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ORIGINAL ARTICLE

Challenges of the Relative Value Unit Experience in Iran: A Qualitative Study

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ABSTRACT

Background: The Relative Value Unit (RVU) is a value scale and plays a key role in the physician reimbursement system. The health sector has faced challenges such as providers' dissatisfaction, income disparities, and reduced service quality which is said to be due to improper RVUs. Always there are debates about it. This study aims to identify the challenges of the RVU experience in Iran from the perspective of the service providers, payers and, policymakers.

Methods: This qualitative study was conducted in 2020. Data were collected from November 2019 to February 2020. Thirty experts participated in the study and were categorized into four groups: insurance organizations' managers, surgeons, health economists, and health policymakers. Focus Group Discussions and semi-structured interviews were held to collect data. Content analysis was conducted to analyze data.

Results: According to the expert, the challenges of RVU in Iran are classified into five scopes. Financial, payment, macro-organization, regulation, and persuasion scope. Each scope's result was categorized into main themes and relevant sub-themes.

Conclusions: The RVU has an important impact on the health system, provider behavior, and even patients. Paying attention to required infrastructures, decision- makers' conflict of interests, decrease the Ministry of Health and Medical Education's authority, and expanding the active role of involved organizations to increase their commitment to the successful implantation of RVU is necessary.

Keywords: Relative Value Unit, Challenge, Expert opinion, Qualitative study, Iran.

BACKGROUND

Increasing health care expenditures led to introducing a new method of physician reimbursement by Harvard in the 1980s (1). This reimbursement system which was called resourced based relative value was based on the Relative Value Unit (RVU) of the provided services and applied by Medicare for the first time (2). In the other words, RVU is a measurement indicating the resources used to provide a service (3). It includes three components of service: 1) physician's work, 2) practice expense and 3) malpractice cost (4). The importance of RVU is because of its cornerstone role in physician reimbursement (5). Each surgery is defined by a CPT code, any code has a specific relative value in the RVU table that determines the value of the service, and consequently, according to weighted value, the amount of payment to a surgeon is determined (6, 7). Iran also used the Harvard RVUs as a reimbursement method in the health sector, after translating the American RVU book. The latest edition of the RVU book was localized and approved finally by specialized scientific associations despite many insurance organizations' resistances. The order of new RVU book implementation was announced by Vice President in 2014 (8). Although the main purpose of the RVU book was to create equity and reduce the income gap between different medical groups (9). Today, not only it has not been achieved, the new localized book has failed to establish interdisciplinary justice and this was a starting point for new challenges in Iran's health system. A study conducted by Jafari et.al shows that physicians' income gap in just one hospital was reported up to thirty times in Iran. (10) Income inequalities between different specialty groups working in the health sector have caused dissatisfaction. (11) Subsequently, it has also affected the educational structure of the medical sector. Although studies have been conducted to identify RVU challenges, the necessity of this issue causes the research team to take a new look at identifying RVU challenges from the perspective of the service providers, payers and, policymakers.

METHODS

The RVU is a multi-dimensional subject in the health system and, various organizations are involved in determining it to a comprehensive identification of challenges related to Iran's RVU based payment the expert groups selected from these: health service providers (surgeons), health insurance organizations as payer, policymakers in the Ministry of Health and Medical Education (MoHME) as a governance function of the health system and health economist as health financing and payment mechanism experts which play a neutral role between the payer and provider.

Sampling and recruitment: Participants with different positions who are involved in the RVU were selected to achieve heterogeneity in the study. It helped to understand the views and perspectives of various groups. Sampling was purposive and, to find more participants a snowball model was used (12, 13). We contacted Potential

participants through telephone and, a brief explanation about the aim of the study was given and invited them to participate in the study. Four of the 40 invited experts did not reply and, two stated that despite their interest in participating in the study, they are busy and do not have enough time to do. Finally, according to qualitative studies literature, 34 experts participated in the study (14).

Data collection: We performed a literature search to identify related RVU challenges before writing the interview guide. Keywords searched in ten databases (Google Scholar, PubMed, Embase, Scopus, Ovid, Web of Science, Cochrane, ProQuest). Search terms included "RVU challenges" "RBRVS challenges" "Relative Value Scales" "physician opinion" "Surgery reimbursement mechanism" "physician payment model" "RVU based compensation" "RVU payment mechanism" "Expert opinion on RVU". After that, the questions were determined by research team consensus. Data were collected from November 2019 to February 2020 through focus group discussions and semi-structured interviews.

