

Research Article

# Design and Validation of a Model for Promoting Appropriate Organizational Culture for Educational Medical Centers

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## Abstract

The aim of this study was to design and validate a model for promoting an appropriate organizational culture for educational medical centers. In terms of purpose, this research was applied; regarding the nature of data, it was mixed-methods (qualitative and quantitative); and in terms of execution approach, it was exploratory. The research method in the qualitative part was grounded theory, and in the quantitative part, it was descriptive-correlational. The statistical population in the qualitative part consisted of experts from educational medical centers in East Azerbaijan province, of whom 12 individuals were selected based on the principle of theoretical saturation and through purposive sampling. The statistical population in the quantitative part included all employees of the Imam Khomeini Educational and Medical Center in Sarab in the year 2025, totaling 1000 individuals, of whom 244 individuals were selected as the sample using cluster random sampling. The data collection tool in the qualitative part was a semi-structured interview. Qualitative data were analyzed using a three-stage coding process (open, axial, and selective). The data collection tool in the quantitative part of the present research was a researcher-made questionnaire based on the findings of the qualitative part. To analyze the quantitative data, considering the non-normal distribution of the data, confirmatory factor analysis using Partial Least Squares (PLS) was employed. The findings indicate that the model for promoting an appropriate organizational culture for educational medical centers was categorized under the causal conditions of organizational causes, knowledge management, subcultures, attention to values, necessary actions, institutionalization strategies, micro and macro involved factors, intervention of non-development, human resources, customer-related factors, job-related factors, organizational outcomes, organizational leadership, and environmental outcomes, and were validated in terms of fit ( $p < 0.05$ ). Finally, it is suggested that the results of this research be used as a guide and a general pathway for promoting an appropriate organizational culture for educational medical centers.

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**Keywords:** Design and Validation; Organizational Culture; Educational Medical Centers; Exploratory Research

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## 1. Introduction

Organizational culture is an area that has seen significant progress in the last five decades. Initial studies related to it focused on organizational conditions, human relations in educational and health institutions, and the evaluation of factors related to organizational dynamics. Organizational culture was first published by Pettigrew, who defined it as "a system of publicly and collectively accepted meanings that perform roles for a specific group over a defined time period" (Cancino and Yáñez, 2024). Organizational culture is a mindset that is expressed and influenced through tangible and intangible tools and is characteristic of an institution and its performance (Elrod and Fortenberry, 2024). Schein describes organizational culture as the basic assumptions that a group creates for internal integration and environmental adaptation (Schein, 1990). Furthermore, the role of organizational culture as a set of assumed values, basic beliefs, and expectations in improving the performance of organizational employees cannot be ignored (Vatan Doust et al, 2024). On the other hand, organizational culture is even more important in institutions related to treatment and health. Culture is important for enhancing the performance of institutions, particularly hospitals and other healthcare centers. A positive organizational culture that emphasizes collaboration and teamwork helps improve healthcare services, patient satisfaction, and the implementation of new innovations. Some cultures facilitate improvement, support the generation of new ideas, and motivate employees for organizational success (Mannion and Davies, 2018). Elrod and Fortenberry (2024) state that an organization's culture, if well devised and properly managed, equips healthcare and medical institutions with a strategic asset and key competitive advantage (Elrod and Fortenberry, 2024). Most importantly, organizational culture educates and enlightens employees about appropriate and acceptable perspectives and practices, and provides direction while completing tasks and responsibilities. This is particularly important in healthcare and medical environments, where direct supervision is often not feasible. A constructive organizational culture helps treatment institutions guide their employees and their related decisions and actions in the right direction by creating an organizational mindset (Curry et al, 2018). Organizational culture is influenced by many factors, the most common of which is the influence of internal and external factors. Internal factors include employees, leadership, competencies, fields of activity, research and development, while external factors include political, economic, industrial, social, and technical factors (Cicea et al, 2022). To manage all these factors, organizations use various tools, including defining the organizational vision, organizational mission, ethical charter, policies, and procedures to develop and

maintain organizational culture (Szczepańska and Kosiorek, 2017). Therefore, the phenomenon of organizational culture is very complex and multifaceted (Cicea et al, 2022). Research shows that many factors are involved in improving organizational culture; these factors include human resource-related factors (motivation, empowerment, teamwork, creativity, job satisfaction) (Mannion and Davies, 2018, Liou and Dellmann-Jenkins, 2020) and organization-related factors (organizational justice, service quality, organizational communication, organizational performance) (Kazemi M, Fanudi, 2009 and Szara et al, 2018). On the other hand, at the macro level, factors such as religious values, government policies, technologies, and related culture are involved (Cicea et al, 2022). Despite the importance of culture in the health domain, its deeper investigation in treatment and healthcare organizations, due to its key role compared to other organizations, is still necessary. Despite the difficulties of promoting and improving culture, culture is flexible and can be led through managerial activities and moved towards establishing an appropriate culture (Abington, 2013). As mentioned, several aspects, including promoting human resources, improving communication, attention to governmental macro-domains, etc., are necessary for outlining the vision and presenting a suitable organizational culture model (Johnson et al, 2016). Studies show that all organizations, whether in healthcare or any other sector of society, require effective and potentially transformational leadership as well as the use of work teams to promote organizational culture (Parimi et al, 2024). Other studies show that factors affecting culture include positive attitudes, leadership quality, communication, values, and competencies of healthcare teams (Sriyasak et al, 2024). Other studies consider personal, relational, and organizational factors, empowerment, motivation, productivity, service quality, attention to human and job values as effective in promoting organizational culture (Lee et al, 2024). Currently, challenges are observed in treatment environments, and ignoring them affects the performance and survival of these organizations. For example, in the area of work ethics, issues such as violation of patient privacy, disrespect for patient rights, inappropriate use of treatment resources, or non-observance of treatment staff rights can be mentioned (Cohen and Ezer, 2013). Also, in the area of organizational culture, challenges such as lack of attention to ethical values in the organization, absence of a quality promotion culture in clinics, lack of attention to the needs of treatment staff, or lack of attention to the opinions and suggestions of treatment staff can be mentioned (Mosadeghrad, 2014). Given the complexities existing in the organizational culture of educational medical centers, which are known as organizations with intertwined professional bureaucracy, the necessity for conducting in-

