

Original Article

Optimizing outcomes and experience for patients traveling abroad for spine surgery: A survey of neurosurgeons and orthopedic spine surgeons in Saudi Arabia

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Background

It is widely accepted that patients with complex medical diagnoses and those with the means will travel for specialized medical care abroad. For various reasons, patients from the Gulf countries, including the Kingdom of Saudi Arabia (KSA), have comprised a significant proportion of patients traveling abroad for care. Rarely, however, have local physicians and surgeons been involved at the granular level in these decisions. This study aims to better understand the opinions, insights, and suggestions of local spine surgeons in KSA on the outbound surgical services provided to their patients.

Materials and Methods

A cross-sectional study was conducted from April 11 to April 27, 2022. An electronic Qualtrics online survey with 12 items was sent to all spine surgeons from KSA, identified by the local neurosurgery, orthopedics, and spine societies.

Results

A total of 110 participants were identified with 86 responses. The patient's perception of the local system, the complexity of the case, and the opportunity for tourism, in that order, were selected as the main reasons for patients traveling abroad. The top three destinations for spine surgery were Germany (31%), the USA (23%), and Egypt (16%). Hospital and surgeon's reputations were chosen as the most likely factors for patients to select their destination. The quality of care received abroad was considered fair (49%) or good (31%), while the communication between stakeholders and the patient was considered poor by 72% and 52% of the respondents, respectively.

Conclusion

This study highlights the need to engage local physicians in the conversation involving destination services. While most Saudi surgeons surveyed consider the care abroad acceptable for their patients, the vast majority have identified a gap in communication among treating physicians, local physicians, and patients. Many have also suggested a need for better education and awareness locally to improve the perception of the local capabilities.

Keywords: Saudi Arabia, Spine surgery, Medical tourism, Traveling abroad, Destination services, Patient migration.

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1. Introduction

Despite the current development and advancement of the healthcare system in the Kingdom of Saudi Arabia (KSA), with the return of more abroad-trained spine surgeons, it is not uncommon for patients with complex medical conditions who have the necessary means to travel for specialized care (1). In fact, the so-called “medical tourism” industry is a vibrant one, with leading medical centers worldwide catering to this patient population (2–5). According to the US consortium of international patient programs (USCIPP), it is in the top five countries of origin for patients traveling to the US for care (6). KSA has a growing population of over 35 million, and their GDP is one of the tops worldwide, with 23585.5 US dollars per capita in 2021 (7). The combination of plentiful resources along with patients’ desire to travel abroad for care uniquely positions the KSA in the destination services conversation.

This study aims to gain insight and opinions from local neurosurgeons and orthopedic spine surgeons on their patients’ outbound spine surgical care. We believe that destination services have primarily been a “business development” initiative and engaging local physicians with this process has been largely overlooked. Meaningful engagement with the local teams potentially optimizes clinical care, communication before and after surgical intervention, and patient experience.

2. Materials and Methods

2.1. Study design

A cross-sectional study was conducted from April 11 to April 27, 2022 using an electronic Qualtrics online survey. The Qualtrics Software license was obtained through the University of Arizona Library. Current experiences and opinions on patients traveling abroad for spine care were assessed. The

survey consisted of a 12-items questionnaire (Figure 1) sent to all spine (orthopedics and neurosurgeons) surgeons from KSA, identified by neurosurgery, orthopedics, and spine societies.

The survey aimed to evaluate the opinions and insight of local spine surgeons regarding their own experience with patients traveling abroad for spine surgery and the patient experience. Survey questions were created based on current concerns in medical tourism, prior relevant studies, and demographic information. As a result, our survey identified current patient experience, the main destination of patient care, and opinions from a local surgeon’s experience.

2.2. Data analysis

Utilizing the Qualtrics software, the questions depended on a previous response regarding whether the surgeon has taken care of patients who traveled abroad or feels knowledgeable in this area. Although the survey ended at this point for the surgeons who explained no experience with it using deemed “question behavior,” these computations were based on “IF” & “AND” operations.

An initial email and WhatsApp message were sent to the study population on April 11, 2022, requesting their participation in the survey. The email and message contained a link to the survey. In addition, a letter stating the study’s objectives and the participant’s rights was presented in the email before participants could respond to the survey. All responses were anonymous and de-identified. Additionally, the contact information of the principal investigator was provided for any concerns or questions. Finally, to maximize the response rate, one follow-up email was sent to unfinished respondents on April 21, 2022.