Focus Group Discussion (FGD): Two separate FGD meetings were held with payers and providers to achieve the purposes of the study. The first one was a meeting with experts and managers of three major insurance organizations in health, which pay by RUV Social Security Organization (SSO), Iranian Health Insurance Organization (IHIO), and Armed Forces Insurance (AFI). The second one was a meeting with the surgeons who work in hospitals and earn by RVU based payment. Every meeting lasted about two hours and, a total of sixteen people attended the FGD. All the focus group participants had carried out some research in the intended field and had at least five years of experience. Questions were posed during the sessions by the coordinator. The coordinator also strived to include all the participants in the discussions.

Interviews: Semi-structured interviews were conducted with key informant participants who were unable to attend FGD for any reason. Eighteen face-to-face interviews were done. The participants were invited to discuss RVU challenges in Iran's health system. Each interview took about sixty minutes and the place of the interview was their office. The interviews continued until saturation. The interviews were recorded and the researcher took notes simultaneously.

Data analysis: In the present qualitative study an inductive approach was applied, and the Content analysis method was used (15). All of the FGD voices and interviews reported were transcribed on the paper, then two researchers separately, studied the transcriptions line by line and coded them in the margin of the text. Themes highlighted and similar items were merged; then, regarding their relevancy, sub-themes were categorized into main themes according to research team's consensus.

Validity and reliability of data: Pilot interviews with experts were done and, accordingly, the literature of the questions modified to their points of view to determine the validity of questions. The research team provided a summary of the interviews and meetings and, the participants approved the accuracy of the data. Triangulation was achieved according to the consensus of the research team about themes.

Ethics: An informed consent form, asked for their permission to record their voice, was handed to the participants before the FGDs and interviews. The participants were made sure that information will be confidential and only for research purposes. Instead of the participants' names, a Numerical code was used. Participation in this study was voluntary and, the participants could withdraw whenever they wanted.

RESULTS

Participant profile: FGD and interview participants' demographic characteristics are summarized in Table 1. The majority of the participants were male (82.35%). The age range of the participants was between 34 to 68 years.

Table 1: Demographic information of the participants

Variable		Number	Percent
Sex	Female	6	17.65
	Male	28	82.35
Age	30-40	7	20.58
	41-50	11	32.35
	>51	16	47.07
Specialty	Health Economy	5	14.70
	Health policy	5	14.70
	Health services management	5	14.70
	Orthopedic surgery	2	5.88
	General surgery	2	5.88
	Obstetrics And Gynecology surgery	2	5.88
	Ophthalmic surgery	2	5.88
	General physician	5	14.70
	Cardiac surgery	2	5.88
	Urology surgery	2	5.88
	Orthopedic surgery	1	2.94
	Infectious disease specialist	1	2.94
Work experience	5-10 years	8	23.54
	11-20 years	15	44.11
	More than 20 years	11	32.35

According to the experts, the RVU challenges are categorized into five scopes; include financing, payment, macro-organization, regulation, and persuasion.

The results of each scope were classified into main themes. Themes and sub-themes are illustrated in Table 2.

A. **Financing scope:** One of the most important health system functions is financing, which collects, accumulates and, allocates money to meet individuals' health needs (16). According to the experts' point of view RVU challenges in financing scope were categorized into two main themes; purchasing and pooling.

A.1. Purchasing: Experts believed that "Since insurance companies are the main financial suppliers in the health system, the strategic purchasing approach is important to RVU implementation and reimbursement physicians subsequently. Traditional (passive) purchasing approach causes challenges in the reimbursement system. Strategic purchasing could predict individuals' needs, paying to providers, increase access and justice in the health system. Despite all strategic purchasing advantages, insurance companies use the traditional approach still and, it overshadows the function of relative value through payment to providers". (Participant No 3)

A.2. Pooling: According to the experts' point of view "while the financial burden of the health transformation plan was on RVU more, most of the anticipated and costed resources were allocated to issues other than RVU, and Financing for RVUs were ignored. There wasn't any attention to the sustainability of resources to implement RVU, at the adjusting time, and it results in many problems in RVU correct implementation." (p. 10 &12)