depth research in this area is felt more than ever. Numerous studies have examined various dimensions of organizational culture in these centers. However, many of these researches have been limited to quantitative methods and have paid less attention to delving into the complex contexts of organizational culture. For example, a study in the Ministry of Health showed that there is a significant relationship between organizational culture and knowledge management (Janavi, Rezaei, Poroushasb, 2020), but the deep details of this relationship have been less explored. Also, another study identified the components of organizational culture based on Iranian-Islamic values (Motevassel Arani et al, 2020), but multiple investigations are still needed to understand these components more deeply in healthcare-treatment environments. Therefore, a clear research gap exists in this area, making mixed-methods research necessary for deeper identification of factors affecting organizational culture in educational medical centers and their validation. Finally, the aim of this research is to design and validate a model for promoting an appropriate organizational culture for educational medical centers.

## 2. Method

The aim of the present research was to design and validate a model for promoting an appropriate organizational culture for educational medical centers. Since the results of this research can be used directly, the present research is applied in terms of purpose and mixed-methods (qualitative and quantitative) regarding the nature of data. In terms of execution approach, the research was exploratory. The research method in the qualitative part was grounded theory, and in the quantitative part, it was descriptive-correlational. The qualitative statistical population of the research consisted of experts from educational medical centers in East Azerbaijan province. In this research, purposive sampling, which is one of the non-probability sampling methods, was used to select the sample for the qualitative part. The sufficiency of sampling in conducting the interviews was achieved based on the principle of theoretical saturation and the repeatability of the collected data. Therefore, the sample size for the qualitative part was 12 individuals. Semi-structured interviews were used to collect data. For the implementation of the research, one week before the interview, the title and objective of the research were explained to the experts. Ethical issues in this research included ensuring informed consent from participants to participate in the research and record the interview content, as well as the right to withdraw from the research at all stages, were observed for the participants. Data analysis in the qualitative part was performed using three methods: open coding, axial coding, and selective coding.

To ensure the validity and reliability of the qualitative findings, several scientific strategies were used. In the first step, content validity was assessed through participant review. In this way, a portion of the extracted codes and themes were provided to a number of interviewees to confirm their accuracy and precision. Also, to increase construct validity, peer review was utilized. In this manner, the coding and categorization process was reviewed and revised by two experts in the field of organizational culture. Furthermore, to enhance external validity, the triangulation method was used, and qualitative data were integrated with the quantitative findings of the research to obtain a more comprehensive picture. Regarding the reliability of the qualitative data, the test-retest coding method was used. In this way, a portion of the interview texts was coded again by the researcher after a specific time interval, and the level of agreement of the obtained results confirmed the reliability of the analysis process. In addition, prolonged engagement of the researcher with the data and repeated reading of the interview texts were also done to increase the stability of the results. The statistical population in the quantitative part included all employees of the Imam Khomeini Educational and Medical Center in Sarab. The total number of these employees in the year 2025 was 1000 individuals. Based on Cochran's formula, the sample size for the subjects was determined as 278 individuals, and these subjects were selected using cluster random sampling. The data collection tool in the quantitative part of the present research was a researcher-made questionnaire based on the findings of the qualitative part. The questionnaire questions were designed based on basic themes (open codes) on a Likert scale (1: strongly disagree to 5: strongly agree). Since 34 subjects had incompletely answered the questions, these subjects were removed from the research, and data related to 244 subjects were entered into the final analysis. To analyze the quantitative data, considering the non-normal distribution of the data, confirmatory factor analysis using Partial Least Squares (PLS) was used. To examine the reliability and validity of the researcher-made questionnaire, Cronbach's alpha test and construct validity (convergent and divergent) were used. The results of the Cronbach's alpha test, composite reliability, and average variance extracted (AVE) of the categories are as follows;

According to the results from the Table 1 above, the reliability of all categories is higher than 0.8, and therefore the questionnaire's reliability is at an ideal and desirable level. The composite reliability of all categories is also above 0.9 and higher than the Average Variance Extracted (AVE), which indicates convergent validity. Also, the Average Variance Extracted (AVE) for all categories is more than 0.5, which again confirms the convergent validity of the questionnaire. To examine discriminant

validity, the Heterotrait-Monotrait (HTMT) ratio was used. The results of the HTMT criterion are as per the Table 2;

The HTMT criterion has replaced the old Fornell-Larcker method. If the values of this criterion are less than 0.9, discriminant validity is acceptable. According to the information in the Table 2, all values are less than 0.9, and the discriminant validity of the model is also confirmed. In the confirmatory factor analysis process, it is first necessary to examine the construct validity to determine whether the selected indicators for measuring the intended constructs have the necessary accuracy. According to the results of composite reliability, Average Variance Extracted (AVE), and the HTMT criterion, the construct validity of the model (convergent and discriminant validity) was confirmed. Data analysis was performed using SPSS-27 and SmartPLS3 software.

