

Explaining the Factors Affecting the Relative Value of Services and Their Role in the Performance-Based Payment System in Teaching-Therapeutic Centers in the Six national-Wide region of the Country

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Abstract

Background: Pay for performance (P4P) is one of the most important issues in the health systems that promotes clinical quality, productivity, and patient satisfaction.

Objectives: The current study aimed to identify and explain factors affecting the relative value of services and applying them in P4P in Iranian teaching-therapeutic centers.

Methods: The current study was performed following a thematic analysis framework with an interview technique. The study population consisted of P4P experts in the six national-wide region of the country. Participants were selected using the purposeful and gradual sampling technique. Sampling was stopped upon reaching data saturation (i.e. 11 participants). Lincoln and Guba's evaluation method was used to determine reliability and validity. Qualitative data were analyzed using Nvivo version 12.

Results: In total 13 basic themes and two organizer themes (i.e. technical and professional components) were identified regarding the factors affecting the relative value of health care services. Seven important elements in determining the professional component of the relative value of services included required time to perform the service, stress, knowledge, skill, experience, risk, as well as difficulty and complexity of the service.

Conclusion: The model developed in the present study can be used to determine the total relative value of each service and setting tariff of medical services provided by health staff, including nurses.

Keywords: *pay for performance payment, relative value scale, teaching hospitals*

Introduction

Based on the previous studies, human resources are the main component of each strategy and policy, as well as utilization of resources. The success or failure of an organization depends entirely on its human resources [1]. The payment system, which is referred to as the new system of services or the system of rights and benefits, is one of the functions of the human resources management system that is related to all payments to staff within a given period [2].

One of the tools for improving the quality of performance is pay for performance (P4P), which emphasizes performance in response to the need

for transition from the traditional payment systems that are based on position. Linking payment to performance is associated with increased motivation and incentive to work, which paves the way for recruiting and maintaining human resources. P4P links financial rewards to the performance of individuals, groups, or organizations or a combination of these three [3].

Considering that financial incentives are one of the most important factors affecting organizational and individual behaviors in the health sector and have several effects on health organizations and quantity and quality of provided

services, the powerful effects of motivations on buyer and seller's behavior should be considered. In addition, a provider's payment system, which affects both price and quantity of provided services, is one of the tools for controlling and limiting the cost of public health expenditures in high-income countries, which has been emphasized by health system administrators [4]. In different countries of the world in order to guide the activities of health staff to increase their motivation and avoiding low-quality services, different types of P4Ps have been used. According to this process, in most countries of the world, based on services provided by staff, "valuations" are performed for various parts of hospitals. The P4P is based on tariff codes extracted from these categories [5,6]. In Iran, similar to other countries, medical tariffs have been developed (i.e. relative value book for physicians). Until recently in Iran, the reimbursement of inpatient services was based on the U.S. tariff system and for nearly 20 years the relative values were the backbone of the provider's payment system. The relative values were compiled in a book titled "California". However, in the translation and compilation of this book, in order to explain the tariff in the country, non-compliance with some guidelines has led to fundamental mistakes. So that applying the annual coefficients over time has led to a significant gap in reimbursement of different medical groups [7]. After the implementation of the Health Transformation Plan (2014), the relative value system of the country for medical professionals was fundamentally revised, based on the principles derived from international sources. However, for other health professionals, such as nurses, despite the existence of legal requirements, no specific action has been taken to

determine the tariffs and valuation of services. Setting tariffs of health services should be based on scientific principles and the real value of health care services (i.e. prime cost), rather than the interests of stakeholders and the bargaining power of various professionals [8]. Valuation of various clinical services based on principles other than established concepts and available resources will cause undesirable effects on the provision of clinical services [1]. The relative value of each service indicates resource costs needed to provide health services [9]. According to the overall policies of the health system, announced by the Supreme Leader, as well as the requirements of the HTP, the establishment of a P4P system is necessary in Iran. Besides, no independent research has investigated factors and variables affecting the relative value of services in our country, which means determining the relative value of services for different health professionals, such as medical groups, is solely based on the translation of Western reference books. In other words, there is no specific scientific and local framework for determining the relative value of services of other paramedical groups such as nurses. Hence, the current study aimed to, firstly, identify and explain factors affecting the relative value of services, secondly, investigating variables affecting the providers' payment system (i.e. professional component), and, thirdly, determining tariffs in order to apply in the PPP in Iran.

Methods

The current study is qualitative in terms of methodology (content analysis with interview technique) and developmental-applied in terms of objectives.

Table 1: Study population

Organization	Frequency
Professionals and experts in the 6 national-wide region (managerial, financial, therapeutic)	11
Experts working in the Iranian nursing organization	2
Tariff experts working in the Medical Council of the Islamic Republic of Iran	4

This study was conducted from July 2019 to August 2020. The study population consisted of 17 experts in the 6 national-wide region working in medical universities, of which 15 were selected based on the competency evaluation questionnaire.