Table 2: Main themes and sub-themes

Scope	Main themes	Sub-themes
Financing	Purchasing	Disregard to strategic purchasing and use passive purchasing approach
	Pooling	Inattention to the sustainability of financial resources in adjusting and implementing RVUs
		Custodian role of MoHME to manage resources instead of insurance organizations, Contrary the upstream policies and law
		Ignorance anticipating the RVU implementation's needed resources in the health transformation plan
Payment	Tariff	The Influence of anesthesia, surgery and internal tariffs on each other
		Different tariffs in public and private sector
	Payment system	Nonperformance based payment system
		Inattention to the physicians' performance evaluation based on indication
		Multiple payment system
Macro- organization	Structure	A passive role of insurance organizations in adjusting RVUs
		The physician oriented structure and the excessive power of physicians in the health system
		Focus on procedures and operations in Iran health system
		Dependence of professional and technical part of the RVU
	Infrastructure	Lack of integrated information systems and limited internet bandwidth
		Absence of the assessment system to review the principles and prescribed considerations of RVU
		Lack of mechanisms for physician's accreditation
		No mechanism to control physicians induction demands
	Decision making	The influence of health minister specialty and his/her decision-making team on RVUs
		The Unfamiliarity of the surgeons in RVU council with all operations in a specific specialty
		Conflict of interest to policymakers
		Lobby and negotiation instead of regarding principals to RVU
	Stewardship	Weakness in governance role of MoHME
		No scientific principles to determine the RVU book
		Disregard to the indigenous conditions and demand for services and ignorance of patients
Regulation	Documentation	No attention to equity in intra-disciplinary and interdisciplinary RVUs
		Differences in the RVU concepts in different organizations
	Rules	Use of nonaligned rules by insurance organizations about RVUs
		No transparent guidelines to do operations
		Weak organizational capacity for rule implementations and weak rule enforcement
Persuasion	Behavior	Focus on monetary tools to motivate physicians by the health system
		Mismatching of work performed and code write-in the health records
		Increasing the level of expectation of physicians
		The surgeons' willingness and temptation to set a high value for common operations

B. Payment scope: The second category of RVU challenges according to the experts, is related to payment scope, which describes the payment systems and how to pay to providers. Tariff and payment system are the two key themes that arise from the challenges in payment scope.

B.1. Tariff: "The RVU tables are known as a starting point to adjusting medical tariff, it should be considered to identify the RVU challenges. Unfortunately, in the current health system anesthesia, surgery, and internal tariffs are very influenced by each other and, their relative value does not determine independent and based on known criteria, it is better to say the RVU of any field is determined in competition with others and no logical. Also, different tariff in the private and public sectors is seen which made a big challenge in the health system despite, physicians' same treatment, same RVU determinants such as risk, time, and skill. Unmotivated physicians and low-quality care in the public sector are its consequences.'' Experts expressed (p. 6& 7)

B.2. Payment system: The experts asserted "As regards the relative value of services have not been determined logical and scientific in Iran, some surgeons are reluctant to perform heavy and high-risk surgeries, so the system applies multiple payments to motivate the surgeon and compensate in payments. It is observed that Salary, fee-for-service, and per capita are used to pay to a surgeon at the same time its result of low amount RVU in some surgeries. Multiple payment systems cause corruption and make it difficult to control."(p.21)

"Lack of pre-operative indication control systems especially in small towns due to patients' shortage cause challenge. Some surgeons, to receive more, perform induced surgery with high RVUs and do not operate based on indications."(p.5)

"Although it's obvious that age, patient's comorbidities and, its disease's stage have a considerable influence on surgeon's effort in the operating room, it does not consider in the RVUs. Deficiencies in the RVU's calculation have cause payments not to be fair and commensurate with

performance, in other words, payment to physicians is not performance-based." professionals asserted. (p.28)

C. Macro- organization scope: Macro-organization was the third scope of the RVU challenges. The results were categorized into four main themes: structure, infrastructure, decision making and, stewardship.

