies had involved nurses, GPs, pharmacists, and primary health care (PHC) physicians.

Seeking Pre-Travel Health Advice and Uptake of Pre-Travel Vaccines among Travellers

Pre-travel advice seeking among Malaysian travellers was found to be rather low. A survey done among 498 Malaysian travellers in the Kuala Lumpur International Airport (KLIA)[17] reported that only 36.8% of the respondents had sought pre-travel health advice and mostly (64.7%) from their doctor. It is noteworthy that only 23.6% of the travellers had received travel vaccinations, 40% were uninsured and over 50% did not know how to access medical care overseas. Meanwhile, this study also reported that the biggest perceived barriers to seeking travel health advice was concern about potential side effects (21.9%), not considering themselves at risk (20.9%), and financial constraints (13.3%).

Another survey amongst 316 travellers in KLIA and Sultan Abdul Aziz Shah Airport[14] also reported similar results where only 40.5% of the subjects sought pre-travel health advice. Of those, only 12.5% sought advice from a health care professional, 39.8% sought it from family or friends, 35.2% from the internet, 7.0% from a travel agency, 3.1% from their company and 2.3% from travel literature. Fifty-two point eight percent of subjects had received pre-travel vaccinations and 4.1% of the subjects took malaria prophylaxis medication.

A survey amongst 111 pharmacists in Kuala Lumpur showcased that the participation of Malaysian pharmacists in travel medicine was quite high, with 76.6% actually provided travel medicine advice to travellers.[2] The pharmacists counselled a mean (±SD) of 6±5 travellers every month and the average counselling time spent with each traveller was 8±4 minutes.

Another survey conducted in 95 community pharmacies in nine districts of Selangor revealed that 85% of the pharmacies provided services to both international travellers and outbound Malaysian travellers.[1] The common healthcare services provided to international travellers were monitoring of chronic diseases including hypertension and diabetes, and advice on minor ailments, supplements and medical devices. The key health services provided to outbound Malaysian travellers were advice on vaccination requirements, better management of chronic diseases and necessary medications to manage illness during travel. Common services sought by international travellers were measuring blood pressure (81.19%), testing of blood glucose (77.23%), advice on minor ailments such as fever, allergy, cold and flu (39.60%), recommendations regarding supplements and medical devices (37.62%), and general guidance on wound care and minor injuries (11.88%). Medicines and self-care products sought by all kinds of travellers were insect repellent (100%), anti-diarrhoeal medications (100%), medications for motion sickness (100%), medications for travellers' diarrhoea (98.02%), oral rehydration solution (ORS) (97.03%), medications for altitude illness (74.26%), first aid kit for travellers (69.31%), anti- malarial medications (41.58%), water purification tablets (19.80%), mosquito nets (9.90%), vaccinations for travellers (7.92%), and oral typhoid vaccine (3.96%).

A nationwide survey done in Germany[18] involving 1320 GPs highlighted that 94.7% provided pre-travel advice or travel-related health care to their patients. Reportedly, the average number of patients with travel-related issues was 13.2 per month and about two-thirds (63.6%) of the GPs gave pre-travel counselling to at least 10 patients monthly.

In the United States, a survey amongst 902 practitioners[19] saw that 80% of the respondents personally provided pre-travel advice (95% travel medicine specialists versus 73% primary care physicians). More than half (59%) of the travel medicine specialists compared to only 18% of the primary care physicians reportedly consulted >500 travellers per year.

A study involving 433 GPs in Australia reported that the GPs saw an average of 3.9 (SD ± 11.8) travellers per week and most of them (79.2%) spent between 5-25 minutes for pre-travel consultations.[20] Meanwhile, another survey conducted amongst 255 pharmacists in Australia[21] remarked that over two-thirds (68%) provided travel-related advice in their current practice. Similarly, the frequency of giving advice was rather low with 69% pharmacists seeing less than two travellers per week and 83.9% spending less than one hour per week on providing these services. In addition, only two pharmacists (1.1%) in this study completed full and formal pre-travel health risk assessments for the patients.