The sampling was stopped upon reaching data saturation (i.e. 11 participants). The interviews lasted from 45 to 75 minutes. Participants were selected gradually [10]. That is, the coding and analysis were performed simultaneously with interviews. Hence, each interview was transcribed

and analyzed before performing the next one in order to make necessary adaptations [11]. We also emphasized the diversity of interviewees and presenting the results of each interview to a diverse group of experts [12]. In addition to presenting the summary of the report to a variety of experts including university professors, researchers, and key informants, the results of each interview and the summary of the interviewee's report were provided to the interviewee for final confirmation. Also, to increase the quality of the interviews, the competency evaluation questionnaire was used. The following criteria were used to determine the competence of experts :

- 1 -Having necessary information about relative value and tariff;
- 2- work experience related to the

field of tariff and relative value (at least 5 years); 3- Willingness to participate; 4- Related university degree; and 5- Participating in specialized courses. Data were collected using semi-structured interviews, with an open-ended question and several follow-up items. The study methodology is described in the following [13]:

Step 1: Designing questions; Step 2: Sampling (related experts); Step 3: data collection; Step 4: Coding and analysis (to avoid false theoretical saturation, coding was done gradually). These four steps were repeated until data saturation. Lincoln and Guba's evaluation method was used to determine reliability and validity [14], which contains four criteria of reliability and validity; credibility, transferability, dependability, and Confirmability [15] (Figure 1).

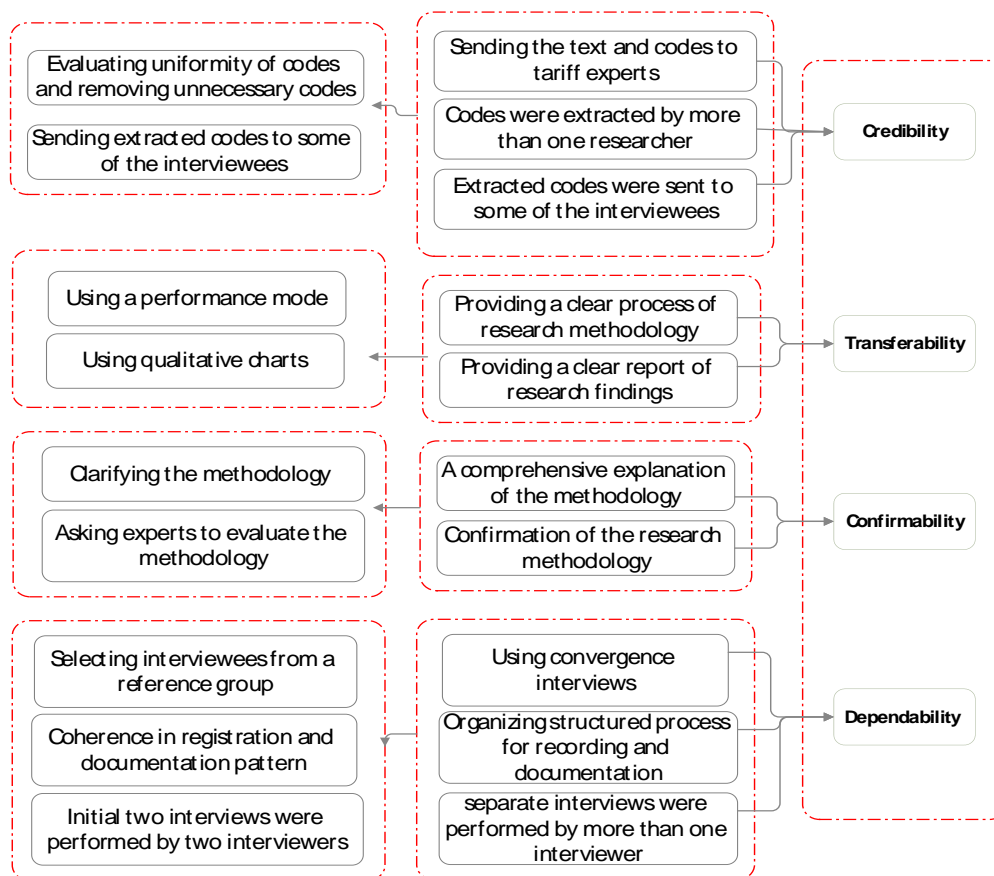


Figure 1: Lincoln and Guba evaluation method

In the first step, the following measures were taken to ensure Credibility, which is equivalent to validity in quantitative researches. Initially, the transcript and codes were sent to several tariff specialists to ensure the appropriateness of the

extracted codes. Then, some researchers were asked to extract codes from transcripts to ensure the relative uniformity of the codes. Eventually, codes were sent to several interviewees to confirm their accuracy. Afterward, transferability was