C.1. Structure: Based on the experts' opinion "Insurance companies play an active role in determining and implementing RVU around the world, but they are passive in Iran and just act as a payor in the health system. The passive role of insurance organizations in the process of determining RVU and small voting rights of them in RVU adjusting council cause insurance organizations have not enough commitment to implement the RVU properly." (p.11)

"The structure of the health system is such that focuses on procedures are more and their relative value are much more than other services, therefore, the health system drives physicians to perform surgeries with high RVU unintentionally. It leads to induced demand for surgeons in the operating room. The wrong structure let surgeons perform several procedures in the operating room for just a patient to increase the income sometimes" experts asserted. (p.23)

Experts opined that "Dependence of technical and professional components of the RVU in Iran, causes a serious problem in the health system. MoHME has not been able to measure technical components of surgeries accurately yet, therefore the amount of the technical component is based on the percentage of the professional component. Failure to determine the exact amount of professional component will increase the amount of technical part and thus increase the costs of the health system." (p.14)

C.2. Infrastructure: Experts argued that "infrastructures such as physician and patients' integrated information systems, unlimited internet bandwidth, physicians' accreditation mechanism, the evaluation systems to study the principles and reassessment of the RVUs are necessary to implement RVU properly, at the moment none of them exist." (p.33)

C.3. Decision making: Policymakers have a critical role in determining the RVUs in each country, Based on experts' point of view "Most of the policymakers and senior executives at MoHME, work as a surgeon in the operating room at the same time. They benefit from their own political decisions and, make decisions based on personal or colleagues' interests, they try to determine their specialty RVUs amount more than other specialties. The Health system decision-makers benefit from their decisions and, there is a conflict of interest to policymakers in the current health system."(p.2)

The experts stated that "Relative value system depends a lot on health minister specialty. Because of the minister's excessive power of the decision-making team to determine RVU with negotiation instead of scientific principles, the efforts of specialized medical groups to select a minister among their colleagues have become obvious recently. Therefore, according to the minister's specialty, the different sections of RVUs book is considered" (p.16)

Also, "Most of the surgeons who have seats in the Relative Value Council are surgeons with managerial positions and less operate in the operating room, so they are not familiar with all surgeries in that particular specialty completely. It makes it impossible for them to determine the values of different services rationally and scientifically, its results incompatibility of the determined RVU with the real value of that service." (p.24)

C.4. Stewardship: Experts' declared "Many of RVU challenges in Iran arose from this fact, MoHME is a service provider, a service purchaser, and a service supervisor, this multidimensional task causes weakness in the governance role of MoHME. RVU determination should be based on the scientific formula and society's conditions, but it doesn't happen because MoHME is beneficiary." (p.8)

"Depending on stewardship role of MoHME, One of the most important tasks is to determine RVUs correctly and pay to providers based on the local conditions, demand for a service, and patient's need, unfortunately, it is determined without any attention to these. Although the patient is the most important client in the health system, maybe one needs surgery, but, because of the low relative value of that service, any surgeon does not tend to operate that, the patient will be wandered in the system and, his/her benefit is not taken into account" (p.13)

D. Regulation: A part of RVU challenges were related to regulation scope, Documentation and rules are this scope's two main themes.

D.1. Documentation

Experts argue that

"Many of the critical specialties, such as internal medicine and pediatrics, have low RVUs. Today, these specialties are needs and, most of the society diseases are in these areas.

Despite, it is expected the society' needs in mentioned specialties will grow in the coming years, physicians are reluctant to graduate in such specialties now. Interdisciplinary and intra-disciplinary equity gained little consideration in adjusting the RVU book.

Perhaps, if the relative value of services in the above specialties is determined fairly, the main part of the country's health problems of would be solved. Injustice is also seen in different services of the same specialty." (p.1)

"Another RVU challenge is applying multiple and different definitions of RVU's basic principles in various organizations, such as the insurance organization and the Ministry of Health. It seems, to better RVU implementation organizations use a common framework of concepts at the adjusting time. Any organization interprets the concepts and definitions in its interests." (p.19)

D.2. Rules: The experts asserted "Due to insurance companies diversity, there are differences in terms of implementing RVU, which is related to the lack of integrated rules. Lack of integrated rules and, differences in insurance organizations make it possible for insurance companies to shirk responsibility in payments. It would be better Central Insurance Agency pass law and announce to insurance organizations on how to enforce RVU and monitor them."(p.15)

"The lack of transparent guidelines for some surgeries and non-necessity to follow guidelines in other cases cause surgeons to act arbitrarily. The weakness of regulatory and

monitoring systems and the lack of supporting rules for proper RVU implementation is an important challenge." (p.22)

E. Persuasion: The last group of RVU challenges was persuasion. Specialists opined that "Implementation of such policies like Health Transformation Plan increases physicians' income. As a result of this policy, physicians' expectations of the health system increased, surgeons are reluctant to operate low-value surgeries and are inclined to perform high-value operations more. On the other hand, sometimes the written operation codes in the patients' records are in mistake by surgeons intentionally and the surgeon deliberately writes higher codes to achieve more." (p.4)