In a survey of 210 primary healthcare physicians in Saudi Arabia,[22] most of the physicians (79.5%) had ever provided health advice to travellers. The majority of the physicians had less than 10 consultations every week for pre-travel health advice and approximately 5-10 minutes were spent on more than 30% of travellers. These findings were in contrast to another study done in the state of Qatar whereby a survey amongst 130 primary health care (PHC) physicians found that only 44.7% provided health advice to travellers.[23] Most physicians (44.1%) spent at least 15 minutes with each traveller and the mean duration of consultation was 7.3±4.6 minutes.

Besides, a study among 150 Swiss and 150 German general practitioners reported that 96% of the Swiss GPs and 89% of the German GPs provided pre-travel advice, with 4–5 times per month and 5–7 times per month respectively for the two groups.[24] However, another survey involving 120 Swiss pharmacists conducted in three cantons in Switzerland found that only 56% of the Swiss pharmacists gave advice regularly on an average of 2 to 3 times per month.[25]

Meanwhile, in a survey involving 91 general practices in South Cheshire Health Authority, the duration of consultation ranged from less than 5 to over 30 minutes, with a median and mode of 11 to 15 minutes respectively.[26]

In a cross-sectional study of pre-travel health-seeking practices among travellers (n=843) departing Sydney and Bangkok airports,[27] only half (49%) of the respondents were found to have sought pre-travel health information from any source and out of which only 35% seeking pre-travel advice from a health professional, the majority through general practice. Besides, only 12% of the respondents had received pre-travel vaccines. Interestingly, this study also highlighted that Asian travellers were less likely to report seeking pre-travel health advice and uptake of pre-travel vaccines than Australian or other Western travellers. As for the Australian travellers, migrant Australians were less likely to report seeking pre-travel health advice compared to the Australian-born travellers.

Also, a survey of 2019 travellers with chronic illness in France found that less than half (only 40.1%) sought pre-travel advice from their GPs[28] with 40.1% healthy travellers and 40.5% travellers reporting chronic illness sought pre-travel advice from their GPs (P=0.96).

Similarly in the United Kingdom, a survey involving 320 British residents at Heathrow Airport traveling to malaria endemic areas revealed that only 54% visited their GPs before their trips and of these 79% were advised about antimalarial precautions.[29]

In another study describing the characteristics of last minutes travellers (LMTs) attending a travel health clinic in Ireland (n=1296),[30] over half (52.0%) had previously received travel vaccinations. The majority (92.8%) of the LMTs were unable to complete a scheduled course of pre-travel vaccines. Nevertheless, type of pre-travel advice was not the scope of this study.

Types of Pre-Travel Health Advice and Medical Services Provided

In a survey among GPs registered with the New Zealand Medical Council,[31] the types of health advice given were concerning malaria (310/310, 100%), immunisation (309/310, 100%), travellers' diarrhoea (296/305, 97%), insect avoidance (287/299, 96%), sexually transmitted diseases/human immunodeficiency virus (233/283, 82%), water purification (235/293, 80%) and other areas (35/75, 47%).

A study involving 433 GPs in Australia[20] reported that the GPs generally advised the travellers on travel vaccines, malaria prophylaxis, personal protective measures against insect bites, geographic diseases, clothing, and sexually transmitted infections. The majority of GPs did not routinely give information on travel insurance, unsafe sex, barotrauma, in-flight exercise, jet lag or first aid knowledge.

Of the physicians active in travel medicine in a nationwide Germany survey,[18] the majority (98.2%) dealt with prophylaxis issues (on average, 11.6 patients/ month). Other issues advised on included travellers' diarrhoea, mosquito bites, malaria, immunisation, first-aid kit, travel insurance, sexually transmitted disease, and protection from sun.

Health advice offered by 50 GPs in Western Turkey[32] were care with food or water 35(70%), risks of excessive exposure to sun 15(30%), safe sex practices 9(18%), avoidance of insect bites 4(8%), danger of rabies 3(6%), dangers of illicit drug use 2(4%), health insurance 2(4%), and advisory leaflet given 2(4%).

Nevertheless, many other studies did not provide the details of the type of medical advice given. For instance, a survey involving 91 general practices in South Cheshire Health Authority,[26] most respondents reported giving advice on most travel-associated risks and the commonest source of advice was wall immunisation charts.

A survey amongst 111 pharmacists in Kuala Lumpur[2] only revealed that the topic rated as the most frequently advised was traveller's diarrhoea (74.7%) and the main area least frequently discussed was travel health insurance (64%).