Qualtrics software automatically compiled descriptive percentages for statistical analysis by survey responses. Microsoft Excel 2019 and Qualtrics

were utilized for graphs, table creation, and basic descriptive statistics.

3. Results

3.1. Response rate

A total of 110 participants were identified with 86 responses. Most responders (84%) have taken care of patients who traveled abroad or feel knowledgeable about it. The survey ended at this point for the surgeons who explained no experience with it. Sixty-five spine surgeons (76%) completed the survey.

3.2. Reason for patients traveling abroad

The patient's perception of the local system has been chosen as the top one (52%) reason for patients traveling abroad for spine surgery, while the complexity of the case (26%) and the opportunity for tourism (37%) occupied the second and third place, respectively. "Status symbol" and lack of timely access to care locally were placed in the fourth and fifth positions, respectively (Figure 2).

3.3. Destination and funding for traveling

The top three selected destinations for spine surgery were Germany (31%), the USA (23%), and Egypt (16%) (Figure 3). The patients and their families were chosen as the most influential entity where the patients travel for care, while government health agencies occupy the second. Forty-five percent of the responders believe that most patients are sponsored when they travel abroad, while 23% believe funding is equally split between self-funded and sponsored (Figure 4). Hospital and surgeon's reputations were chosen as the most likely factors and

recommendations, and cost as the less likely factors for patients to select their destination of choice (Figure 5).

3.4. Patient–doctor relationship and quality of care

Although the quality of care that the patients received abroad was considered fair (49%) or good (31%), most of the surgeons feel that the communication between the local surgeon and the treating surgeon abroad is poor (72%). Regarding the communication and access between the KSA patients and the surgeon/hospital that provides treatment abroad, it was also considered poor by 52% and fair by 33% of the responders. Once the patient receives treatment abroad, most KSA surgeons (54%) do not consider that they are less likely to see or provide further treatment to that patient (Figure 5).

3.5. Suggestions that can enhance the clinical care and experience of spine patients

The majority of KSA surgeons (95.38%) would instead attend to redirect patients to local surgeons than recommend they go abroad for spine surgery. We also examined their view on strategies to enhance spine patients' clinical care and experience through an open-ended question. Spine surgeons from KSA suggested that better communication with the patient and between colleagues (15 %) and changes to the local system to improve the patient's perception of the local care (17%) are key factors in enhancing local clinical care. On second thought, KSA surgeons proposed that outcomes and quality of care indicators for patients treated abroad (8%) and specific referral centers (6%) with bi-directional relationships with surgeons abroad are necessary to enhance patients' experience if they decided traveling abroad for spine care.

Table 1. Survey questions.

Question 1	Have you taken care of patients who traveled abroad to undergo spine surgery, or do you feel knowledgeable in this area?
Question 2	Based on your experience, what are the main reasons patients travel abroad for spine surgery from The Kingdom of Saudi Arabia? Please rank in order 1 to 5 (1 being most likely, 5 being least likely)
Question 3	Select the top 3 countries where you think most patients are traveling for spine surgery outside the Kingdom of Saudi Arabia (PLEASE SELECT ONLY 3 CHOICES)
Question 4	Do you think most patients are sponsored or are self-funded when they travel abroad for spine surgery?
Question 5	How would you rate the communication between physician/surgeon locally and the treating physician/surgeon abroad regarding the care of patients before or after surgery?
Question 6	How would you rate the access/communication that patients have with the surgeon/hospital that provided treatment abroad once they return to Saudi Arabia?
Question 7	What factors are important for patients traveling abroad for spine surgery in selecting their destination of choice? Please rank in order 1 to 5 (1 being most likely, 5 being least likely)
Question 8	Which entity has the most influence on where patients travel for their care? Please rank in order 1 to 3 (1 being most likely, 3 being least likely)
Question 9	Do you think surgeons in the Kingdom of Saudi Arabia are less likely to see or provide further treatment for patients who have surgery abroad?
Question 10	How would you rate the quality of surgical spine care patients receive abroad?
Question 11	Do you attempt to redirect patients to other qualified surgeons locally before recommending they go abroad for spine surgery?
Question 12	What additional suggestions or concerns do you have (or have seen) that can enhance the clinical care and experience of patients traveling abroad from KSA for spine surgery