DISCUSSION

This study showed the RVU challenges in Iran are in five scope; financing, payment, macro-organization, regulation, and persuasion. Although Most of these challenges are related to the macro-organization, experts believed that MoHME's excessive incumbency in all affairs led to a diminished role in influential organizations such as insurance companies which are one of the main stakeholders in the health systems, therefore, their commitment to proper RVU implementation is undeniable. If the roles of stakeholders are considered in a plan, it will be successful (17). The inconsistency in the MoHME plans, such as Health Transformation Plan makes a challenge on the RVU, it used financial incentives to motivate physicians. Increasing the physicians' incomes suddenly raised their expectations and result in physicians refusing to operate low-value surgeries and, mismatching of work performed with written code in the patients' health records happened intentionally. A study found that policymakers' decisions, such as the Health transformation Plan and focus on procedural surgeries led to the doubling of tariffs for physicians and put a heavy burden on insurance companies. (17)Timely payment to physicians has become a critical dilemma in the health system because of inattention to required financial resources in the RVU adjusting time. According to experts' opinions due to shortcomings in the RVUs, the quality is not defined, physician payments based on RVU tables do not consider the quality and physician performance, which may result in provide poor quality services and operate surgery without an indication. A study conducted shows that in the current RVU system, physician compensation is not in compliance with outcomes quality, patient experience, and patient safety (18). MoHME should focus on its stewardship and monitoring role, authority delegation help insurance organizations to be more committed to adjusting and implementing the RVU. Pass complementary and supporting rules during the adjusting is necessary for proper implementation.

Another challenge that was expressed in this study is the feeling of injustice by surgeons in adjusting the RVU book, which leads to frustration, lack of motivation, and impact on the Medical education system finally. On the other hand, physicians who have seats in the Relative Value Council are not a good representative of that specialty. In general, due to their managerial positions, they are less familiar with all surgeries. It makes it impossible for them to behave equitably in determining RVU and cause dissatisfaction. The studies conducted in the US and Canada show that the political lobby in updating and determining RVU is undeniable and needs to manage (19). Another study by Miriam J. Laugesen found because of a great portion of surgeons in the RUC, there is an inequity between GPs and surgeons' incomes and, the disparity has widened into a permanent income gap (20). Woo-Keun Kwon et al. showed that since the president of the neurosurgery association in Korea is an expert in brain neurosurgeons, therefore, increasing brain neurosurgeries' RVU is much more than spinal neurosurgeries and, it's because decision-makers are beneficiaries with their decisions (21). Seymour Katz and Gil Melmed's study show that the current RVU system prefers procedures to cognitive visits; therefore, some specialists may be discouraged and frustrated. The RVU discrepancy works as an impediment to both community and the academic-practitioner (22). The structure of RVU is such that the time spent on cognitive services is less valuable than procedural services (2). Experts also argued that job position abuse and distort the value of the services for the benefit of themselves or their colleagues by decision-makers cause inequality and satisfaction of physicians and disrupt the discipline of the educational structure. The result of a study done in Korea illustrated that there is still a debate between different medical specialties over the unfair value structure (21). Sadeghi et.al concluded that the professionals in the health system is not completely satisfied with the RVU's book, they thought the new book has failed to establish interdisciplinary justice(9) It is expected that the health systems will face a shortage of specialist staff in some critical specialties in the next few years (23).Sigsbee shows that physician's income gap in the United States made it hard to attracting volunteer physician for some medical specialties, therefore, it is necessary to pay attention to RVU as the basis for physician reimbursement system (24) Of course, injustice is inherent in the structure of RVU. Although this study focused on the challenges of relative value in Iran, it is necessary to note some of the RVU's challenges are inherent. Recent research noticed that times of operations in which RUC use, are not as actual as the surgeons believed and surgeries times are estimated more or less. As a result, the existing RVU method can include inaccuracies due to the surgeon's work calculation (25)