In another survey conducted amongst 255 pharmacists in Australia,[21] when questioned about the type and level of travel health service offered, over a third of respondents (34.5%) reported that they only responded to travellers' questions and did not perform formal pre-travel health risk assessments, although 64.5% of respondents reported that they did ask the traveller questions about their itinerary and medical history.

Topics of pre-travel health advice reported in the studies are summarised in Table I. The top five topics of health advice most frequently cited were malaria (9 studies), travel insurance (7 studies), sexually transmitted disease or HIV (7 studies), vaccinations (6 studies), and first aid kit (6 studies).

Table I: Pre-travel Health Advice Given by Health Professionals

Topics	Reported Papers
Malaria	Heslop 2018, Leggat 1999, Seelan 2003, Campbell 1987, Al-Hajri 2011, Abeer 2021, Ropers 2004, Kodkani 1999, Hatz 1997.
Travel insurance	Heslop 2018, Seelan 2003, Al-Hajri 2011, Abeer 2021, Ropers 2004, Taha 2016, Usherwood 1989.
Sexually transmitted disease / HIV	Heslop 2018, Leggat 1999, Seelan 2003, Al-Hajri 2011, Abeer 2021, Ropers 2004, Kodkani 1999.
Vaccinations	Heslop 2018, Seelan 2003, Al-Hajri 2011, Abeer 2021, Kodkani 1999, Hatz 1997.
First aid kit	Heslop 2018, Seelan 2003, Al-Hajri 2011, Abeer 2021, Ropers 2004, Kodkani 1999.

Mosquito bite	Heslop 2018, Al-Hajri 2011, Ropers 2004, Kodkani 1999, Hatz 1997.
Insect bite	Heslop 2018, Leggat 1999, Seelan 2003, Abeer 2021, Usherwood 1989.
Jet lag	Heslop 2018, Seelan 2003, Al-Hajri 2011, Abeer 2021.
Motion sickness	Heslop 2018, Seelan 2003, Al-Hajri 2011, Abeer 2021.
Safe food consumption	Heslop 2018, Usherwood 1989, Kodkani 1999.
Safe water consumption	Heslop 2018, Leggat 1999, Usherwood 1989.
Immunisations	Leggat 1999, Ropers 2004, Usherwood 1989.
Geographic disease	Seelan 2003, Al-Hajri 2011, Abeer 2021.
Clothing	Seelan 2003, Al-Hajri 2011, Abeer 2021.
Safe sex	Seelan 2003, Al-Hajri 2011, Abeer 2021.
Barotrauma	Seelan 2003, Al-Hajri 2011, Abeer 2021.
In-flight exercises	Seelan 2003, Al-Hajri 2011, Abeer 2021.
Sun protection	Ropers 2004, Usherwood 1989, Kodkani 1999.
Rabies	Usherwood 1989.
Advisory leaflet given	Usherwood 1989.

Discussion

This literature review provides valuable insights into pre-travel health advice seeking amongst travellers as well as the pre-travel health advice and medical services provided by the healthcare personnel, not only from Malaysia but also international context. A review of the literature shows that there is a paucity of data on the pre-travel health advice and medical services provided by the medical personnel in the Southeast Asia countries. Most studies regarding this topic were conducted in the Western countries. Nevertheless, it is noteworthy that two studies had been conducted in the Malaysian airports and two studies involving pharmacists had been done in Malaysia.

To date, there is no specific travel medicine clinic in Malaysia.[2] Hence, community pharmacists play a vital role in providing pre-travel advice and health services to the travellers as they are among the first in line to convey pre-travel health advice and offer medical services to the community. This is evidenced by the two surveys done amongst the pharmacists in Kuala Lumpur whereby more than three-quarters of the pharmacists in the two studies (76.7% and 85%,

respectively)[1,2] provided advice and medical services to the travellers. However, it is important to note that no studies among medical doctors have been conducted in Malaysia to date. Hence, more studies involving not only the medical doctors but also all other groups of healthcare practitioners should be done in Malaysia.