evaluated, which is equivalent to external validity in quantitative studies, that is generalizability of the results to other areas and fields. In other words, this process aims to allow the generalizability of the research findings. In order to ensure confirmability, a complete description of the research stages, including data collection, analysis, and extraction of themes, was provided by experts in order to provide the possibility of an initial audit. Also, the study methodology was given to several technical members of the research team, as well as some university professors, to confirm the accuracy of the research methodology. In the present study, using methods such as convergent interviews (selecting some interviewees from a reference group using purposeful sampling, starting interviews with open-ended questions, learning the basic method of interviewing, designing an interview map, comparing initial interviews), coherence in recording and writing, and using two interviewers for the first two interviews, we tried to ensure the reliability of the results of the interviews. For this purpose, all interviews were audio-recorded and transcribed. Conceptual coding was used in the form of systematic text analysis to formulate the initial pattern. Descriptive tests were used to

assess the demographic characteristics of experts. Besides, Nvivo version 12 was used to manage qualitative data. It worth noting that participants were ensured about the confidentiality of both personal and organizational information, particularly during the coding process. All interviews were performed following ethical principles

Results

The descriptive analysis, using competency evaluation, showed that nearly 80% of the experts were familiar with the relative value and almost all of them were familiar with the tariffing health care services using relative value. In addition, all experts had work experience of more than 10 years. Also, 72% of them had a history of participating in relative value courses, for more than half of the experts the total duration of participated courses ranged from 21 to 60 hours. Most of the experts were aged from 36 to 46 years. Concerning the education degree of interviewees, 36.4% had a Ph.D. in accounting-management, 27.3% Ph.D. in medicine, 9.1% were general practitioners, and about 27% had a master's degree. Some of the findings are presented in Table 2.

Table 2: Sample of interviews analysis

Row	Basic themes	Examples of Interviews	Frequency
1	Stress	Although it declines the surgery time but is associated with other risks (M4)	9
2	Experience	For sure, the experience is important. For instance, there should be a difference between a physician with 15 years of experience and those who newly started their carrier (M2)	18
3	Time	Another important point is the standard time for providing the service (M10)	14
4	Difficulty and complicity	Yes! Another important point is complicity of the surgery and the level of required skill (complicity of the service) (M9)	16
5	Level of knowledge	Another important point is the expertise and knowledge of the health professionals (M9). Another criterion is the level of effectiveness. That is, the level of knowledge (M11)	17
6	Level of risk	Certainly, I will consider the risk associated with staff. For instance, the risk that a health professional bears while providing a service (i.e. both the risk of the service itself and the risk of disease (disease risk)). I consider the risk of the surgery. For instance, what is the risk of the surgery? How much a consultation costs? How much a visit costs (e.g. the laboratory risk) (M.4)	19
7	Level of skills	Various items can contribute, some of which are out of control (from the perspective of the organization). For instance, education level, work experience, level of skill, personal experience (M7)	22

In total 215 primary codes, 13 basic themes, and 2 organizer themes (i.e. professional and technical

components), as well as 1 inclusive theme (relative value), were extracted. Concerning

factors that influence the price of services (i.e. basic themes), stress, experience, time, difficulty and complexity, knowledge, risk, and skill level were identified. These factors played an essential role in determining the direct human resources costs (i.e. professional component) in determining the relative value of health care services and converting it to the tariff, as the basis for the P4P system. Concerning non-direct costs of health services (i.e. technical component), which is considered as the second organizer theme of the relative value of services, six influential components were identified, including costs related to equipment maintenance, equipment

depreciation, capital gains, supportive services, equipment repairs, and maintenance of construction facilities. Although these variables do not play a direct role in P4P, they are directly involved in determining the basis for calculating the relative value of all services. As shown in diagram 1, from the perspective of interviewers, among factors affecting the professional component of services, the most emphasis was placed on skill, followed by risk and experience. Hence, when determining the relative value of medical and diagnostic services, this point should be considered.

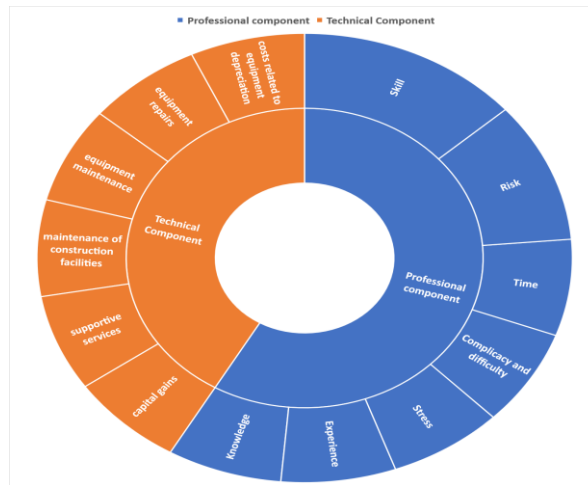


Diagram 1: Factors influencing the relative value

The network of themes is provided in diagram 2. This network, based on a specific trend, systematize basic themes (codes and key points of the text), organizer themes (themes derived from

combining and summarizing basic themes), and inclusive themes (excellent themes about the interpretation of the principles governing the text as a whole).