### 3. Results

After the conducted qualitative analysis, which led to the identification of initial codes, these codes were categorized into several categories based on the similarity and affinity of the data, and finally, the categories were placed in specific classes. The data, after continuous analysis and open, axial, and selective coding, were organized into 275 open codes, 14 axial codes, and 6

classes (causal conditions, central phenomenon, strategies, intervening factors, contextual conditions, and outcomes). In fact, these data revealed the criteria for promoting an appropriate organizational culture for educational medical centers and a new model emerged in this regard. The results of examining the data and conceptualizing the statements are presented in Table 3. The Table 3 includes open codes, concepts, and axial codes. In the coding process, an attempt was made to use concepts raised by the interviewees themselves as much as possible, but in cases where this was not possible given the presented concept, technical concepts from the literature and review of past records and research were used. In the axial coding stage, concepts were categorized based on their nature, and an axial code was determined for each category.

In the final coding stage, the axial codes were selected into six classes (causal, central phenomenon, strategies, intervening factors, contextual conditions, and outcomes), and the final research model was obtained as shown in Fig. 1.

Subsequently, for quantitative validation and examination of the model fit and the use of tests, first, the parametric or non-parametric conditions of the data were determined. To examine the normal or non-normal distribution of the data, the Kolmogorov-Smirnov test was used, the results of which are as per the Table 4;

**Table 1.** Cronbach’s Alpha, Composite Reliability, and Average Variance Extracted (AVE) Values for Categories

Categories	Cronbach’s Alpha	Composite Reliability (C.R.)	Average Variance Extracted (AVE)	Coefficient of Determination (R <sup>2</sup> )
Causal Conditions	0.937	0.944	0.515	–
Central Phenomenon	0.887	0.914	0.639	0.295
Strategies	0.923	0.938	0.683	0.540
Intervening Factors	0.905	0.922	0.541	–
Contextual Conditions	0.939	0.946	0.538	–
Outcomes	0.889	0.911	0.563	–

**Table 2.** Results of the HTMT Criterion for Assessing Discriminant Validity of the Model for Promoting Appropriate Organizational Culture in Educational-Medical Centers

Categories	Causal Conditions	Central Phenomenon	Strategies	Intervening Factors	Contextual Conditions	Outcomes
Causal Conditions	–	–	–	–	–	–
Central Phenomenon	0.592	–	–	–	–	–
Strategies	0.664	0.751	–	–	–	–
Intervening Factors	0.494	0.714	0.648	–	–	–
Contextual Conditions	0.725	0.855	0.682	0.502	–	–
Outcomes	0.528	0.631	0.886	0.755	–	–

**Table 3.** Open and Axial Coding of the Model for Promoting Appropriate Organizational Culture for Educational Medical Centers

Selective Codes	Axial Codes	Concepts	Examples of Open Codes	
Contextual Conditions	Human Resources	Empowerment of Human Resources	Encouraging the empowerment of employees and teams - Strengthening initiative and innovation - Innovation and raising the level of services - Capability and enhancement of behavioral skills of personnel - Skilled, competent, and conscientious human resources	
		Work Motivation	Providing strong motivation to employees - Creating amity and friendship among employees - Addressing the financial needs of employees - Correcting qualification conditions for organizational positions - Reducing employee turnover - Increasing job satisfaction	
		Creating a Suitable Work Environment	Work discipline - Creating spiritual vitality and empathy between employees and patients - Utilizing their thoughts and suggestions and improving human relations - Preventing employee burnout - Preventing employee turnover from the organization - Healthy work environments - Creating a sense of mutual trust among employees	
		Supporting and Utilizing Employees	Utilizing their abilities and intellectual capital in the work environment - Support from senior managers of the organization for employees - Respecting the dignity and human status of employees and increasing the promotion of health literacy and culture	
		Emphasis on Human Resource Discipline	Punctuality - Administrative discipline and controlling entry and exit	
	Customer-Related Factors		Attention to Diversity of Human Resources	Creating strong motivation for all employees - Creating a sense of satisfaction among all employees - Creating a suitable work environment for people with diverse specialties, accents, beliefs, and ethnicities - Enhancing relations among personnel of different ethnicities
			Fairness in Relation to Patients	Insistence on fairness towards patients - Observing conditions of dying patients - Paying attention to the cultural preferences of all clients - Culture of diligence, effort, and spirit of effort, competition, and camaraderie
			Maintaining Patient Confidentiality	Observing the patient's rights charter - Providing free services to the insured - Confidentiality of patients' personal information
			Attention to Patient Satisfaction	Increasing client satisfaction - Reducing the number of complaints - Reducing mortality rates - Gaining customer satisfaction - Reducing hospital complications
			Customer Orientation	Observing patient rights - Respect and attention to patients - Patient-centeredness - Honoring clients - Patience and respect for patients - Providing the best care at the lowest cost - Intimacy - Consideration - Empathy and companionship with the customer - Culture of valuing and honoring clients
		Quality Service Delivery	Observing patient rights in service delivery - Speed, ease, assurance, and satisfaction with services - Fairness in care - Continuous quality improvement at all levels of center activities - Improving service quality and gaining patient trust, assurance, and satisfaction	
		Attention to Patient Safety	Applying a culture of patient safety - Applying a culture of risk management	

**Table 3.** Open and Axial Coding of the Model for Promoting Appropriate Organizational Culture for Educational Medical Centers(Continued)