The two surveys conducted in the Malaysian airports[14,17] portrayed a lack of preparedness amongst travellers[17] as less than half of the travellers actually sought pre-travel advice (36.8% and 40.5% respectively) and only 23% to 53% of travellers had the recommended travel vaccination coverage. This could be due to the lack of travel medicine clinic in Malaysia. Besides, this could also indicate a lack of awareness on seeking pre-travel advice among Malaysian travellers. It is thus warranted to set up more travel medicine clinics in Malaysia as part of the initiative to raise awareness among Malaysian travellers to seek pre-travel advice. Nevertheless, these surveys provided very important initial baseline data for travel medicine in Malaysia and this may inform the future development of travel medicine service in the country.

Meanwhile, surveys in the airports of Bangkok,[27] Sydney,[27] Ireland,[30] and Heathrow,[29] as well as France Travel Medicine Clinic,[28] revealed that only around half of the participants sought pre-travel advice prior to their trips. Although the numbers were slightly higher as compared to the Malaysian airports,[14,17] this still depicts the low uptake of pre-travel health advice seeking amongst travellers. This highly suggests that public health strategies aimed at travellers may be warranted, such as increasing uptake of pre-travel medical advice, ensuring routine and travel vaccines are up-to-date, as well as setting up of travel clinics which are affordable and accessible.[27]

In view of the low percentages of travellers seeking pre-travel advice, it is thus also strongly suggested to conduct more future studies to explore the reasons of not seeking pre-travel health advice and medical services amongst travellers. Perhaps qualitative studies would provide more in-depth views and insights from the perspectives of travellers in regard to seeking pre-travel advice.

Nevertheless, the review generally revealed high percentages (44% - 96%) of healthcare practitioners providing pre-travel advice as part of their consultations. This is an encouraging scenario as it depicts the high awareness and active participation of medical professionals in travel medicine. Seeing adequate number of travellers in a timely manner could help to maintain expertise amongst the healthcare practitioners as well.[23]

From the review, the average time spent for pre-travel consultations range from 5 to 30 minutes which is equivalent to average time spent by a doctor with a patient in a general consultation. This might suggest the limited or insufficient time available for the doctors to provide comprehensive pre-travel advice and services. Consequently, the doctors, physicians, or GPs should consider producing standardised written advice and documentations for travellers such as pamphlets containing pre-travel advice and healthful information.[20] Distribution of written travel advice and information not only raises awareness amongst travellers in an efficient manner but also is a cost-effective way.

It is crucial for healthcare practitioners to provide not only informative but also accurate pre-travel advice and medical services. Hence, healthcare practitioners should be well-informed and receive sufficient training to achieve proficiency in travel medicine[2] for the maximal benefits of travellers at the receiving end. It was reported that there were inadequacies of training, inconsistent reference resources, and little incentive for practices for healthcare professionals to provide pre-travel health services.[26] On top of all, specialised travel medicine clinical services are also not currently well- established in Malaysia.[17] Therefore, it is strongly advocated that training centres for travel medicine should be widely established globally. National policy on governance or training requirements as well as monitoring of the quality in travel medicine should also be looked into.[26]

Apart from that, the topic of travel medicine should also be incorporated into the undergraduate curriculum as well as postgraduate training[2] for medical subjects in order that the medical, pharmacy, nursing, and students of other allied health subjects could get early exposure to travel medicine knowledge.

Lastly, more future research should be carried out to look into the level of knowledge pertaining to travel medicine amongst the healthcare practitioners. There is also a need for future research on the quality of pre-travel advice provided by the healthcare practitioners.[18] Besides, research should also be done on the demography of travellers in order to seek correlations between demographic characteristics and pre-travel advice seeking behaviours amongst travellers.

Conclusion

Travel medicine is vital to ensure a pleasant and safe journey for all travellers. However, there is a deficiency in pre-travel advice and services seeking behaviours amongst travellers. Hence, travellers should be educated on the importance of seeking pre-travel advice, vaccinations, and medical services. Meanwhile, healthcare practitioners should be well-trained in travel medicine and given good incentives to encourage more participation in travel medicine practices.

