

US sanctions and its consequences on orthopedic surgery on Iran

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Research

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Abstract

Background

Health and medical services are fundamental demand in civilized nations. Sanctions have always been an obstacle for development, even in health and medical topics, since they aim to reduce the financial and economic power of a country, and their impacts on medical and health systems in the objected country are on inevitable. It is well-established that sanctions contribute to a shortage of supplies in medical devices, and instruments. The shortage of the unique resources of newly-introduced medical and surgical devices prohibits surgeons from implementing novel techniques, which are known to improve medical care service quality. However, considering the application of the sanctions, these products will not be accessible for Iranian patients, and less safe and more complicated approaches will replace them.

Results

In this study we surveyed opinion of 32 orthopedic surgeons about effect of sanction on orthopedic surgery. Our result showed in upper limb surgeries high cost of equipment have more answers between question, although in lower limb surgeon Changing of method due to lack of facilities with worse results than standard method has more frequency between answer. Both results indicate that sanction made more difficult feasibility of orthopedic surgeon.

Conclusions

We believe several actions are needed to take place in the current situation by the international organization, to stop this unreasonable and illogical sanction, to prevent devastating results of them.

Background

Access to health and medical services is considered as a fundamental requirement in human societies and is one of the most primary bases of the human right. It is necessary for each country, regardless of its development rate to provide everyone with circumstances to benefit from standard health and medical care, and all governments are required to respect and protect this right, and to endeavor to build foundations needed for the acquisition of specific standards in health care disciplines.[1] On the other hand, the standard medical and health services depend on various factors, including financial support, access to worldwide databases and scientific knowledge, and the capability of providing up-to-date medications and instruments to improve quality of the medical care.[2]

However, in today world village, sanctions are considered as a danger, and obstacle on the way goes through the development and prosperity of the nations, particularly on health and medical topics. Sanctions are forced not to target medical and health issues directly by spectator organizations such as

the United Nations. [3]. In the case of Iran, although the ban appears to have focused on the economy of Iran and the government, in practice, affected all aspects of Iranian life, including their health sector [4]. On this basis, massive sanctions against Iranian financial institutions can endanger the flow of imports, since banks and foreign suppliers are ending commerce connections with Iran [4, 5]. economic sanctions are associated with increased inflation and the depreciation of the Iranian currency, that subsequently raises the price of the medications and surgical instruments in Iran[6].

Therefore, it is impossible to consume and benefit domestic products, while it would be challenging to obtain necessary and sufficient standards. Thus, an inevitable effect of the economic sanctions is that the purchase of health care supplies needs a currency transaction, which has been complicated and unstable between Iran and the developed countries.

Result

As shown in Fig. 1, in upper limb surgeries high cost of equipment have more answers between question, although in lower limb surgeon Changing of method due to lack of facilities with worse results than standard method has more frequency between answer. Both results indicate that sanction made more difficult feasibility of orthopedic surgeon. (Fig. 1)

Discussion

One of the most definite manifestations of the effects of the new US sanctions can be seen in the anxiety of the orthopedic surgeons. The authorities are deeply concerned about the provision of essential surgical instruments and prosthesis since their importing has been ceased through terminating the cooperation of international companies and banks with Iranian importers[7]. On the other hand, after sanction application, several actions have been taken to diminishing the effects of the sanctions and neutralizing their destroying and catastrophic consequences in Iran, although the unfair and unacceptable nature of the sanction are not debatable and undeniable. On this basis, several scientists, clinicians, and experts have developed and introduced novel surgical techniques and unique modifications to current gold standards, not only to make procedures feasible and affordable without specific instruments, but also supporting patients to suffer least possible from the disastrous effects of the illogical and unacceptable sanctions. During recent years, Iranian orthopedic surgeons tried to adjust to the latest and novel surgical techniques and materials, not only to having concurrency with international standards but also to decrease postoperative complications of the patients and improve the surgical outcomes. Whereas, recent studies and randomized clinical trials carried out in Iran were primarily aimed to discuss and compare the advantages and disadvantages of the new instruments, prosthesis, and materials with conventional techniques and methods. Previously, Iranian surgeons have announced several novel techniques in the literature in order to replace the Western instruments with domestic instruments or alternative techniques to provide better outcomes in various clinical cases, which have been always challenging for all physicians worldwide, such as humerus fracturs treatment, distal humerus bone graft, radius fractures, femoral fracturs, etc. [8–13]. In instance, an Iranian study carried out on patients who