		Observing Safety Regulations	Providing help in times of need - Principles of safe admission and discharge - Preserving human dignity and the charter of patient and staff rights - Observing patient safety standards
	Occupational Factors	Wages and Salaries	Maintaining employee reward and evaluation systems - Payment and compensation system for service - Knowing the financial needs of employees and addressing them - Timely payment - Payment based on merit - Financial facilitation and increasing staff financial resources
		Job Fit	Job enrichment - Job development - Updating personnel information - Matching the individual with the job
Causal Conditions	Organizational Causes of Culture Development	Teamwork	Team spirit, unity, and synergy - Expanding group and team work - Spirit of teamwork and group work - Creating an environment of empathy, cooperation, and belief
		Enhancement of Organizational Services	Improving service quality - Striving for quality improvement and innovation - Providing appropriate and worthy services - Manner of organizational administration
		Enhancement of Organizational Productivity	Enhancing organizational productivity - Increasing organizational profitability - Increasing efficiency, output, and greater effectiveness - Improving employee performance - Reducing organizational costs
		Organizational Ethics	Work ethics commitment - Respecting the dignity and status of patients and companions - Personnel belief in respect and striving for patient health - Having a work ethical conscience among employees - Attention to organizational ethics or work ethics - Utilizing work ethics committees in hospitals
		Organizational Justice	Observing respect and fairness towards clients - Making science, expertise, and facilities available - Behaviors and interactions of senior organizational levels - Fair behavior among all individuals - Preventing the violation of individuals' rights - Laying the groundwork for trust and belief
		Organizational Communication	Fostering cooperation between educational-medical centers - Providing a suitable ground for communication between healthcare providers and clients - Creating transparent and two-way communication - Interaction and cooperation within the organization - Team structure in organizational sections
		Development of Internal and External Communication	Establishing communication with individuals outside the organization and higher authorities - Relations with lower-level managers, frontline personnel, and middle managers - Developing interaction with the community and stakeholders - Forming clear and transparent communications
		Inter-Organizational Communication	Good inter-organizational communication - Effective communication with other organizations - Aligning individual goals with organizational goals through strong communication - Presence of various specialties
		Attention to Organizational Goals and Policies	Followers' adherence to cultural components and strategies - Prioritizing the organization's main goals - Determining fundamental policies and organizational vision and mission
		Organizational Discipline and Order	Administrative discipline - Obedience to hierarchy and superiors

**Table 3.** Open and Axial Coding of the Model for Promoting Appropriate Organizational Culture for Educational Medical Centers(Continued)

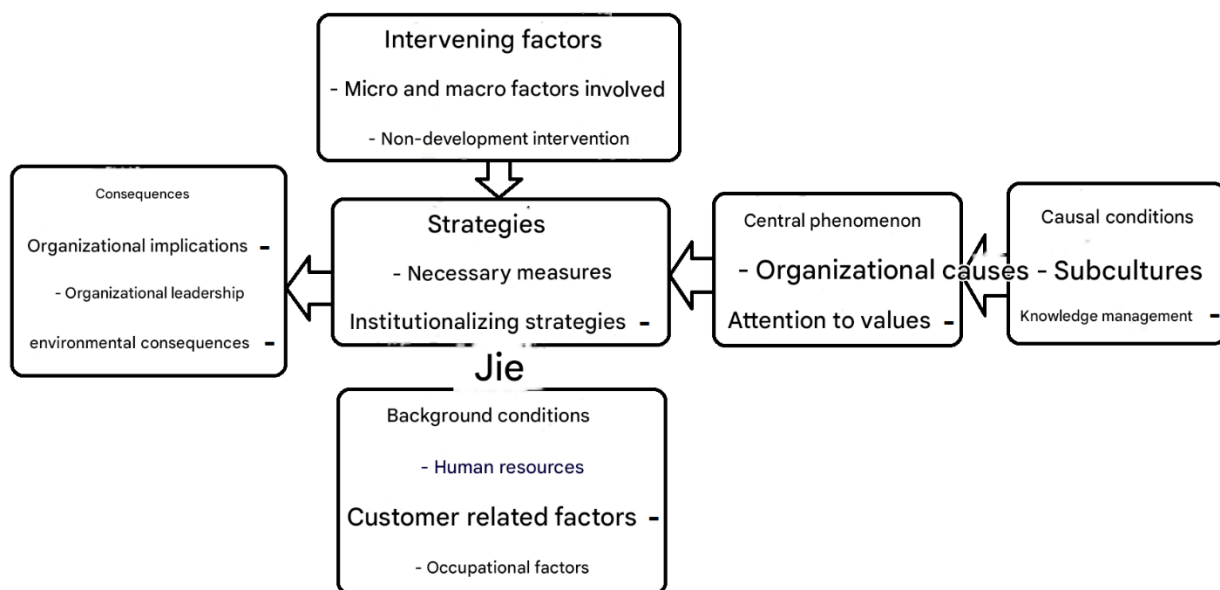
		Establishing a System for Criticism and Suggestions	Establishing a system for creativity, innovation, and suggestions - Implementing a suggestion system - Attention to the culture of change and non-resistance to change - Responding to doubts and shortcomings in the organization
		Having Clear Laws and Regulations	Having clear laws and regulations and adhering to them - Laws, regulations, and higher-level directives for coordination, control, and unity - Current laws and regulations - Clinical governance
		Attention to Safety	Creating a secure work environment for treatment and educational activities - Creating a sense of security and safety - Observing directives and communicated ethical principles - Safety of clients and employees - Accepting mistakes and reporting medical errors - Maintaining patient safety and risk management
Knowledge Management		Development of Learning Capacity	Learning and teaching - Sharing learnings - Organizational learning - Production of science and scholars
		Knowledge Sharing	Knowledge-oriented culture - Acquisition and sharing of job knowledge - Increasing reliable scientific references - Sharing information
		Innovation and Creativity	Creativity and innovation in the field of health and treatment - Engaging in innovation and creativity - Valuing and giving credit to creativity and innovation - Having a sense of risk-taking and an innovative spirit among employees
Core Phenomenon	Subcultures	Religious and Denominational Factors	Belief in shared values - Regional religious and denominational beliefs - Ideological and religious system - Attention to and preservation of human life from an ethical perspective
		Islamic Values	God-consciousness - Fulfilling religious and belief needs by providing means and places for worship - Attention to the religion and beliefs of the people - Observing dress codes - Having a jihadi spirit - Preserving cultural and Islamic proprieties - Observing cleanliness and honesty - Chastity and purity - Having dress code regulations - Establishing cultural affairs units
		Self-Sacrifice	Forgiveness and self-sacrifice - Culture of sacrifice, life dedication, altruism, and philanthropy - Compassion and self-sacrifice
	Attention to Values	Honesty and Integrity	Service to the body, soul, and spirit of humans - Loyalty - Personal humility
		Professional Ethics	Work commitment - Spirit of serving the people - Service without discrimination - Work conscience - Seriousness and hard work - Responsibility
		Individual Ethics	Accountability - Having a high social commitment - Discipline and good manners - Observing administrative decorum and etiquette
Consequences	Consequences of Culture in the Organizational Domain	Development of Organizational Cooperation	Gaining the satisfaction of internal forces - Enhancing the education and quality level of student forces - Improving the management level of educational-medical centers - Elevation and organizational promotion - Enhancing organizational processes with increased effectiveness
		Organizational Commitment	Commitment and loyalty to the organization - Commitment to the organization's noble values - Commitment to the medical center and observance of the organization's value principles - Having minimal conflict of interest and maximum collective benefit