REFERENCES

1. Kc B, Khan TM, Xuan WY, Alrasheedy AA, Mohamed Ibrahim MI, Leggat PA. Travel health- related activities and services provided by community pharmacies in Selangor, Malaysia: A cross- sectional analysis. Travel Med Infect Dis. 2020;33:101463.
2. Taha NA, See YL. Provision of travel medicine advice through community pharmacies: Assessment of knowledge, attitudes and practices of pharmacists in Malaysia. International Journal of Pharmacy Practice. 2016;24(5):326-32.
3. United Nations World Tourism Organization (UNWTO). UNWTO tourism highlights. 2018 Edition Madrid: UNWTO; 2018 Available from: http://marketintelligence.unwto.org/publication/unwto-tourism-highlights-2018.
4. UNWTO Annual Report 2014. e-published available at http://www2.unwto.org/annualreport2014.
5. Malaymail. Malaysian travel trends a sign of good economy, report says. 2018 10 January 2018. Malay Mail Online.
6. Ministry of Tourism and Culture, Malaysia. Tourism Malaysia: Annual report 2014. Malaysia: Kuala Lumpur: Ministry of Tourism and Culture; 2014.
7. Hakim L. Travel medicine: Travelling to space and the reality on the ground. IeJSME. 2022;16(1):1-2.
8. Gherardin T. The pre-travel consultation - An overview. Aust Fam Physician. 2007;36(5):300-3.
9. Jong EC. Chapter 1 - approach to travel medicine and contents of a personal travel medicine kit. The travel and tropical medicine manual. fifth ed. Elsevier; 2017. p. 1–16.

10. Steffen R, DuPont HL. Travel medicine: What's that. J Travel Med. 1994;1(1):1-2.

11. Lee AW KP. Planning for healthy travel: Responsibility and resources. CDC Health Information International Travel. Atlanta: CDC, 2014. Available from: http://wwwnc.cdc.gov/travel/yellowbook/2014/chapter-1-introduction/introduction-to-travel- health-and-theyellow-book.

12. World Health Organization (WHO). International travel and health. Geneva: WHO, 2012.

13. Behrens RH. Protecting the health of the international traveller. Transactions of the Royal Society of Tropical Medicine and Hygiene. 1990;84(5):611-29.

14. Chow ZY, Ching SM, Ramachandran V, Hoo F, Sulaiman WAW, Foo YL, *et al*. Travellers' Knowledge, Attitudes and Practices Regarding Prevention of Infectious Diseases: A Cross Sectional Study from Malaysian Airports. Southeast Asian Journal of Tropical Medicine and Public Health. 2018;49(4):707-16.

15. Felkai P. The importance of different forms of prevention in travel medicine. Asian Pacific Journal of Tropical Medicine. 2010;3(1):74-7.

16. EndNote X8. London: Clarivate Analytics; 2020.

17. Flaherty G, Asyraf Maarof M, Fry G. An Analysis of the Preventive Behavior and Attitudes of International Travelers from South East Asia; The Kuala Lumpur Airport Survey. International Journal of Travel Medicine and Global Health. 2015;3(1):5-9.

18. Ropers G, Krause G, Tiemann F, Du Ry van Beest Holle M, Stark K. Nationwide survey of the role of travel medicine in primary care in Germany. J Travel Med. 2004;11(5):287-94.

19. Kogelman L, Barnett ED, Chen LH, Quinn E, Yanni E, Wilson ME, *et al*. Knowledge, attitudes, and practices of US practitioners who provide pre-travel advice. J Travel Med. 2014;21(2):104-14.

20. Seelan ST, Leggat PA. Health advice given by general practitioners for travellers from Australia. Travel medicine and infectious disease. 2003;1(1):47-52.

21. Heslop IM, Speare R, Bellingan M, Glass BD. Australian Pharmacists' Perceptions and Practices in Travel Health. Pharmacy (Basel). 2018;6(3).

22. Sharahili AA, Fayiz ALE, Ghzwany AA, Alazmi AM, Alhwsawi EA. Knowledge, attitude, and practice of travel medicine among primary health care physicians in the Cluster-1, Riyadh City, Saudi Arabia: A cross-sectional study. Journal of Family Medicine and Primary Care. 2021;10(7):2587.

23. Al-Hajri M, Bener A, Balbaid O, Eljack E. Knowledge and practice of travel medicine among primary health care physicians in Qatar. Southeast Asian Journal of Tropical Medicine and Public Health. 2011;42(6):1546.

24. Hatz C, Krause E, Grundmann H. Travel advice: A study among Swiss and German general practitioners. Tropical Medicine & International Health. 1997;2(1):6-12.

