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Identification of components and indicators for a multi-level performance evaluation model for social security organization healthcare centers

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Abstract

The performance of healthcare centers is a multifaceted and complex phenomenon that requires meeting the expectations and satisfying various key stakeholders at different levels of these service organisations. The main objective of this paper is to present a ranking model for social security healthcare centers using a multi-level performance evaluation. This applied research has a mixed approach. The data collection tools are library studies and questionnaires, and the data were analysed using a one-sample t-test and exploratory factor analysis. The multi-level performance evaluation model for social security hospitals was reviewed through a questionnaire survey, and the themes of individual, group, and organizational levels were identified, which examine various aspects of individual and organizational performance. Simultaneous attention to the performance of employees, organizational units, and the entire organization in the performance evaluation of healthcare centers can lead to a more comprehensive understanding. It can help rank and improve the effectiveness of performance improvement programs. The findings of this research can be used as a model for other healthcare centers.

Keywords: performance, performance evaluation, multi-level performance, healthcare centers
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1 Introduction

Healthcare centers, as one of the most complex service organizations, hold immense importance and sensitivity. Patients and their companions expect safe and effective services along with responsible and respectful treatment at reasonable costs [67]. Since a country's ability to strengthen its healthcare system to achieve health goals largely depends on its human capital [50], the healthcare workforce must have the necessary knowledge, skills, motivation, and readiness to perform their duties to improve the quality of healthcare services [39]. One of the most important human resource processes used to facilitate training and motivation is the performance evaluation system. Studies in the field of management and organization with a conventional approach have either focused solely on the micro level (such as behavioral theories) or addressed the macro level (such as organizational theories); while the nature of organizational phenomena is multi-level. Therefore, conventional approaches, by ignoring the impact of different levels

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on each other, have not been able to analyze them correctly and accurately [19], and this incomplete and misleading interpretation can have harmful results for the organization [38]. Today, there are discussions about the dissatisfaction with existing performance evaluation systems. On the other hand, thinkers have long realized that managers are at the forefront of performance management systems and perform performance management tasks as part of their managerial duties [15]. It is also emphasized that performance evaluation procedures should be more streamlined and include regular reviews beyond traditional annual evaluations. This is especially true for healthcare centers, as one of the most complex and sensitive service organizations operating in society [45].

The increasing challenges faced by the healthcare system and the various pressures exerted on it have made performance monitoring and evaluation one of its fundamental challenges [19]. Healthcare challenges include the global nursing shortage, healthcare worker commitment, and employee job satisfaction [67]. These factors have an impact on patient care and the delivery of quality services. In general, there is limited understanding of how the performance evaluation system affects healthcare workforce management and how it can be used to improve service delivery and ultimately patient outcomes [8]. There are four fundamental problems in the healthcare performance evaluation system: contextual issues (misalignment between standards and healthcare worker duties), performance evaluation structure (subjective evaluation), evaluation process (lack of supervision by managers, unfair evaluations, and instability of evaluations), and evaluation results (inappropriate feedback). Therefore, there is a need for a model that has the necessary comprehensiveness and effectiveness to evaluate the performance of healthcare and hospital centers.

Numerous studies have been conducted on the performance evaluation of healthcare centers. However, despite this and given the vital role of hospitals and healthcare centers, research that takes a comprehensive approach to evaluate the performance of these organizations is not comprehensive and rich enough [17]. This gap is even more evident in the case of multi-level performance evaluation of these organizations, and there are far fewer studies in this area. Methodologically, a multilevel approach can provide a comprehensive understanding of the phenomenon under study. This approach analyzes the relationships between variables at least at two different levels [44].

2 Theoretical Foundations

Numerous researchers have delved into the study of organizational performance from both micro and macro perspectives, each aiming to define performance from a unique standpoint. These diverse approaches to examining organizational performance have given rise to a multitude of performance models grounded in varying assumptions and targeting different levels of analysis. For instance, Campion, Medsker, and Higgs adopting a micro-level approach, have investigated motivation, job satisfaction, and teamwork under the premise that the collective performance of individuals and workgroups leads to enhanced organizational-level performance [17].

2.1 Performance

The most widely accepted definition of performance was provided by Neely et al. [48]. They stated that organizational performance is the process of explaining the quality of effectiveness and efficiency of past actions. According to this definition, performance can be divided into two components:

1. **Efficiency:** This term describes how an organization utilizes its resources to produce goods or services.
2. **Effectiveness:** This term measures the degree to which an organization achieves its goals [6].

In simple terms, organizational performance refers to the quality of an organization's functioning. It encompasses the evaluation of how well an organization carries out its operations. This evaluation involves assessing the effectiveness and efficiency of past actions.

2.2 Performance evaluation

According to Dove and colleagues [16], performance evaluation is the process of ensuring that the organization follows its defined strategies, leading to the achievement of its goals.