According to experts, the RVUs do not differentiate between acute and elective surgeries, while it is obvious, acute surgeries require time and surgeon's effort more. Unfairly reimbursement for acute care surgery can discourage trainees from pursuing as acute care surgeons or accepting emergency general surgery calls, possibly leading to a shortage of acute care surgeons (23, 26). The evidence shows that physicians' dissatisfaction can result in induced demand and illegal payments (27). Specialists declare RVU does not reflect the complexity of surgery well. Risk factors, age, and comorbidities are not considered in RVU. This neglection affects the surgeons' willingness to operate complex surgeries. Due to the lack of a proper referral system in Iran, the patient has to go from one office to another to find a surgeon who is willing to operate this operation. This straying in the health system,

which is caused by the lack of proper RVU determination, exacerbates the patient's disease condition and finally imposes costs on the health system. The study conducted by Douglas Orr et al shows that RVU cannot reflect the complexity of any procedures, or surgeries with long follow-up by the surgeon, which may be needed in orthopedics (2). Another study in urology showed that the relative values in this specialty do not reflect the complexity and condition of the patient well and need to be reconsidered (28).

A review study in neurosurgery found, although there is not any comprehensive agreement, some experts believed the RVU reimbursement system is based on work volume, and the quality of service, patients' outcomes are no considered. The current RVU has not regard empathy and, the relationship between provider and the patient, the surgeons' evaluations are based on quantity only. They stated that if the changes occur in the current system, both the patient and the neurosurgeons will benefit more (29). Even though patients are an important part of the health system, their demands, and satisfaction about the quality of received care are not considered in current RVUs. Jay Pershad and et.al emphasize that, due to the importance of patients in the health system, it is important to pay attention to patient satisfaction with the services received in RVUs (30). Also, a study conducted in 2013 showed that patients' attention and satisfaction with the quality of received services should be considered in the RVU, a thing that seems to have been forgotten in the RVU (31) Finally, infrastructure is required for the proper implementation of each plan, which is also necessary for RVU implementation. Lack of infrastructures such as unlimited internet bandwidth to access Electronic Health Records, Electronic prescription, and Health Information Systems make some is one of the RVU implementation's challenge.

CONCLUSION

The RVU has an undeniable impact on the health system, provider behavior, and even patients. Today, along with changes in technology and society's needs, surgeries are getting faster and more complexity. The quality of health care is now more important than before and, the role of satisfaction of service providers in the health system is obvious. Now, after three decades, it seems is time for a total review of the relative value system. Developing the required infrastructures in the health system helps to establish justice, increase satisfaction, and improves cost control. Despite RVU's revisions every five years, there are still challenges. Paying attention and trying to solve them is a positive step towards increasing efficiency in the health system. The RVU determination and implementation should be process-oriented and perform within the specific framework to increase transparency. Using the appropriate RVU system by the country's conditions, differences in socioeconomic context, health education, health indicators, health expenditures, and purchasing power and, the burden of disease is necessary for each country.

Conflict of interest: All of the authors declare have no financial and non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

Limitations: There are few limitations in this study; first, this study focused on identifying the challenges of the RVU and would not address the solutions. Although the report offers an understanding of these experts' viewpoints and experiences, their perspectives do not necessarily reflect all surgical specialties and experts.