**Table 3.** Open and Axial Coding of the Model for Promoting Appropriate Organizational Culture for Educational Medical Centers(Continued)

	Leadership and Organizational Management	Management Style	Caring management style - Mutual trust between manager and employees - Participatory management - Proper management
		Equipment Management	Optimal use of equipment and facilities - Management of resources and equipment - Increasing revenue with minimal cost for equipment
		Crisis Management	Crisis management style - Organizational adaptation to external environmental changes - Referral to specialized centers when treatment is not possible - Culture of risk management
	Consequences of Organizational Culture in the Environmental Sector	Attention to the Environment	Commitment to social responsibility - Constructive interaction with social stakeholders and environmentalists - Striving to gain reputation in society
		Cooperation with Organizations and Institutions	Gaining the satisfaction of the community and governing institutions - Cooperation with governmental and non-governmental administrations and institutions - Cooperation with stakeholders - Receiving accreditation from national accrediting bodies
		Attention to the Hospital Environment	Maintaining order and cleanliness of the hospital environment - Nutritional support and daily care cleaning - Creating a peaceful environment
Intervening Factors	Factors Involved in Organizational Culture at Micro and Macro Levels	Stakeholders	Organization's customers - Competing organizations - Ethnicity and religion
		Technology	Technologies used in hospitals - Providing new and advanced services with modern technologies
		Government	Governing laws and regulations - Macroeconomic situation - Country's economic growth - Effective national and ministerial evaluation of laws and higher-level documents
		Specialists	Specialists - Appointment of competent specialists - Arrangement of specialized personnel - Meeting the demand for specialized forces
		Organizational Subsystems	Organizational information systems - Organizational structure - Workflow between organizational subsystems - Control systems within the organization
		Organizational Culture Methods	Use of reward and punishment tools - Use of strategic planning - Reward and punishment system
		Management Ethics and Conduct	Method of organizational reward - Observance of standards and laws - Manner of treating employees
	Intervening Factors of Non-Development of Culture	Negative Cultural Dimensions	Ethnocentrism - Power inequality - Individualism - Flattery and sycophancy - Avoiding uncertainty
		Inefficiencies	Inefficiency of cultural units - Lack of honesty - Lack of honoring clients
		Unauthorized Interventions by Individuals	Conservatism - Interventions by irresponsible individuals - Negative influence of individuals with long work experience - Lack of connection between culture and work ethics and service quality
Strategies	Essential Actions for Strengthening Organizational Culture	Essential Actions in the Strategic Domain	Having a clear vision and perspective of the organization - Having top managers' belief in the existence and establishment of culture - Strong support from senior management for nurturing organizational culture - Modeling organizational culture - Specifying the values and beliefs of the hospital

**Table 3.** Open and Axial Coding of the Model for Promoting Appropriate Organizational Culture for Educational Medical Centers(Continued)

	Essential Actions in the Employee Domain	Delegating decision-making to employees - Involving employees in responsibilities - Determining criteria for encouragement and granting rewards - Having sufficient personnel force and financing personnel - Providing practical feedback for improving employee performance
	Essential Actions in the Organizational Domain	Requirements of educational-medical centers for culture to commit personnel - Requirements of educational-medical centers for competition and added value - Requirements of educational-medical centers for creativity and initiatives - Keeping culture dynamic - Establishing a culture of accepting criticism from personnel
	Essential Actions in the Domain of Resources and Equipment	Having adequate equipment - Up-to-date equipment
Strategies for Institutionalizing Organizational Culture	Identifying Competitive Forces	Understanding the environment and other influential forces in the future strategy of educational-medical centers - Analysis of the political and administrative environment - Utilizing opportunities and avoiding threats - Developing strategic plans - Continuous monitoring of organizational performance to achieve goals - Identifying and determining the fundamental values of educational-medical centers - Identifying obstacles and sources of resistance and developing strategies to overcome them - Institutionalization
	Human Resource Actions	Providing suitable human resources - Needs assessment from hospital personnel - Providing necessary resources for growth and development - Retaining and maintaining specialized and committed workforce - Increasing teamwork among employees - Personnel payments aimed at strengthening discipline and creativity - Creating reward systems to motivate employees - Identifying the motivational needs of employees
Managerial Actions		



**Figure 1.** Paradigmatic Model Presenting the Model for Promoting Appropriate Organizational Culture for Educational Medical Centers