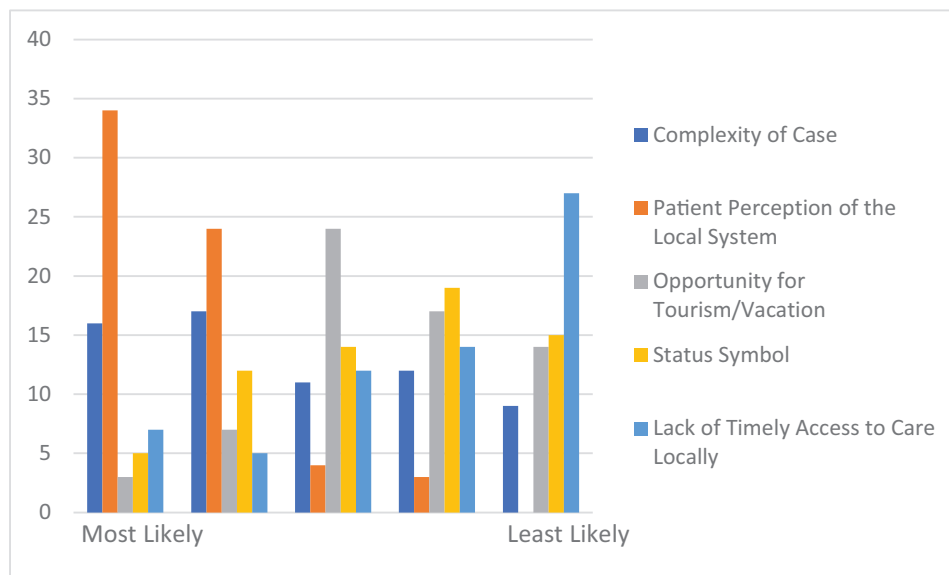


Figure 1. Ranking of the reason why patients from Saudi Arabia travel abroad for spinal care.

4. Discussion

Business development is prevalent in the international patient health services space in certain countries and leading medical centers (8–14). The insights and opinions of local treating physicians and surgeons have been mainly overlooked. This is one of

the only studies we are aware of that directly surveyed local surgeons on the practice of outbound surgical spine care.

Although there is a lack of data on patient flow, revenues, experience, and cost of patients traveling abroad for spine surgery, this study describes the most highly frequented medical travel destinations,

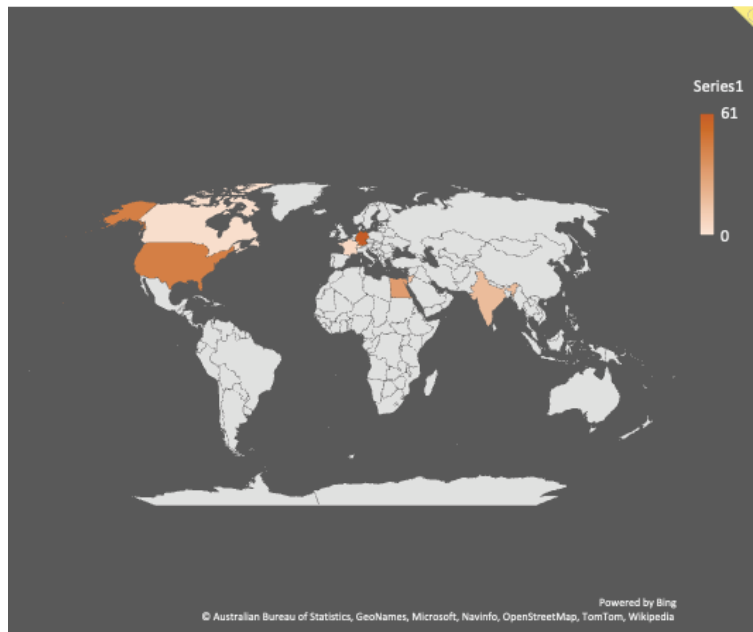


Figure 2. Artistic rendering showing the ranking of countries where most patients from Saudi Arabia are traveling for spinal surgery.