suffered complex distal humerus fracture, and authors used K-wires to reconstruct and restabilize the surface of the bone [11, 14]. However, considering the application of the sanctions, these products will not be accessible and easy-to-afford for Iranian patients, that might lead to less safety and more complications among patients, and they will be obstructed from receiving the best cure for their diseases. Also, this dilemma will deter surgeons from future studies on new topics in Iran that can significantly harm the scientific community and scientists.

Conclusion

As a result, many medications and medical devices are either unavailable in the Iranian market or do not hold the same quality, or are not affordable due to the decrease of Iranian's currency value, and the majority of the patients are currently struggling with the side effects of alternative procedures and scenarios.

Material And Methods

In this study we used a questioner inquire about effect of sanction on orthopedic surgeries and give to 32 orthopedic surgeons that in work in tertiary hospital in Iran. Questioner contain six question include: unable to do due to lack of facilities, failure to do due to overly expensive facilities, failure to do due to inadequate or in complete facilities, worse results due to the use of lower quality equipment, Changing of method due to lack of facilities with worse results than standard method and Changing of method due to lack of facilities with same results than standard method. We evaluate 32 surgeries the routinely done in our referral centers and need equipment and facilities. In our survey we divide subspecialty of orthopedic surgery in four group which can you see in Table 1.

Table 1
list of orthopedic surgery

Specialty	Number of surgeons	Surgeries
Lower limb (Hip, Knee Ankle surgeon)	11	Bipolar Hip Arthroplasty
		Total Hip Arthroplasty Primary (routine)
		Total Hip Arthroplasty Primary (difficult)
		Total Hip Arthroplasty revision
		Total Knee Arthroplasty primary (routine)
		Total Knee Arthroplasty primary (difficult)
		Total Knee Arthroplasty revision
		C-clamp for pelvic fracture
		Specific Proximal femur Nails
		Retrograde Nail
		Intramedullary lengthening device
Upper limb (hand, shoulder surgeon)	6	Radial Head Arthroplasty
		MP Arthroplasty
		IP Arthroplasty
		Hunter Rod of Tendon
		Nerve and Tendons Repair and Recons
		Wrist Arthroplasty
		Elbow Arthroplasty
		Shoulder Arthroplasty
		Different Size of Hook Plate
Pediatric (pediatric and spine surgeon)	7	Pediatric DHS, DCS plates
		ilizarov insertion
		TSF insertion
		Growing Rod for Spine
Common *	24	Anatomical Plate for Fracture and Osteotomy
		Bioabsorbable Pin and Plate
		Anchor Suture Insertion

Specialty	Number of surgeons	Surgeries
		Custom Made Arthroplasty
		Routine Plate, IM nail
		Headless Screw
		Allograft
* Surgeries that done by upper, lower and pediatric surgeon		

Declarations

Acknowledgements

Not Applicable.

Authors' contributions

All authors contributed in designing the study. MHN wrote the primary draft of proposal and all authors contributed in preparing the final draft. ARF, SS and LOZ executed the actual research and data collection. SS conducted the primary data analysis and all authors contributed to finalize it. MHN and RSK prepared the primary draft of article and all other authors helped in finalizing the manuscript. The author(s) read and approved the final manuscript.

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Availability of data and materials

Data are available upon request through corresponding author.

Ethics approval and consent to participate

The Ethics Committee at Tehran University of Medical Sciences approved the study and protocol data collection. All subjects provided written consent to participate in the study.

Consent for publication

This manuscript has no individual personal data.