**Table 4.** Results of Kolmogorov–Smirnov Test for Assessing Normal or Non-Normal Distribution of Data

Categories	Test Statistic	Significance Level
Causal Conditions	0.084	0.001
Central Phenomenon	0.087	0.001
Strategies	0.083	0.001
Intervening Factors	0.080	0.001
Contextual Conditions	0.079	0.001
Outcomes	0.074	0.002

Considering the significance level of all categories (sig<0.05), the data have a non-normal distribution and non-parametric conditions. Therefore, to examine and validate the designed model, Partial Least Squares (PLS) was used. To fit the overall model, the SRMR and GOF indices were used. In the strictest state, the SRMR index should be less than 0.08; this value for the saturated model was reported as 0.050, which is in a desirable state. The Goodness of Fit (GOF) index simultaneously examines the fit of the structural and measurement parts. This index can be calculated using the geometric mean of the R<sup>2</sup> index and the mean of the communality indices, and its formula is as follows;

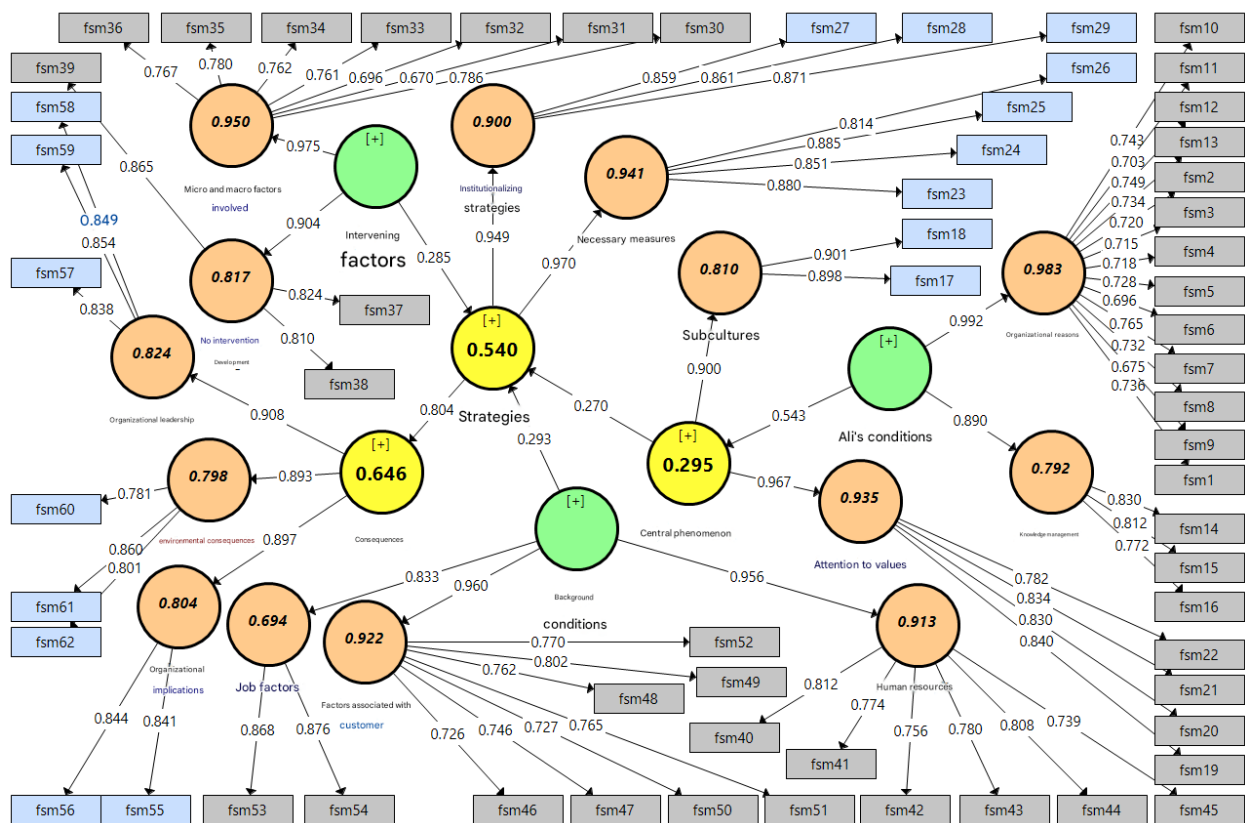
$$GOF = \sqrt{\text{Average (AVE)} \times \text{Average (R}^2\text{)}}$$

After performing the calculations, the value of the GOF index is equal to 0.535. Researchers consider the GOF

index at a level above 0.36 to be a strong indicator for model fit. Consequently, it can be said that the model's indicators have the necessary accuracy for measuring their respective categories, the model has good fit, and therefore they were entered into the final analysis.

Subsequently, in Fig. 2, the relationships between the research variables using the Partial Least Squares technique and Smart PLS software are shown, and also in Fig. 3, the T statistic value for the overall research model using the bootstrapping technique is shown.

According to the results obtained from the two diagrams, all paths are significant (all paths are greater than the critical value of 0.16 in the standardized coefficients state) and the T Value values are also not within the critical range of -1.96 to +1.96. Therefore, all paths are significant, and the research model has an appropriate fit, a summary of which is presented in Table 5.