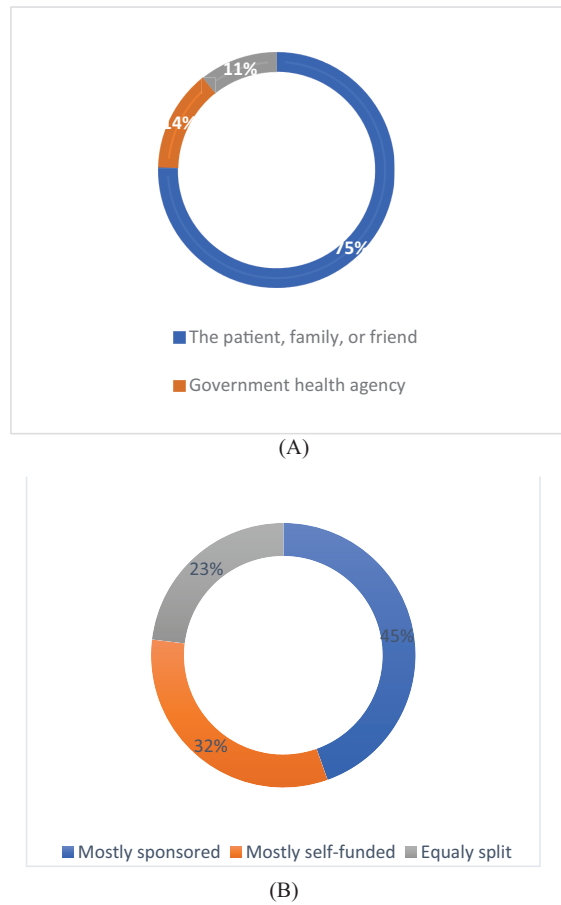


Figure 3. (A) Most influenced entities for choosing destination abroad, (B) Patient resources.

the motivations and experience of KSA patients traveling abroad for spine surgery from a local spine

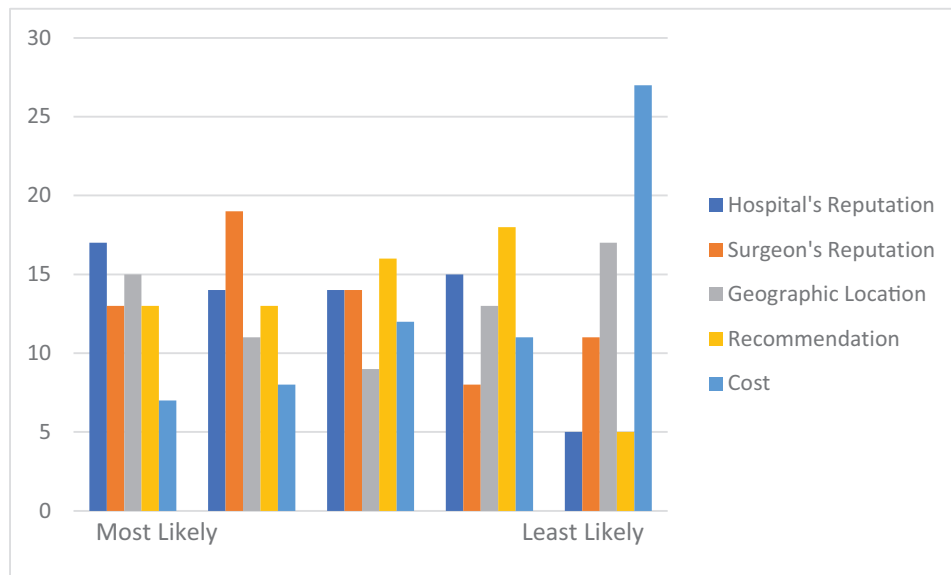


Figure 4. Ranking of factors influencing the destination of choice.

surgeon experience and perspective (3, 12, 13, 15). The majority of KSA spine surgeons in this survey (84%) have taken care of patients who traveled abroad or feel knowledgeable about this subject matter. This highlights that many patients do travel abroad for care. Interestingly, most surgeons find the “overseas” care is acceptable or good at best, confirming the belief among responders that local care is virtually as effective in many instances.