Tapora et al [66] believe that performance evaluation is a process that defines and evaluates the performance of an individual or group in relation to the execution of assigned tasks, and expresses performance in terms of resource utilization through efficiency indicators.

2.3 Multilevel analysis

Several authors have lamented the division of organizational science into micro and macro divisions and the consequent lack of multilevel theory and research. This has inspired a movement towards multilevel organizational studies.

These authors argue that organizations are inherently multilevel and that research on issues such as performance appraisal, job design, training, compensation, leadership, power, participation, communication, organizational climate, technology, performance, and organizational structure should be conducted at a multilevel [16].

Therefore, performance evaluation can be done at three individual, group and organizational levels and can be done using a multi-level approach. Accordingly, individual performance is the amount of each person's contribution to achieving organizational goals. Group performance is a measure of success or action required to achieve the desired results that are agreed upon by the group and the organization. Group performance is qualitatively different from individual performance. Team performance is not a simple sum of competencies, skills and attitudes, but also how people interact with each other as a whole. Organizational performance is also the sum of results and determinants of results.

The advantage of the multi-level approach lies in the fact that it does not consider individuals, groups and organizations as separate conceptual categories, but considers them as parts of a whole, each of which is affected by another means and is also affected by it. put in other words, there is symmetry between individual and collective action [50]. Based on the above, the research question is: "What are the appropriate components and indicators for evaluating the performance of Social Security Organization hospitals at the organizational, group, and individual levels?"

3 Methodology

In this study, a systematic literature review was conducted in the first step by searching reputable databases and journals and synthesizing the relevant findings from selected studies using the Sandelowski and Barros [60] meta-synthesis framework.

Indicators were extracted from articles published in reputable domestic and international scientific databases, including Wiley, Sage, Emerald, ScienceDirect, Springer, ProQuest, Google Scholar, EBSCOhost, PubMed, and EAGLE, using the keywords "healthcare workers", "healthcare centers", and "hospitals" and searched within the timeframe of 2012-2022.

4 Findings

In the results of the search and review of various databases and search engines using the selected keywords, 1840 articles were found. However, some of these articles were duplicated across two or more scientific databases. The criteria for accepting or rejecting articles are summarized in Table 1.

Title	**Acceptance Criterion**	**Rejection Criterion**
Geographical scope	Comprehensive Studies	-
Research language	English and Persian	Other languages
Study period	2012-2022	Pre-2012
Methodology	Qualitative and Quantitative Methods, Systematic Review	Non-methodological studies
Research content	Performance Evaluation of Individuals, Teams, and Organizations in the Healthcare Sector Performance Evaluation Criteria in the Healthcare Sector	Other performance aspects
Study type	Articles Published in Journals	Personal opinions, personal websites, reports, and conferences

Table 1

After removing duplicate articles, articles with irrelevant titles to the research purpose, lack of thematic relevance of the abstract to the research, and lack of relevance of the article content to this research, 240 relevant documents were identified. Following a complete reading and note-taking of the remaining documents, an evaluation was also conducted based on the Critical Appraisal Skills programme (CASP).

The output of this stage is the selection of articles whose information is ultimately extracted and synthesized to answer the research questions. A list of these articles is provided in Table 2.

Table 2: Selected Articles for Entry into the Meta-Composition Process

researcher	ID	researcher	ID	researcher	ID
Panjaitan et al [52]	D1	nuryadin et al [50]	D20	Shojaei et al [61]	D39
Noris et al [49]	D2	Narayan et al [47]	D21	Akbarisari et al [1]	D40
Kosklin et al [31]	D3	Okoth. & Flora [51]	D22	Malekzadeh et al [41]	D41
Chmielewska et al [13]	D4	Liao et al [36]	D23	Dargahi & Darrudi [14]	D42
Amer et al [6]	D5	Pitocco & Sexton [54]	D24	vafaee-najar et al [**?**]	D43
Nabitz et al [46]	D6	Aliekperova, N [4]	D25	Jahangiri and Jahangiri [26]	D44
Ali et al [3]	D7	Hatefi & Haeri [24]	D26	Ghandehari et al [20]	D45
Amrai et al [7]	D8	Peykani et al [53]	D27	Yavari et al [68]	D46
Shortell et al [62]	D9	Lacroix J [34]	D28	Alinejad & Khalili [5]	D47
Piubello Orsini et al [55]	D10	Beheshtinia et al [10]	D29	Bahadori et al [9]	D48
Gómez-Gallego et al [23]	D11	Buttigieg et al [12]	D30	Mahmoudi et al [40]	D49
Kutlu Gündoğdu et al [33]	D12	Giovanis et al [22]	D31	Sohrabinejad et al [65]	D50
Ghasemi et al [21]	D13	Li Si et al [35]	D32	Rahimi et al [58]	D51
Jiang et al [29]	D14	Rahimi et al [57]	D33	Jalilibal et al [27]	D52
Alatawi et al [2]	D15	Lupo,T [37]	D34	Khavanzadeh et al [30]	D53
Rasi et al [59]	D16	Kounetas et al [32]	D35	Jabbari Beyrami et al [25]	D54
Berg et al [11]	D17	McNatt et al [43]	D36	Janati et al [28]	D55
Siyum,H [64]	D18	Simou et al [63]	D37		
Fatima et al [18]	D19	Raeisi et al [56]	D38		

Selected and finalized articles are reviewed multiple times to obtain intra-content findings. At this stage, the information related to each article is stated, which includes the author's first and last name, the year of publication of the article, the indicators and performance evaluation components in the treatment section that each article has referred to. An example of extracting indicators at this stage is presented in Table 3.