**Figure 2.** Overall Research Model Using Partial Least Squares Technique

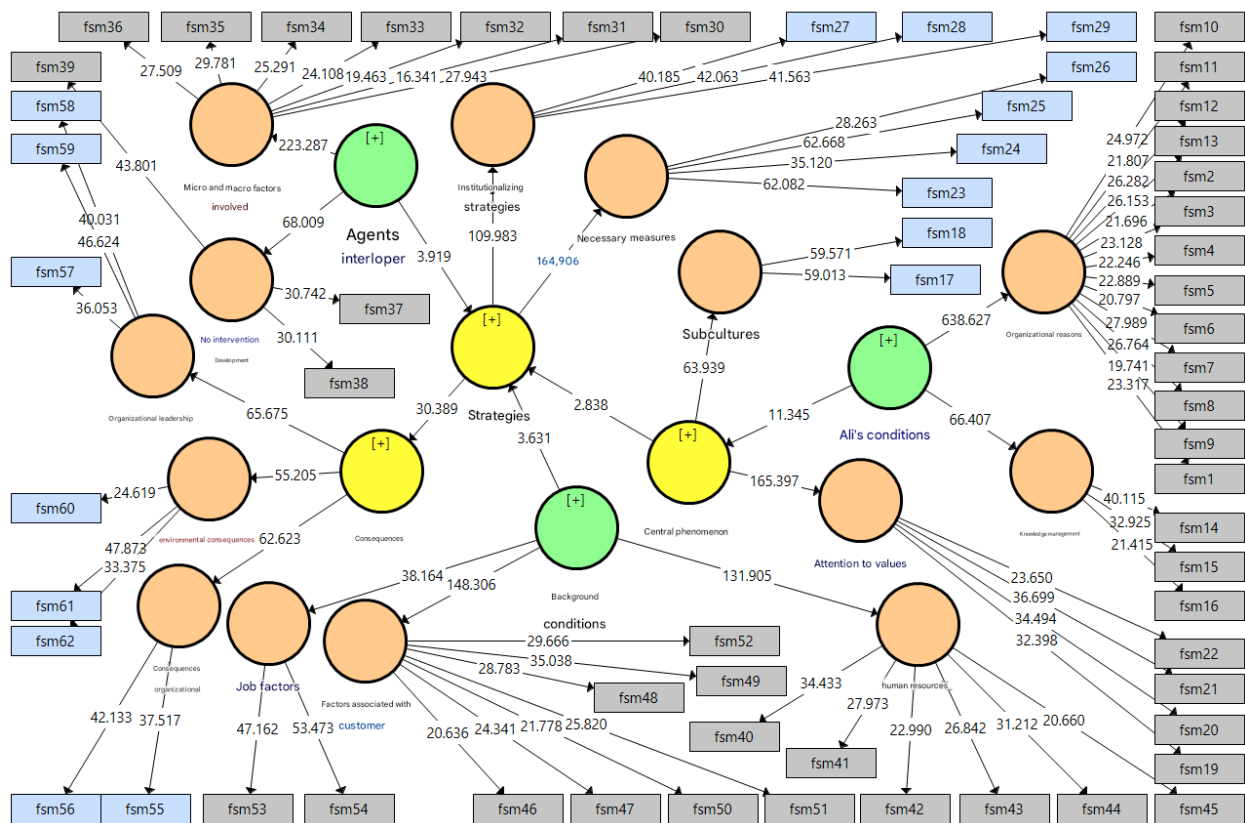


Figure 3. T Statistic of the Overall Research Model Using Bootstrapping Technique

Table 4. Path Coefficients in Both Standardized and T-Value Formats

Dimensions	Standardized Value	T Value
Central Phenomenon ← Causal Conditions	0.543	11.345
Strategies ← Central Phenomenon	0.270	2.838
Strategies ← Intervening Factors	0.285	3.919
Strategies ← Contextual Conditions	0.293	3.631
Outcomes ← Strategies	0.804	30.389

#### 4. Discussion

Causal conditions in this research include the two categories "Organizational Causes of Culture Development" and "Knowledge Management," which were identified as the main drivers for the formation and promotion of organizational culture in educational medical centers. Organizational causes of culture development refer to factors originating from the internal and organizational activities of these centers and directly influence the behavioral patterns and mindset of employees and managers. Teamwork, productivity enhancement, service quality improvement, and institutionalizing values such as ethics and organizational justice are among the components highlighted in this category. These elements provide the necessary ground for synergy and cohesion among employees and, by creating a platform for effective collaboration, facilitate the establishment of a desirable culture. In fact, organizations that reinforce a team-oriented culture,

organizational justice, and professional ethics are more effectively able to guide their employees' behaviors and attitudes towards the organization's macro goals. On the other hand, Knowledge Management is also raised as a key component in the causal conditions. Effective knowledge management in educational medical centers not only leads to improved service quality and increased organizational learning levels but also helps share experiences and knowledge between employees and managers and creates a platform for innovation and creativity. Indeed, a knowledge-based culture, by strengthening learning capacity, enhancing skills, and developing human resource capabilities, facilitates the process of institutionalizing organizational culture. Studies consistent with the findings of this section show that in treatment environments, organizational justice, teamwork, and service quality are important factors in promoting organizational culture (Kazemi M, Fanudi, 2009 and Szara et al, 2018). Also, another research has introduced the relationship between knowledge

management and organizational culture as a significant link and emphasized the necessity of developing knowledge-based infrastructure in healthcare organizations (Janavi, Rezaei, Poroushasb, 2020). From this perspective, the findings of the present research are aligned with previous studies and confirm the importance of the role of organizational structures and procedures in shaping the organizational culture of medical centers.