25. Kodkani N, Jenkins JM, Hatz CF. Travel advice given by pharmacists. J Travel Med. 1999;6(2):87-93.

26. Hoveyda N, McDonald P, Behrens RH. A description of travel medicine in general practice: A postal questionnaire survey. J Travel Med. 2004;11(5):295-9.

27. Heywood AE, Watkins RE, Iamsirithaworn S, Nilvarangkul K, MacIntyre CR. A cross-sectional study of pre-travel health-seeking practices among travelers departing Sydney and Bangkok airports. BMC public health. 2012;12(1):1-9.

28. Gagneux-Brunon A, Andrillat C, Fouilloux P, Daoud F, Defontaine C, Charles R, *et al*. Pre-travel advice seeking from GPs by travellers with chronic illness seen at a travel clinic. Journal of Travel Medicine. 2016;23(3):1-5.

29. Campbell H. Imported malaria in the UK: Advice given by general practitioners to British residents travelling to malaria endemic areas. The Journal of the Royal College of General Practitioners. 1987;37(295):70-2.

30. Flaherty GT, Hasnol MH, Sulaiman LH. Better late than never-an analysis of last-minute travelers attending a specialist travel medicine clinic in Ireland. International Journal of Travel Medicine and Global Health. 2019;7(4):123-8.

31. Leggat PA, Heydon JL, Menon A. Health advice given by general practitioners for travellers from New Zealand. N Z Med J. 1999;112(1087):158-61.

32. Usherwood V, Usherwood TP. Survey of general practitioners' advice for travellers to Turkey. J R Coll Gen Pract. 1989;39(321):148-50.

Multiple Hepatic Haemangiomas: A Case Report

S T Kew[1], Wei Yen Lim[2]

A healthy 30-year-old woman underwent health screening, and was incidentally found to have a well-defined echogenic lesion in Segment VI of her liver, measuring 4.2 X 1.8cm in her ultrasound scan. She was asymptomatic, has no cutaneous lesions, nor stigmata of chronic liver disease. She has no hepatomegaly. CT scan of her abdomen found multiple liver haemangiomas, varying in size from 21 X 28mm to sub-centimeter lesions.

Diagnosis of hepatic haemangioma in this patient is based on typical appearance on contrast imaging. Their appearance is important to recognise as they do not need intervention and attempts at instrumentation for diagnosis or surgery may result in more harm than good.

Keywords: *Hepatic haemangioma (HH), Benign tumour of the liver, Conventional ultrasonography (US), Computer tomography (CT)*

Introduction

Haemangiomas are well known congenital vascular malformations, and sometimes referred to as cavernous haemangiomas. Although genetic predisposition has been proposed, the exact aetiology of this tumour is still unknown. These lesions can affect any organ site of the body, with the scalp and face being the most commonly affected sites. They can vary in size from a few millimetres to several centimetres in diameter. Current evidence indicates that these benign tumours have no malignant potential.[1,4]

Intra-abdominally, haemangioma can develop anywhere, such as solid organs, ligaments, or hollow viscera, with the liver being the most common abdominal organ to be involved. Of all tumours affecting the liver, haemangioma is the second most common, following metastasis. Although its precise incidence is unknown, it is estimated to affect about 4-20% of the general population.[1,4]

Case Report

A 30-year-old single woman was referred to the author as she was incidentally found to have liver lesion on abdominal ultrasound examination during health screening. She has no symptoms. She does not smoke, and drinks alcohol only on occasions. She has no significant family history.

She weighed 44.4kg. Clinical examination was normal, in particular there were no stigmata of chronic liver disease, and no cutaneous lesions. Examination of her abdomen found no abnormal mass, no hepatomegaly or splenomegaly. Laboratory tests including liver function tests, full blood counts, α-fetoprotein were all within normal limits. She has antibody to Hepatitis B surface antigen.