Table 3: Sample of extracting evaluation indicators for healthcare centers from selected articles

Row	ID	Index	Row	ID	Index
1	D6	Educational background relevance to job	6	D12	Self-awareness of strengths and weaknesses
2	D4	Occupational knowledge level	7	D46	Ability to self-regulate in different work situations
3	D4	Job performance ability	8	D34	Ability to empathize and understand the needs of patients and colleagues
4	D29	Work experience level	9	D44	Effective communication and interpersonal skills in the workplace
5	D50	Proficiency in using medical equipment,	10	D64	Flexibility and adaptability to different work environments

Then, the researcher proceeds to classify the literature after a thorough review. Each of these classifications is then further categorized into more specific classes based on its concept and semantic proximity. In simpler terms, the researcher first groups the identified indicators and then places each indicator in a specific category or concept based on its semantic and content similarity and proximity, which best represents the characteristics of that indicator. In fact, each category represents one of the components used to evaluate performance.

In order to evaluate the extracted codes and concepts, expert opinions were utilized. To calculate the inter-rater agreement between the experts during the evaluation of research concepts, Cohen's kappa coefficient was employed. This coefficient ranges from zero to one. A value closer to one indicates the highest level of agreement between the two coders, while a value closer to zero indicates a lack of agreement [42]. The results of this study and the simultaneous use of expertise related to the field of study were evaluated using the kappa coefficient and the SPSS software. The kappa coefficient value obtained in this study was 0.85. Considering that this coefficient value is close to 1 and the significance level is less than 0.05, it can be concluded that there is reliable agreement between the two analysts regarding the research findings.

Subsequently, to ensure the localization and applicability of these themes in the target community, a quantitative research method was employed using a comparative approach. The identified components were screened using the one-sample t-test. The data obtained from the questionnaire (distributed among 30 experts from the Social Security Organization and university professors) was summarized and entered into the SPSS software. However, a prerequisite for using this test was the normality of the data. Therefore, in the first step, an attempt was made to ensure the normality of the variables using the Kolmogorov-Smirnov test in SPSS software. The results are as follows:

Table 4: Basic Theme Classification and Creating Organizing Themes

Row	Basic theme	Theme of the organizer
1	Job-related education	Job qualification
2	Job knowledge level	
3	Ability to perform job duties	
4	Work experience	
5	Skill in optimal use of medical equipment	
6	Awareness of personal strengths and weaknesses	Emotional Intelligence
7	Self-control ability in various job situations	
8	The ability to empathize and understand the conditions of patients and colleagues	
9	Ability to communicate and interact effectively with others in the workplace	
10	Flexibility and adaptability to different job conditions	
11	Interest and satisfaction with your job	Attitudinal factors
12	Interest and loyalty to the organization	
13	Feeling proud of your job	
14	Commitment to performing tasks, job responsibilities and plans	
15	Observance of appropriate and professional coverage	Moral factors
16	Maintaining Islamic values in the work environment	
17	Adherence to professional ethics	
18	Paying attention to the ethical principles and values emphasized by the organization	
19	Responsibility in performing job duties and responsibilities	Behavioral factors
20	Respect for patients and colleagues	
21	Quick and polite response to requests	
22	Responding and accepting complex patients	
23	Strict compliance with occupational and organizational regulations	
24	Attendance and cooperation in evening and night shifts	
25	Appearance beauty	Health and safety of employees
26	Compliance with the principles of personal hygiene	
27	Paying attention to safety principles while doing work	
28	Completing work based on defined goals	Functional results
29	Patients' satisfaction with the person's performance	
30	Satisfaction of related colleagues from the individual's performance	
31	Patients complain about the person	
32	Complaints from colleagues about the individual	
33	Employee injuries from needles and sharps	Employee safety
34	Occupational complications of employees	
35	Occupational accidents of employees	
36	Cleanliness of service places, facilities and equipment	Treatment process support services
37	Variety and quality of food	
38	Compliance with the waste management system	
39	Continuous implementation of in-service training for employees	Organizational training and learning
40	Education provided to the patient and his family at the time of admission and during treatment and discharge	
41	Participation of employees in training and retraining courses at the level of the hospital department or outside the hospital	
42	Sharing scientific experiences with management approval	
43	Familiarization of the managers of each department with the concept of knowledge management	
44	Acquaintance of employees with information technology to perform their job duties	
45	Suitability of workload according to rules and regulations	Observing and adhering to the regulations, instructions and related procedures
46	Implementation of evidence-based clinical guidelines	
47	Compliance with the given medication instructions	
48	The completeness of recording the required documents in the patient file	
49	Description of written duties at the workplace of employees and ...	
50	Suitable working hours for employees	
51	Determining the duties of people in the department in each shift	
52	Documentation of treatment and support procedures	
53	Implementation of patient referral instructions	
54	Employee satisfaction with management	employee satisfaction
55	Absence of employees	
56	Sick leave of employees	
57	Request for voluntary transfer of personnel	
58	Employees' support of the organization	The quality of interpersonal interactions
59	Appropriate and favorable relationships between members and different work units	
60	Collaborative and friendly organizational atmosphere	
61	Relationships based on trust between employees	