It is not surprising that the US and Germany are the top destinations for medical travel from the KSA (4, 11, 12). This is true for spine care but is likely accurate for all medical services (9, 13, 16–19). There is little empirical evidence to guide best practice on providing cross-border patient care, so it is reasonable that most surgeons believe that communication with the treating hospital/physician/surgeon is poor (9). There is a potential opportunity to improve this, leading to better outcomes and patient experience (5, 8, 18). One of the recurrent comments from local surgeons surveyed involves better awareness and education locally to highlight the significant capabilities of the local surgical teams.

The medical destination industry is certainly an interesting and nuanced one. Bertowitz and Flexner

were the first to analyze patients’ role in choosing a place to be treated and postulate the patients as “consumers that make health care choices” (21). Patients invest effort in acquiring information, looking for high-quality care, and making a mindful decision to choose the provider that best fits their needs (12, 22). This survey answered by spine specialists showed that the patient’s perception of the local system, the complexity of the case, and the opportunity for tourism in that order are the main reasons for patients traveling abroad. Patients are willing to pay a high cost if traveling overseas may reassure a world-class medical service (23, 24). It is based on the patient’s perception that developed countries will offer a better quality of care and innovative medical procedures (8, 13, 18). This contrasts with other countries where the main drivers for patients to travel abroad are cost-related or the unavailability of health services in the home country (11, 12).

The government on both sides, local and abroad, plays an important role in incentivizing and supporting medical tourism. Forty-five percent of the responders believe that most patients are sponsored when they travel abroad for spine surgery. A continued rise in traveling patients from KSA