An ultrasound scan of her abdomen found a well defined echogenic lesion in Segment VI of her liver, measuring 4.2 X 1.8cm. Computer tomography (CT) scan of her abdomen found multiple liver haemangiomas. There were 10 lesions seen in right and left liver lobes (segments 2, 3, 4, 5, 6, 7, 8). The larger ones are seen in segment VI (21 x 28 mm) and segment VII (22 x 18 mm), respectively. Multiple focal hypodense lesions were seen in the right and left liver lobes on plain CT scan. These lesions show increased peripheral enhancement on the arterial phase, on portovenous and delayed phases the lesions demonstrate centripetal fashion of filling-in contrast,

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and on late delayed phase there is homogenous washout of the contrast seen within these lesions. These features are compatible with benign liver haemangiomas.

Considering the fact that patient has no symptoms, and the largest of her haemangiomas measures 28mm, she does not need any definitive treatment, and has been advised to come for follow-up and repeat imaging at six monthly intervals.

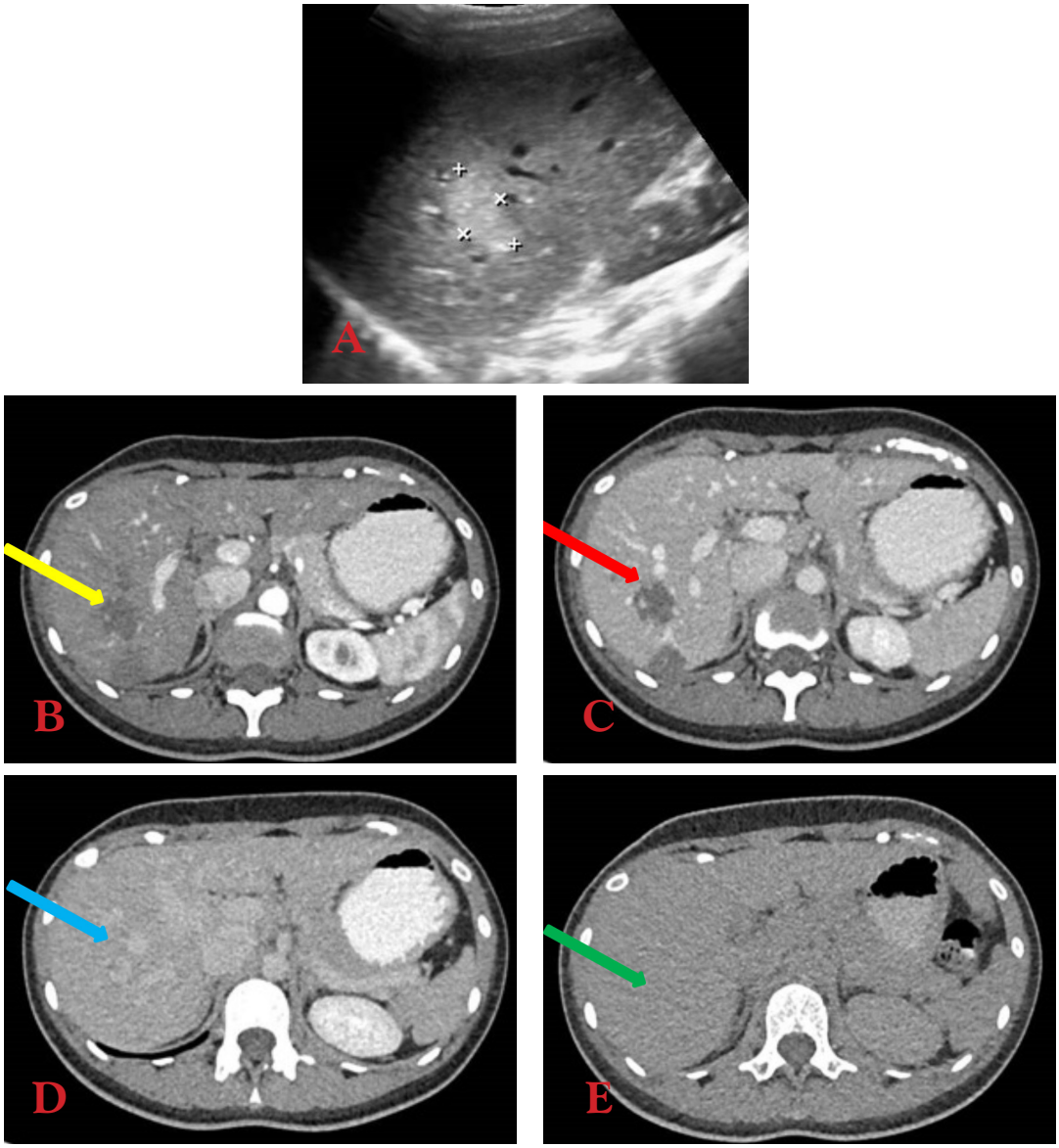

Figure I – Ultrasound and Contrast CT image of Liver haemangioma in segment VI

A : Ultrasound image: through segment VI of liver shows well defined echogenic lesion.