62	Attendance and participation in hospital committees	Participation and cooperation of employees
63	Suggestions for improving the performance of tasks and better quality	
64	Participation in hospital quality improvement processes and programs	
65	Participation in doing things and paying attention to teamwork	
66	Participating in meetings and sincere meetings of the manager with the employees	
67	Employee participation in decisions	
68	Per capita proposals implemented by each unit	
69	The ability to understand the needs of patients	Attention to the patient
70	Special attention to special patients	
71	Time spent with the patient	
72	Paying attention to the patient's preferences	
73	Patient complaints	
74	Service prioritization	Responsiveness in fast, timely and appropriate service
75	Managing patients with an advanced recovery protocol	
76	Simplicity of the registration process and the acceptance and discharge process	
77	Providing detailed information about the health status of the patient at any time to the patient and companions	
78	Timely and appropriate examination	
79	Waiting time to receive service	
80	Patients discharged from the emergency room after 12 hours	
81	death	Patient Safety
82	Patient falls	
83	Bedsore	
84	Post-operative complications such as pulmonary embolism, bleeding	
85	Pressure ulcers	
86	Unplanned visits to the operating room	
87	Hospital infection	
88	Readmission of patients	
89	Objects left in the body of the operated patient	
90	Medical errors	
91	Medication errors	Quantity of medical services
92	Paraclinic prescription items	
93	Items prescribed by doctors	
94	Natural births	
95	Counseling the patient	
96	Outpatient visit	
97	Surgeries performed	income generation
98	Actual vs. budgeted revenue	
99	Income from patients	
100	Revenue to total cost realized	Efficiency of the treatment unit
101	bed occupancy	
102	Patient stay	
103	restore	
104	Cesarean section	
105	Unnecessary visit to the radiology unit	
106	Canceled surgeries	
107	Successful cardiopulmonary resuscitation	
108	Warning signs in required places	Health and safety of the workplace
109	Suitability of space, temperature, light, facilities and arrangement of rooms for patients	
110	Hygiene and proper ventilation	
111	Compliance with safety requirements inside the hospital	
112	Good buffet with a complete and varied menu	welfare amenities
113	Convenient parking with easy access	
114	Accomodation facilities for companions	
115	Suitability and comfort of the waiting room for patients and visitors	
116	The appropriateness of the meeting time	Optimal use of resources and equipment
117	Documented program to reduce costs, maintain medical equipment and ...	
118	Building maintenance cost	
119	Using structural and unused resources and capacities	
120	Technical defects of construction equipment	
121	Stock in stock	Resources and facilities
122	Employees by specialization	
123	Adequate, high-quality and modern medical equipment	
124	Availability of imaging facilities (radiography, ultrasound, CT scan, MRI)	
125	Healthy and sufficient consumables	
126	Pharmacy with variety and sufficient medicine	Information and communication technologies
127	Use of new treatment technologies	
128	Accurate information systems	
129	Database of hospital tariffs	

130	Updated and complete website	
131	Providing appropriate services in times of crisis	Purposefulness and planning
132	Appropriate policy and strategy	
133	Specific organizational goals based on common values	
134	The commitment of the senior management of the hospital to the implementation of programs	
135	The success of departments and units in achieving the total internal audit score	
136	The number and quality of documentation and conceptual and clinical components	
137	Accreditation standards	Performance management and payment
138	Timely feedback on the performance of all employees	
139	Rewards and cash prizes based on performance	
140	Incentive salary and benefits	
141	Use of disciplinary plan	Collaborative management system
142	Promoting collaborative culture based on knowledge management	
143	Holding meetings and sincere meetings of the manager with the employees	
144	delegation of authority	
145	Interdepartmental coordination	Management of patient complaints
146	Discharged patients with personal consent	
147	Complaints satisfied	
148	Patient complaints	
149	Complaint handling time	
150	Dissatisfied customers after complaint resolution	
151	Legal complaint	Stakeholder satisfaction
152	Patients' satisfaction with the services received	
153	Willingness to return the patient	
154	Satisfaction of management	Financial performance
155	Personnel expenses from the total expenses	
156	Cost per patient	
157	The cost of medicine and consumables	
158	Increase hospital income	