Competing interests

The authors declare that they have no competing interests.

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Figures

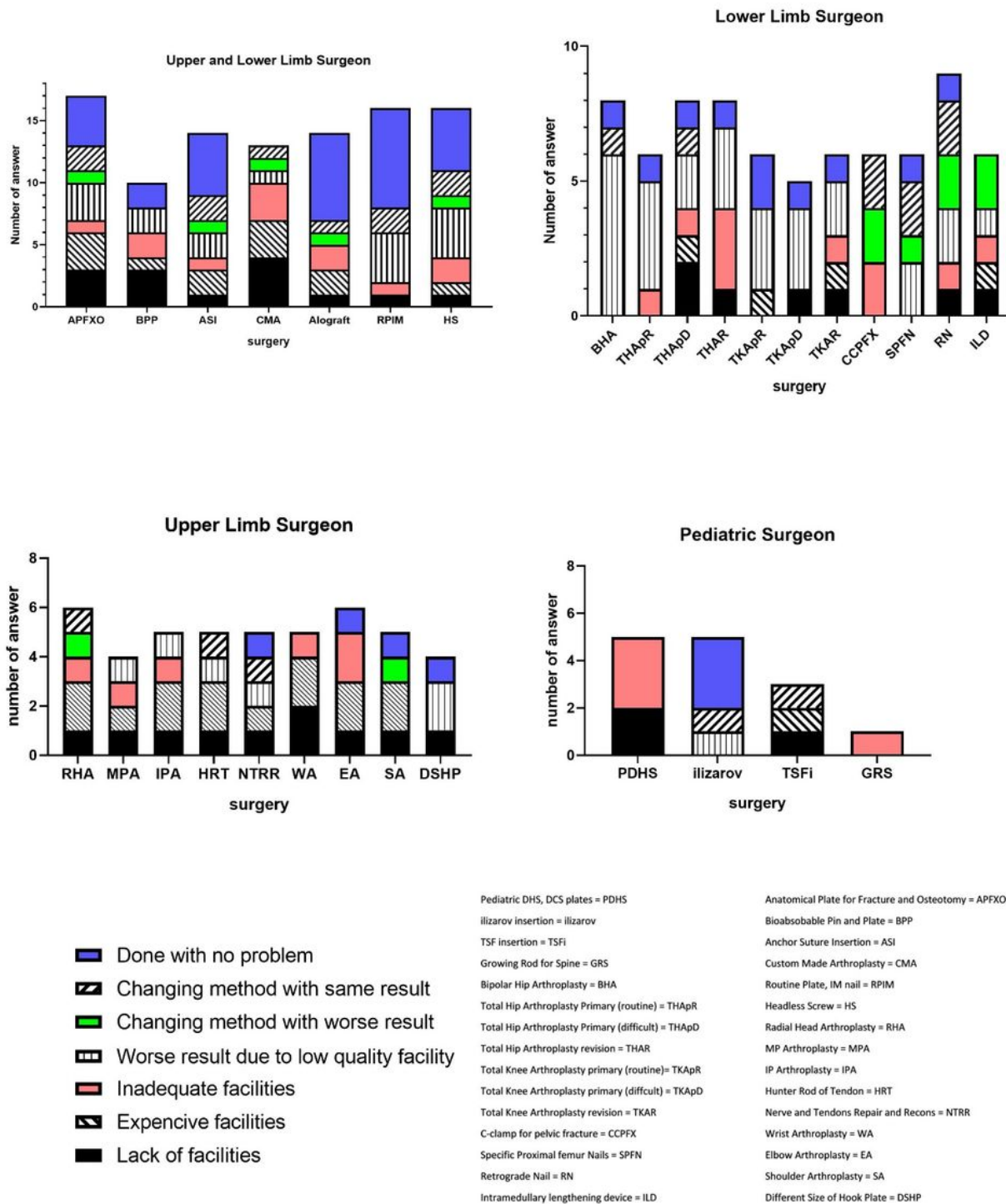


Figure 1

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