Figure (B-E): Dynamic CT enhancement pattern

B : Arterial phase: typically discontinuous, nodular, peripheral enhancement of contrast

C : Portovenous phase: progressive peripheral enhancement with more centripetal fill-in contrast

D : Early delayed phase: further fill-in contrast, slight hyperdense to liver parenchyma

E : Late delayed phase: isodense to liver parenchyma.

Discussion

Hepatic haemangiomas can affect any age group, with young adult females being the most common group to have this tumour (F:M ratio 5:1).[1,2,3] Most of the tumours are detected between the third and the fifth decade of life. They are usually small (less than 4 cm in diameter) and asymptomatic, and diagnosed incidentally, either by imaging studies or during abdominal operations done for other surgical indications. For the majority of people who are known to have liver haemangioma, the natural history remains uneventful. The tumours do not increase in size over time, and therefore are unlikely to generate future symptomatology.[1,2]

Diagnosis

The importance of hepatic haemangioma comes from its relatively high incidence in comparison to other focal liver lesions, its occurrence as an incidental finding in medical imaging, and the need to differentiate it from other more serious focal liver lesions. The latter consideration is particularly important in patients with primary malignant neoplasm and in patients with liver cirrhosis. In the former, it is important to differentiate haemangioma from liver metastasis. In the latter, it is important to differentiate it from hepatocellular carcinoma.

On conventional ultrasound, hepatic haemangioma appears as a *hyperechoic homogenous nodule*, with well-defined margins and posterior acoustic enhancement. Moreover, on follow-up exams or while comparing the current scan with the previous ones, hepatic haemangioma usually does not change in size.

The typical hepatic haemangioma appears on CT scans as a hypodense, well-defined lesion, which after contrast injection shows peripheral nodular enhancement with progressive centripetal homogeneous filling. The washout of contrast is the key feature for diagnosis.

Histology sampling

Macroscopically, these tumours are hypervascular, well-circumscribed lesions; while microscopically, they are described as variably sized vascular spaces lined by flat endothelial cells, filled with ectatic blood and separated by fibrous septa.[1,2]

Due to its vascular nature, biopsy with histological sampling has a great risk of haemorrhage (especially in large, subcapsular lesions), including mortality. Biopsy is thus reserved for extremely atypical lesions, with equivocal features on imaging.

Natural History

Most hepatic haemangiomas are small and asymptomatic at the time of diagnosis and the evolution is relatively stationary.[3] There is no data in literature to suggest malignant transformation. According to existing data, there is no known pharmacological therapy able to reduce the size of hepatic haemangioma.

Prognosis

Most people with hepatic haemangioma require no active treatment besides regular follow-ups and radiologic studies. There is a small number of cases with rapid volumetric growth or complications, which prompt for appropriate therapy.[2]

REFERENCES

1. Bajenaru N, Balaban V, Săvulescu F, Campeanu I, Patrascu T. Hepatic Haemangioma: Review. *Journal of Medicine and Life, Special Issue*, 2015; **8**: pp.4-11
2. Mansour S, Khouri S, Andraous M, Khuri S. Extremely large haemangioma of the liver: Safety of the expectant management. *Arch Surg Clin Res*. 2019; **3**: 061-064.
3. Zhu H, Obeidat K, Ouyang J, Roayaie S, Schwartz ME, Thung SN. Recurrent giant hemangiomas of liver: Report of two rare cases with literature review. *World Journal of Gastrointestinal Surgery*. 2012 Nov 11;4(11):262.
4. Toro A, Mahfouz AE, Ardiri A, Malaguarnera M, Malaguarnera G, Loria F, Bertino G, Di Carlo I. What is changing in indications and treatment of hepatic hemangiomas. A review. Annals of hepatology. 2014 Jul 29;13(4):327-39.