Table 5: Measures of Agreement: Cohen's Kappa

Agreed-upon terms	Value	Standard deviation	Statistically significant number
	0.85	0.13	0.001

Given that the sig. values for all components are above 0.05, the data can be assumed to be normal and the parametric t-test can be used for screening purposes. Accordingly, the t-test was used with the data from questionnaire number one. In this test, the significance level was set at 4 (since a 7-point Likert scale was used in the questionnaire). The confidence level was set at 95%. The results of the t-test are presented in the table below:

To analyze the results of this test, the null hypothesis and alternative hypothesis were considered as follows:

$$H_0 : \ \mu = 4 H_1 : \ \mu \neq 0$$

Based on the above table and assumptions, since the sig. of all components is less than 0.05, the null hypothesis is rejected for all of them and the alternative hypothesis is accepted. This means that the significance of none of them was at the average level (or higher or lower than the average). However, to know which component has a higher-than-average significance level and which one has a lower-than-average significance level, we should pay attention to the t-statistic value in the table above. If this statistic is positive, it indicates that the score of the component (and its significance) is above average, and vice versa. As can be seen in the table above, the t-statistic value for all organizational dimensions is positive, and it can be inferred that from the experts' point of view, all dimensions were above average in terms of importance and none of them can be eliminated.

To categorize the organizing themes into three broad categories of individual, group, and organizational themes, exploratory factor analysis was employed. For extracting the categories, the principal components method was used in the exploratory factor analysis, and for rotating the categories, the Varimax method with Kaiser normalization was utilized. The decision criterion for retaining or eliminating components from the exploratory factor analysis is their extraction communality values. Accordingly, if the extraction communality value of any of the organizing themes is less than 0.5, it is excluded from the exploratory factor analysis (it will not be included in the categorization). Additionally, a factor loading of greater than 0.4 is considered the criterion for categorizing them. The results of the exploratory analysis test are presented in the following table. To determine which subcategory each component falls under, the highest factor loading for that component is colored:

As it is evident, the extracted topic share for all organizing themes is greater than (5/0), hence all of them have the potential to be included in one of the categories. Additionally, based on the above table, three comprehensive

Table 6: Test for normality of identified organizing themes

Theme of the organizer	Number	Kolmogorov Smirnov	meaningful
The quality of interpersonal interactions	30	1.346	0.053
welfare amenities	30	1.121	0.162
Participatory Management	30	1.196	0.115
Emotional Intelligence	30	1.212	0.106
support services	30	0.293	0.071
Efficiency of the treatment unit	30	1.290	0.072
Management of patient complaints	30	0.310	0.065
Performance management and payment	30	0.275	0.077
Health and safety	30	1.328	0.059
Organisational Learning	30	1.328	0.096
Stakeholder satisfaction	30	1.193	0.116
Quantity of medical services	30	1.275	0.077
employee satisfaction	30	1.313	0.064
Purposefulness and planning	30	1.268	0.080
Functional results	30	1.220	0.102
Job qualification	30	1.179	0.124
Timely and appropriate response	30	1.319	0.062
Moral factors	30	1.327	0.059
Attitudinal factors	30	1.220	0.102
Health and safety of the workplace	30	1.275	0.077
Information Technology	30	1.246	0.333
income generation	30	1.348	0.058
Attention to the patient	30	1.254	0.478
Optimal use of resources	30	1.458	0.908
Patient Safety	30	1.358	0.154
Participatoryism	30	1.314	0.089
Resources and facilities	30	1.057	0.077
Employee safety	30	1.806	0.099
Behavioral factors	30	1.443	0.155
Performance management and payment	30	1.072	0.163
Regulatoryism	30	1.519	0.081

Table 7: t-test Results Related to Screening Organizing Themes

Organizing Principle	**t-statistic**	**df**	**meaningful**
Interpersonal Interaction Quality	6.614	29	0.000
Employee Benefits	2.227	29	0.033
Participatory Management	3.784	29	0.001
Emotional Intelligence	5.504	29	0.000
Support Services	3.442	29	0.002
Clinical Unit Efficiency	4.761	29	0.000
Patient Complaint Management	4.692	29	0.000
Performance and Compensation Management	8.178	29	0.000
Health and Safety	3.784	29	0.001
Organizational Learning	4.476	29	0.000
Stakeholder Satisfaction	3.095	29	0.004
Quantity of Care	5.014	29	0.000
Employee Satisfaction	8.178	29	0.000
Goal Orientation and Planning	8.223	29	0.000
Performance Outcomes	7.100	29	0.000
Job Competence	7.748	29	0.000
Timely and Appropriate Response	6.706	29	0.000
Ethical Factors	6.952	29	0.000
Attitudinal Factors	7.403	29	0.000
Workplace Health and Safety	2.318	29	0.001
Information Technology	7.294	29	0.000
Revenue Generation	7.535	29	0.000