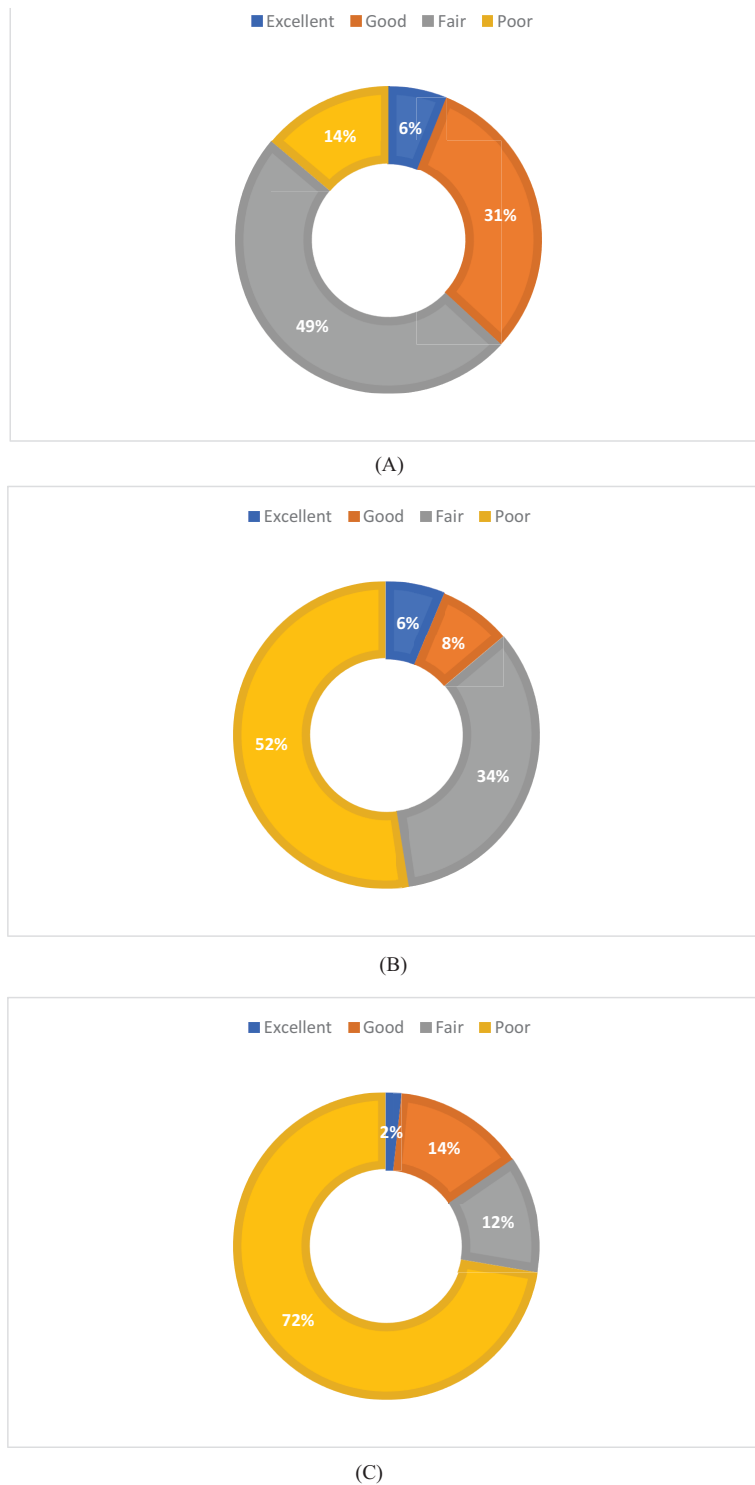


Figure 5. (A) Quality of care received abroad, (B) Communication between patient and surgeon/hospital abroad, (C) Communication between stakeholders.

and sponsored by the government may increase the local health expenditure (15). The Maldives, for example, spends US\$65 million annually on patients traveling abroad for the consumption of healthcare

and has implemented a particular policy to subsidize treatment abroad when it is not available in the home country (11). Conversely, Germany and USA are the largest importers of medical care worldwide,

and India is ahead in Asia (4, 11, 12, 25, 26). Among Arabic countries, Jordan and Egypt are leaders in health tourism, receiving thousands of patients from abroad with cost-based and differentiation strategies to attract them (25).

Although its cultural background seems relevant for KSA patients, in this survey, the factors affecting their destination decision and the places chosen harmonized with those found in global literature (5, 21). The hospital and surgeon's reputations were the most likely factors, while recommendations and the cost were the less likely factor for patients to select their destination of choice. This may explain why the United States, Germany, and India have taken the first positions in place destinations and, in some way, countered their cultural disparity and geographic distances probably by using their hospital reputations, renowned spine surgery services, and differentiation strategies as resources for attracting international patients.

Finally, there is not always a rational reason for patients' choices, and it is based mainly on a complex interplay between patient and provider or destination characteristics (4, 21, 22). Spine surgeons from KSA emphasized that better communication with the patient and between colleagues and changes to the local system to improve the patient's perception of the local care are key factors to enhancing local clinical care. Bi-directional relationships with surgeons abroad, specific referral centers, and outcomes and quality of care indicators are necessary to improve patients' experience if they decide to travel abroad for spine care (20).

5. Study limitations

Although we obtained a high response rate, this work is subject to selection bias as in all the survey-based studies. Perhaps, those surgeons with experience and strong opinions were more likely to

complete the survey. There is a need for more research to appreciate the implications of patient migration for spine care.

This study provided valuable information about KSA spine surgeons' experience and insight into this relevant topic despite limitations. In addition, our study could contribute to the development of changes in the local system and better communication between local colleagues and colleagues abroad.

6. Conclusion

This study highlights the need to engage local physicians in the conversation involving destination services. While most Saudi surgeons surveyed consider the care abroad acceptable for their patients, the vast majority have identified a gap in communication among treating physicians, local physicians, and patients. Many have also suggested a need for better education and awareness locally to improve the perception of the local capabilities.

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None.

Conflict of Interest

None.

Authors' Contribution

AAB contributed to the conception and design of the study. MJC, JMO-B, and RCC collected the study data. All authors read, reviewed, analyzed, and approved the submitted version of the manuscript.