REFERENCES

1. Laugesen MJ. The resource-based relative value scale and physician reimbursement policy. Chest. 2014;146(5):1413-9.
2. Orr RD, Sodhi N, Dalton SE, Khlopas A, Sultan AA, Chughtai M, et al. What provides a better value for your time? The use of relative value units to compare posterior segmental instrumentation of vertebral segments. Spine J. 2018;18(10):1727-32.
3. Kwon S. Payment system reform for health care providers in Korea. Health Policy Plan. 2003;18(1):84-92.
4. Hsiao WC, Braun P, Dunn D, Becker ER. Resource-based relative values. An overview. Jama. 1988;260(16):2347-53.
5. Commission MPA. Report to the Congress: issues in a modernized Medicare program. . MedPAC, editor. Washington, DC2005.
6. Abbey DC. Healthcare Payment Systems: Fee Schedule Payment Systems: CRC Press; 2010.
7. Benoit MF, Ma JF, Upperman BA. Comparison of 2015 Medicare relative value units for gender-specific procedures: Gynecologic and gynecologic-oncologic versus urologic CPT coding. Has time healed gender-worth? Gynecol Oncol. 2017;144(2):336-42.
8. Mohammad Aghajani, Alireza Olyaeemanesh, Saeid Manavi, Mani Yusefvand, Ali Maher, Ali Shahrami, et al. The Process of Reviewing the New Book on the Relative Value of Health Services and Localization of the Coding System in the Third Step of the Health Transformation Plan, with a Focus on Its Wide Impact on the Health Market of the Country. Hakim Health Systems Research Journal. 2017;20(3):164-74.
9. Sadeghi M, Damroodi M, Sinaei Rad A. The study of the Rate of Users Satisfaction with the Book of "Relative Value of Health Services" in 2015. Paramedical Sciences and Military Health. 2016;11(2):8-15.
10. S B, A AS, A R, A OM. payments of physicians employed in public and private hospitals after modification of surgical and invasive services tariffs. hakim research journal. 2012;15(1):38-43.
11. Moradi-Lakeh M, Vosoogh-Moghaddam A. Health Sector Evolution Plan in Iran; Equity and Sustainability Concerns. Int J Health Policy Manag. 2015;4(10):637-40.
12. Given LM. The SAGE Encyclopedia of Qualitative Research Methods. 2008.
13. Noy C. Sampling Knowledge: The Hermeneutics of Snowball Sampling in Qualitative Research. International Journal of Social Research Methodology. 2008;11(4):327-44.
14. Sandelowski M. Whatever happened to qualitative description? Res Nurs Health. 2000;23(4):334-40.
15. Bengtsson M. How to plan and perform a qualitative study using content analysis. NursingPlus Open. 2016;2:8-14.
16. Organization WH. The world health report 2000: health systems: improving performance: World Health Organization; 2000.
17. Doshmangir L RA, Moaeiri F, Akbari Sari A. . Effect of proposed changes of relative values of different specialists medical tariffs on payment weight of specialties and health system costs. Hakim Res J. 2011;14(1):1-9.
18. Saver BG, Martin SA, Adler RN, Candib LM, Deligiannidis KE, Golding J, et al. Care that Matters: Quality Measurement and Health Care. PLoS Med. 2015;12(11):e1001902.
19. Katz SJ, Zuckerman S, Welch WP. Comparing physician fee schedules in Canada and the United States. Health Care Financ Rev. 1992;14(1):141-9.

20. Laugesen MJ, Wada R, Chen EM. In setting doctors' Medicare fees, CMS almost always accepts the relative value update panel's advice on work values. Health Aff (Millwood). 2012;31(5):965-72.
21. Kwon WK, Kim JH, Moon HJ, Park YK. The Korean Spinal Neurosurgery Society ; Are We Reimbursed Properly for Spinal Neurosurgical Practices under the Korean Resource Based Relative Value Scale Service? J Korean Neurosurg Soc. 2017;60(1):47-53.
22. Katz S, Melmed G. How Relative Value Units Undervalue the Cognitive Physician Visit: A Focus on Inflammatory Bowel Disease. Gastroenterol Hepatol (N Y). 2016;12(4):240-4.
23. Ramirez JL, Gasper WJ, Seib CD, Finlayson E, Conte MS, Sosa JA, et al. Patient complexity by surgical specialty does not correlate with work relative value units. Surgery. 2020;168(3):371-8.
24. Sigsbee B. The income gap: specialties vs primary care or procedural vs nonprocedural specialties? Neurology. 2011;76(10):923-6.
25. Hayon S, Deal A, Tan HJ, Namboodri B, Gan Z, Wood C, et al. Is the relative value of surgeon effort equal across surgical specialties? Surgery. 2020;168(3):365-70.
26. Schwartz DA, Hui X, Velopulos CG, Schneider EB, Selvarajah S, Lucas D, et al. Does relative value unit-based compensation shortchange the acute care surgeon? J Trauma Acute Care Surg. 2014;76(1):84-92; discussion -4.
27. Johnson SE, Newton WP. Resource-based relative value units: a primer for academic family physicians. Fam Med. 2002;34(3):172-6.
28. Gan ZS, Wood CM, Hayon S, Deal A, Smith AB, Tan H-J, et al. Correlation of Relative Value Units With Surgical Complexity and Physician Workload in Urology. Urology. 2020;139:71-7.
29. Satarasinghe P, Shah D, Koltz MT. The Perception and Impact of Relative Value Units (RVUs) and Quality-of-Care Compensation in Neurosurgery: A Literature Review. Healthcare (Basel). 2020;8(4).
30. Pershad J, Whitley M, Herman M. Visit-level acuity and resource-based relative value unit utilization in a pediatric emergency department. Pediatr Emerg Care. 2006;22(6):423-5.
31. Stecker EC, Schroeder SA. Adding Value to Relative-Value Units. New England Journal of Medicine. 2013;369(23):2176-9.