Patient-Centered Care	7.486	29	0.000
Optimal Resource Utilization	6.428	29	0.044
Patient Safety	6.007	29	0.000
Participatory Approach	3.428	29	0.000
Resources and Facilities	4.384	29	0.000
Employee Safety	7.244	29	0.003
Behavioral Factors	4.206	29	0.000
Performance and Compensation Management	5.642	29	0.000
Regulatory Compliance	7.003	29	0.041

Table 8: Rotated Factor Matrix using Principal Component Analysis and Varimax Rotation with Kaiser Normalization

Organizing Principle	A	B	c	subscription subscription
Interpersonal Interaction Quality	0.690	0.711	0.147	0.687
Employee Benefits	0.203	0.643	0.778	0.704
Participatory Management	0.229	0.168	0.640	0.645
Emotional Intelligence	0.542	0.322	0.494	0.612
Support Services	0.303	0.505	0.273	0.562
Clinical Unit Efficiency	0.480	0.542	0.507	0.520
Patient Complaint Management	0.661	0.200	0.668	0.566
Performance and Compensation Management	0.641	0.180	0.687	0.566
Health and Safety	0.637	0.606	0.224	0.594
Organizational Learning	0.353	0.615	0.502	0.543
Stakeholder Satisfaction	0.487	0.485	0.527	0.584
Quantity of Clinical Services	0.731	0.888	0.646	0.707
Employee Satisfaction	0.612	0.709	0.247	0.683
Goal Setting and Planning	0.164	0.572	0.774	0.683
Performance Outcomes	0.604	0.558	0.292	0.588
Job Competency	0.556	0.299	0.282	0.552
Timely and Appropriate Response	0.587	0.745	0.691	0.657
Ethical Factors	0.651	0.263	0.547	0.646
Attitudinal Factors	0.739	0.668	0.672	0.587
Workplace Health and Safety	0.620	0.658	0.769	0.643
Information Technology	0.325	0.647	0.652	0.598
Revenue Generation	0.746	0.811	0.432	0.721
Patient-Centered Care	0.648	0.708	0.665	0.651
Resource Optimization	0.425	0.425	0.657	0.492
Patient Safety	0.542	0.648	0.452	0.557
Participatory Approach	0.611	0.635	0.198	0.689
Resources and Facilities	0.652	0.442	0.678	0.670
Employee Safety	0.521	0.616	0.541	0.965
Behavioral Factors	0.642	0.312	0.503	0.591
Regulatory Compliance	0.409	0.381	0.593	0.506
Organizing Principle	0.281	0.468	0.334	0.399

topic categories with a specific value greater than one have been extracted, and all organizing themes fall into these three categories.

In Tables 9, 10, and 11, and based on the output of exploratory factor analysis, the themes are presented in three levels of basic and organizing themes, and individual, group, and organization levels. Each of these categories is also named based on the type and nature of the themes, as well as consultation with the supervisor.

Table 9: Classification of core themes and organizers related to the evaluation of the performance of healthcare centers at the individual level

Row	Core message	Organizing Principle
1	Job-Related Education	Job Competence
2	Level of Job Knowledge	
3	Ability to Perform Job Duties	
4	Work Experience	
5	Skill in Optimal Use of Medical Equipment	
6	Awareness of Personal Strengths and Weaknesses	Emotional Intelligence
7	Ability to Self-Control in Various Job Situations	
8	Ability to Empathize and Understand Patient and Colleague Situations	
9	Ability to Effectively Communicate and Interact with Others in the Workplace	
10	Flexibility and Adaptability to Different Job Situations	
11	Interest and Satisfaction with One's Job	Attitudinal Factors
12	Interest and Loyalty to the Organization	
13	Sense of Pride and Honor in One's Job	
14	Commitment to Fulfilling Job Duties, Responsibilities, and Programs	
15	Maintaining Appropriate and Professional Attire	Ethical Factors
16	Upholding Islamic Decorum in the Workplace	
17	Adherence to Professional Ethics	
18	Attention to Ethical Principles and Organizational Values	
19	Responsibility in Fulfilling Job Duties and Responsibilities	Behavioral Factors
20	Respect for Patients and Colleagues	
21	Prompt and Polite Responses to Requests	
22	Responsiveness and Acceptance of Complex Patients	
23	Strict Adherence to Job and Organizational Regulations	
24	Presence and Cooperation in Afternoon and Night Shifts	
25	Neat Appearance	Employee Health and Safety
26	Adherence to Personal Hygiene Principles	
27	Attention to Safety Principles During Work	
28	Completion of Work Based on Defined Goals	Performance Outcomes
29	Patient Satisfaction with Individual Performance	
30	Satisfaction of Relevant Colleagues with Individual Performance	
31	Patient Complaints about the Individual	
32	Colleague Complaints about the Individual	

Table 10: Classification of core and organizing themes related to the performance evaluation of healthcare centers at the group level.