References

- [1] Baeesa S, Maghrabi Y, Bajoh S, Bajammal S. Assessing the evolution and level of evidence of spine surgery research in Saudi Arabia. *J Health Spec* 2018; 6(2): 52.
- [2] Johnson TJ, Garman AN. Impact of medical travel on imports and exports of medical services. *Health Policy* 2010; 98(2–3): 171–177.
- [3] Loh CA, Triplett RE. International accreditation, linguistic proximity, and trade in medical services. *Soc Sci Med* 2019; 238: 112403.
- [4] Runnels V, Carrera PM. Why do patients engage in medical tourism? *Maturitas* 2012; 73(4): 300–304.
- [5] Al-Amin M, Makarem SC, Pradhan R. Hospital ability to attract international patients: a conceptual framework. *Int J Pharm Healthc Mark* 2011; 5(3): 205–221.
- [6] Nchl.org. Accessed May 24, 2022. <https://www.nchl.org/wp-content/uploads/2018-2019>
- [7] Imf.org. Accessed May 24, 2022. <https://www.imf.org/en/Publications/WEO/Issues/2022/04/19/world-economic-outlook-april-2022?adlt=strict>
- [8] Connell J. Contemporary medical tourism: Conceptualisation, culture, and commodification. *Tour Manag* 2013; 34: 1–13.
- [9] Noree T, Hanefeld J, Smith R. Medical tourism in Thailand: A cross-sectional study. *Bull World Health Organ* 2016; 94(1): 30–36.
- [10] Lautier M. Export of health services from developing countries: The case of Tunisia. *Soc Sci Med* 2008; 67(1): 101–110.
- [11] Suzana M, Walls H, Smith R, Hanefeld J. Understanding medical travel from a source country perspective: A cross sectional study of the experiences of medical travelers from the Maldives. *Global Health* 2018; 14(1): 58.
- [12] Crooks VA, Kingsbury P, Snyder J, Johnston R. What is known about the patient's experience of medical tourism? A scoping review. *BMC Health Serv Res* 2010; 10(1): 266.
- [13] Foley BM, Haglin JM, Tanzer JR, Eltorai AEM. Patient care without borders: A systematic review of medical and surgical tourism. *J Travel Med* 2019; 26(6).
- [14] Fottler MD, Malvey D, Asi Y, Kirchner S, Warren NA. Can inbound and domestic medical tourism improve your bottom line? Identifying the potential of a U.S. tourism market. *J Healthc Manag* 2014; 59(1): 49–63.
- [15] Panteli D, Wagner C, Verheyen F, Busse R. 'Know before you go': Information-seeking behaviour of German patients receiving health services abroad in light of the provisions of Directive 2011/24/EU. *J Health Serv Res Policy* 2015; 20(3): 154–161.
- [16] Alghamdi S, Nabi Z, Alkhafaji D, Askandrani S, Abdelsalam M, Shukri M, et al. Transplant tourism outcome: A single center experience. *Transplantation* 2010; 90(2): 184–188.
- [17] Allam N, Al Saghier M, El Sheikh Y, Al Sofayan M, Khalaf H, Al Sebayel M, et al. Clinical outcomes for Saudi and Egyptian patients receiving deceased donor liver transplantation in China. *Am J Transplant* 2010; 10(8): 1834–1841.
- [18] Al-Shamsi HO, Al-Hajeili M, Alrawi S. Chasing the cure around the globe: Medical tourism for cancer care from developing countries. *J Glob Oncol* 2018; 4: 1–3.
- [19] Karuppan CM, Karuppan M. Changing trends in health care tourism. *Health Care Manag (Frederick)* 2010; 29(4): 349–358.
- [20] Qolipour M, Torabipour A, Faraji Khiavi F, Saki Malehi A. Assessing medical tourism services quality using SERVQUAL model: A patient's perspective. *Iran J Public Health* 2018; 47(1): 103–110.
- [21] Bertowitz EN, Flexner WA. The market for health services: Is there a non-traditional consumer. *J Health Care Mark* 1980; 1(1): 25–34.
- [22] Victoor A, Delnoij DMJ, Friele RD, Rademakers JJDJM. Determinants of patient choice of healthcare providers: A scoping review. *BMC Health Serv Res* 2012; 12(1): 272.
- [23] Tay A. Assessing competition in hospital care markets: The importance of accounting for quality differentiation. *RAND J Econ* 2003; 34(4): 786–814.
- [24] Bulatovic I, Iankova K. Barriers to medical tourism development in the United Arab Emirates (UAE). *Int J Environ Res Public Health* 2021; 18(3): 1365.
- [25] Siddiqi S, Shennawy A, Mirza Z, Drager N, Sabri B. Assessing trade in health services in countries of the Eastern Mediterranean from a public health perspective. *Int J Health Plann Manage* 2010; 25(3): 231–250.
- [26] Dang H-S, Huang Y-F, Wang C-N, Nguyen T-M-T. An application of the short-term forecasting with limited data in the healthcare traveling industry. *Sustainability* 2016; 8(10): 1037.