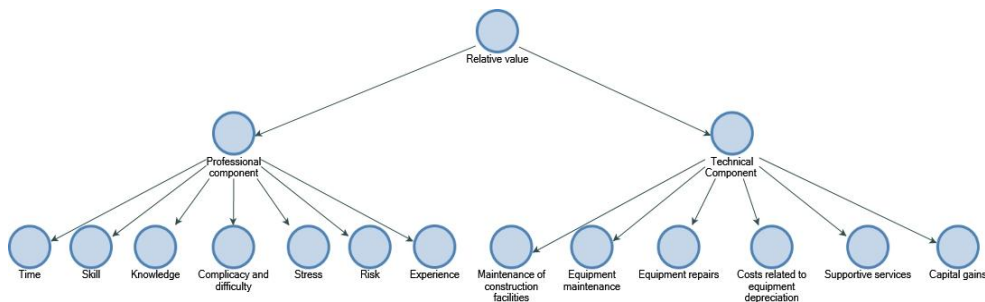


Diagram 2: network of themes

Discussion

The current study aimed to identify and explain factors affecting the relative value of health care

services in order to set tariffs and applying them in the P4P model in teaching-therapeutic centers of the six national-wide region. According to the

results, the main theme (inclusive) of the relative value of health care services consisted of two organizer themes, including professional and technical components. The relative value unit indicates the resources required to provide services. Based on the findings, seven factors affect the professional component of relative value, including job stress, work experience, required time, difficulty and complexity of service, the level of personal knowledge needed to provide the service, risk, and required skill, which should be considered when determining the relative value of services. The six influential factors were as follows: costs related to equipment maintenance, equipment depreciation, capital gains, supportive services, equipment repairs, and maintenance of construction facilities, as factors affecting the determination of indirect costs (i.e. technical component) of the relative value of each service, which were effective in determining the relative value of each service, but did not have a direct role in P4P.

The findings of the present study are consistent with those reported by some previous studies, including Jackson et al. (2020) [16], Berenson et al. (2016) [17], Bayati et al. (2011) [18]. However, as mentioned in the findings section, there are some differences. For instance, the importance of the individual experience factor is higher when dealing with issues related to the health sector. As we know, the main responsibility of medical centers is to save lives; Therefore, any negligence in this field will have irreparable consequences, which cannot be ignored. The skill and experience of people working in these centers are of crucial importance and considering this issue is highly important not only for the payment system but also concerning performance evaluation, particularly regarding its consequences. Also, the risk of health services, both for patients and providers, is very important, and not paying attention to this point in the compensation system can have adverse effects on the course of treatment. As reported by Khorramzi et al. (2019) [19], in a study on "evaluating the satisfaction of operating room students from their field of study and their views on the future of the job", and Adib et al. (2017)[20], in a study entitled "interest in the field of study and affecting factors: the viewpoint of students of Kashan University of Medical Science", it is reported that

physicians and medical staff tendency to provide risky services, concerning consequences, is declining, as there is no significant difference in their tariff rates. This issue even is obvious in the tendency to continue education in high-risk and stressful fields as students of medical residency (i.e. there is a declining trend). This finding is in line with the findings of the present study. Nix and Szostek (2016) [21] reported that the complexity of the work and time required to provide medical services should be considered when determining the relative value of service and determining tariffs, which is in line with the findings of the present study. Obviously, the longer the time required to provide a service, the higher should be the relative value, particularly the professional component. This is especially true for non-invasive health care services that require more attention and time. Furthermore, six factors affecting the technical component of the relative value of services were also identified, which are key for determining the relative value of services. However, they do not play a direct role in P4P. The results of this section are in line with those reported by Laugesen et al. (2014) [22], which showed that the relative value scale is equal to the sum of total direct and indirect costs.

Conclusion

In the present study, we performed semi-structured interviews with university professors and P4P experts, and a total of 215 primary codes were extracted, which were categorized into 13 basic themes (composed of two organizer theme of professional and technical components) and eventually an inclusive theme related to the relative value of services was identified. The findings indicated that the pattern extracted from relative value factors to valuate all medical and para-medical services, particularly nursing services, does not compose a service valuation and tariff system. It is necessary to mention some limitations of the present study, including the lack of practical and valid scientific studies on the valuation of medical and para-medical services in Iran.

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Conflict of interest

The authors declare no conflict of interest

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