Row	**Indicator**	**Component**
1	Sharps injuries to staff	Employee Safety
2	Work-related staff illnesses	
3	Work-related staff accidents	
4	Cleanliness of service areas, facilities and equipment	Treatment Process Support Services
5	Variety and quality of food	
6	Compliance with waste management system	
7	Continuous implementation of in-service training for staff	Organizational Learning and Development
8	Education provided to the patient and his/her family upon admission, during treatment and discharge	
9	Participation of staff in training and retraining courses at the hospital department level or outside the hospital	
10	Sharing of scientific experiences with the approval of management	
11	Familiarity of managers of each department with the concept of knowledge management	
12	Familiarity of staff with information technology for performing their job duties	
13	Appropriateness of workload in accordance with laws and regulations	Compliance with Relevant Regulations, Guidelines, and Procedures
14	Implementation of evidence-based clinical guidelines	
15	Compliance with prescribed medication orders	
16	Completeness of documentation required in the patient's medical record	
17	Written job descriptions in the workplace for staff and ...	
18	Appropriate working hours for staff	
19	Definition of staff duties in each shift	
20	Standardization of processes for performing medical and support services	
21	Implementation of patient referral guidelines	

22	Staff satisfaction with management	Employee Satisfaction
23	Staff absenteeism	
24	Medical leave of staff	
25	Voluntary staff relocation requests	
26	Staff support for the organization	Quality of Interpersonal Interactions
27	Appropriate and positive relationships between members and different work units	
28	Collaborative and friendly work environment	
29	Trust-based relationships between staff	
30	Presence and participation in hospital committees	Employee Engagement and Collaboration
31	Suggestions for improving job performance and better quality	
32	Participation in hospital quality improvement processes and programs	
33	Participation in tasks and attention to teamwork	
34	Participation in meetings and gatherings between the manager and employees	
35	Staff participation in decision-making	
36	Number of implemented suggestions per unit	
37	Ability to understand patient needs	Patient-Centered Care
38	Special attention to specific patients	
39	Time spent with the patient	
40	Attention to patient preferences	
41	Patient complaints	
42	Prioritization of services	Responsiveness in Providing Prompt, Timely, and Appropriate Service
43	Management of patients with an advanced recovery protocol	
45	Providing accurate information about the patient's health status to the patient and family at any time	
46	Timely and appropriate examination	
47	Waiting time to receive service	
48	Patients discharged from the emergency department after 12 hours	
49	Mortality rate	Patient Safety
50	Patient fall	
51	Bed sore	
52	Post-operative complications such as pulmonary embolism, hemorrhage	
53	Pressure ulcers	
54	Unscheduled return to the operating room	
55	Hospital-acquired infection (HAI)	
56	Readmission rate	
57	Retained surgical items	
58	Medical errors	
59	Medication errors	Quantity of Healthcare Services
60	Diagnostic tests ordered	
61	Medications prescribed	
62	Vaginal deliveries	
63	Patient consultation	
64	Ambulatory visit	
65	Surgeries performed	Revenue Generation
66	Actual revenue versus budgeted revenue	
67	Revenue generated from patients	
68	Revenue to total cost ratio	Healthcare Unit Efficiency
69	Bed occupancy	
70	Length of stay	
71	Readmission	
72	Cesarean section	
73	Unnecessary radiology visits	
74	Cancelled surgeries	
75	Successful cardiopulmonary resuscitation (CPR)	

Table 11: Classification of core and organizing themes for healthcare center performance evaluation at the organizational level

Row	Indicators	Component
1	Warning signs in required locations	Workplace Health and Safety
2	Suitability of space, temperature, light, facilities, and room layout for patients	
3	Proper hygiene and ventilation	
4	Compliance with safety requirements within the hospital	
5	Good buffet with a full and varied menu	Employee Benefits
6	Adequate parking with easy access	
7	Accommodation for companions	
8	Suitability and comfort of the waiting room for patients and visitors	
9	Suitability of visiting time	
10	Systematic plan to reduce costs, maintain medical equipment, etc.	Optimal Resource and Equipment Utilization
11	Building maintenance costs	
12	Utilization of unused structural resources and capacities	
13	Technical defects in building equipment	
14	Inventory	
15	Staff by specialty	Resources and Facilities
16	Sufficient, high-quality, and modern medical equipment	
17	Availability of imaging facilities (radiography, ultrasound, CT scan)	
18	Safe and adequate supplies	
19	Pharmacy with a variety of adequate medicines	
20	Use of new treatment technologies	Information and Communication Technologies (ICT)
21	Accurate information systems	
22	Hospital tariff database	
23	Up-to-date and comprehensive website	
24	Provision of appropriate services in times of crisis	
25	Appropriate mission and strategy	Goal Setting and Planning
26	Clear organizational goals based on shared values	
27	Commitment of senior hospital management to implementing plans	
28	Success of departments and units in achieving the overall internal audit score	
29	Number and quality of documents and conceptual and clinical components	
30	Accreditation standards	
31	Timely feedback on the performance of all employees	Performance Management and Compensation
32	Performance-based bonuses and cash rewards	
33	Motivating salaries and benefits	
34	Use of a disciplinary plan	
35	Promoting a participatory culture based on knowledge management	Participatory Management System
36	Holding friendly meetings and sessions between the manager and employees	
37	Delegation of authority	
38	Interdepartmental coordination	
39	Patients discharged with personal consent	Patient Complaint Management
40	Resolved complaints	
41	Patient complaints	
42	Complaint handling time	
43	Dissatisfied customers after complaint resolution	
44	Legal complaint	
45	Patient satisfaction with services received	Stakeholder Satisfaction
46	Patient's willingness to return	
47	Management satisfaction	
48	Increase in hospital revenue	Financial Performance
49	Personnel costs as a percentage of total costs	
50	Cost per patient	
51	Cost of medicines and consumables	
52	Increase in hospital revenue	

5 Conclusion

The present study was conducted to combine and integrate indicators that have been examined and validated in various studies to evaluate the performance of healthcare centers and their staff. For this purpose, the findings of published studies on these indicators were integrated and summarized using a meta-synthesis method and an inductive approach. In this section, the general results of managerial inferences and research suggestions are discussed.

It is expected that the present study will contribute to the advancement of existing knowledge in the field of healthcare performance evaluation in the following ways: Despite a history of research suggesting the need for a systematic and comprehensive approach to evaluating healthcare performance, this topic has received less attention from researchers. A comprehensive review of the literature did not reveal a comprehensive model in this area. Various studies have proposed indicators and components for evaluating the performance of some of the different components of the healthcare sector, but they lack comprehensiveness and generalizability. According to some researchers, there are four problems in the healthcare performance evaluation system: 1. Background issues (inconsistency between standards and healthcare staff duties), 2. Performance evaluation structure (subjective evaluation), 3. Evaluation process (lack of supervision by managers, unfair evaluations, and instability of evaluations), 4. Evaluation results, i.e., inappropriate feedback [49]. The specific nature of the methodology of this study and the use of a qualitative meta-synthesis approach have led to a holistic approach to this topic. In this way, various necessary indicators in this field have been identified and classified, and a relatively comprehensive model has been presented. The multi-level nature of the proposed model in this study is also one of its distinguishing innovations. Paying simultaneous attention to performance evaluation components and indicators at the individual, group, and organizational levels has added to the richness and comprehensiveness of this model.

The service-oriented nature of the healthcare sector underscores the pivotal role of human resources in determining the performance of hospitals and healthcare centers. Recognizing this, healthcare organizations have placed a strong emphasis on enhancing the performance indicators of their employees, particularly those directly involved in patient care. The crucial role of these frontline personnel in ensuring patient well-being necessitates a rigorous and comprehensive performance evaluation system. However, the complexity and diversity of healthcare services across various departments pose a significant challenge to effective performance evaluation. The proposed framework addresses this challenge by providing a holistic and objective approach to evaluating performance at all levels of healthcare institutions. By fostering a data-driven and outcome-oriented evaluation culture, this framework can significantly contribute to achieving the goals of performance evaluation and management in these service-oriented organizations.

6 Suggestions

Based on the presented model in this research, for evaluating the multi-level performance of healthcare centers, it is suggested that managers and health officials pay particular attention to the following:

1. Implementing the performance evaluation model presented in this research requires the development of guidelines and an executive process for multi-level evaluation. Therefore, it is suggested that a working group consisting of organizational experts, human resource management, and performance evaluation executive officials be formed to develop guidelines and executive procedures for performance evaluation based on this multi-level model.

2. Considering the role and impact that comprehensive, documented, and standardized performance evaluation can have on improving the productivity and performance of healthcare centers, it is suggested that this model be used in a centralized manner to evaluate the performance of healthcare centers. Scattered and divergent actions in this area will not have the necessary effectiveness.

3. Considering the relative alignment and sharing of the goals of performance evaluation and the hospital accreditation program, it is suggested that this model be used for the standard and reliable ranking of hospitals and healthcare centers.

4. It is suggested that a performance management unit be established in hospitals to regularly and periodically evaluate the performance of these centers. A suitable performance improvement plan for each center, appropriate to the situation of that center and hospital, should be developed and implemented with their participation.

5. It is suggested that an annual festival of excellent performance be held and based on the results of performance evaluation according to the presented model, hospitals, hospital departments, and medical staff should be recognized and appreciated for individuals, units, and hospitals with superior performance.

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