The central phenomenon of this research includes the two categories "Subcultures" and "Attention to Values," which were identified as the core of the organizational culture model in educational medical centers. The central phenomenon in grounded theory is the element around which other categories are formed and become dependent on it. In this research, subcultures emerged as part of the complex reality of these centers. Educational medical centers, due to the ethnic, religious, and professional diversity of their employees, witness the formation of subcultures that can be both an opportunity and a threat for establishing an integrated organizational culture. The findings show that religious and spiritual beliefs, observance of local cultural norms, and Islamic values such as God-consciousness, sacrifice, and preservation of Islamic decorum exist at the heart of employees' activities and daily interactions in medical centers and directly influence individuals' behavior and attitude towards the work environment and clients. These subcultures, if properly managed, can provide a platform for creating empathy, cohesion, and improving the quality of medical services. Also, attention to values, especially human and professional values such as honesty, responsibility, sacrifice, observance of professional ethics, accountability, and social commitment, are other main categories of the central phenomenon. These findings show that the presence or absence of these values among employees can lead to the formation or weakening of a desirable organizational culture in medical centers. Attention to professional and human values not only enhances the quality of medical service delivery but also affects the satisfaction levels of patients and employees. The importance of this category in treatment environments is doubled due to the human nature of activities and the need to observe ethical principles. Studies consistent with these findings indicate that in medical centers, the role of ethical values and social norms in consolidating employees' organizational behaviors is vital (Cicea et al, 2022, Sriyasak et al, 2024). Particularly, research shows that the presence of religious and cultural values in organizations leads to improved interpersonal interactions, enhanced work commitment, and client satisfaction (Parimi et al, 2024). This alignment between the results of the present research and the background literature emphasizes the importance of focusing on values and subcultures in the human resource

management policies and planning of educational medical centers.

The research findings showed that the strategies for promoting organizational culture in educational medical centers are classified into two key categories: "Necessary Actions to Strengthen Organizational Culture" and "Organizational Culture Institutionalization Strategies." Necessary actions to strengthen organizational culture include a set of targeted interventions at the organizational, human resource, and managerial levels, undertaken to create the necessary infrastructure for improving organizational culture. In this path, adopting a clear vision and the belief of senior managers in the importance and necessity of culture-building was identified as one of the essential prerequisites that can guide employee behavior and attitude towards the desired cultural model. Also, findings show that involving employees in the decision-making process, delegating authority to them, designing a performance-based reward system, and creating an environment to enhance motivation and creativity are among the steps that directly play a role in promoting organizational culture. Alongside these, attention to providing material and equipment resources and improving employees' working conditions was also identified as part of effective actions that can increase their job satisfaction and commitment to organizational culture. In the other part, organizational culture institutionalization strategies emerged as a long-term approach to stabilizing this culture in organizational structures. These strategies, focusing on analyzing internal and environmental organizational forces, formulating strategic plans, and identifying existing obstacles in the path of culture-building, lead to the stabilization and strengthening of the desired culture in educational medical centers. Institutionalization strategies also help create and maintain a dynamic and committed culture among employees by strengthening motivational systems, creating an open space for organizational learning, and encouraging innovation and teamwork. The findings of this section are aligned with previous studies, in a way that research shows organizations, to promote their culture, are inevitably forced to implement strategies at various human resource, managerial, and structural levels (Mannion and Davies, 2018). Also, studies emphasize that creating a learning environment, increasing employee satisfaction, and managerial support for culture-building are among the key actions for stabilizing and strengthening organizational culture in healthcare organizations (Parimi et al, 2024, Lee et al, 2024). This alignment indicates that the strategies identified in this research are in line with modern organizational culture management approaches globally.

The findings of this research show that intervening factors, as variables affecting the path of developing or

weakening organizational culture, were identified in two main groups: "Factors Involved at Micro and Macro Levels" and "Intervening Factors of Non-Development of Culture." Intervening factors at the macro level include external environmental elements such as the role and policies of the government, the influence of governing laws and regulations, the country's economic conditions, and technological developments in the field of healthcare. These factors can facilitate or limit the process of institutionalizing organizational culture by creating legal frameworks, financial support, or even external pressures. For example, the existence of specific laws and policy-maker support at the national level for implementing patient safety culture or attention to patient rights charters can have a facilitating role. On the other hand, factors such as economic fluctuations and budgetary challenges at the national level may confront this process with serious obstacles. At the micro level, factors such as the role of specialists and their level of competence, the quality of organizational information and control systems, and human resource management style can play a role in the process of forming or strengthening organizational culture. Findings show that the manner of arranging and appointing specialized personnel, the level of synergy among organizational subsystems, and even managerial methods (such as the presence or absence of a reward and punishment system or the degree of adherence to managerial standards) are among the factors that can directly impact employees' commitment to organizational culture and its effectiveness. Alongside these, inhibitory intervening factors, which in this research are known as "Intervening Factors of Non-Development of Culture," were also identified as cultural and organizational obstacles. Findings show that the existence of negative subcultures such as ethnocentrism, individualism, power inequality, conservatism, and flattery can be a serious obstacle to institutionalizing a desirable culture in educational medical centers. Also, inefficiency of cultural units, lack of respect for clients, interference of irresponsible individuals in decision-making processes, and deviation from professional ethical standards are other inhibitory factors in this path that can disrupt organizational culture and cause a qualitative decline. The alignment of the findings of this section with the existing background is clearly observable. For example, previous research emphasizes that in treatment environments, the role of external factors such as governmental policies, technology, and macro-cultural values is very important in shaping organizational culture (Cicea et al, 2022). Also, studies have shown that a lack of cohesion among subcultures or managerial inefficiencies can cause internal conflicts and weaken organizational culture in treatment environments (Lee et al, 2024, Cohen and Ezer, 2013). The alignment of these findings with the present research indicates that educational medical centers, in addition to

internal factors, must pay special attention to external macro variables and cultural obstacles to be able to follow a successful path in institutionalizing organizational culture.

Contextual conditions in this research are the backgrounds that influence the selection and implementation of cultural strategies in educational medical centers and include three key categories: "Promoting Culture in the Human Resources Domain," "Customer-Related Factors," and "Job-Related Factors." These conditions, as environmental and organizational infrastructures, are considered facilitators or limiters of the path of organizational culture development in these centers. The category "Promoting Culture in the Human Resources Domain" indicates the importance of attention to employees as the main axis of the success or failure of any cultural program. Findings show that factors such as employee empowerment, creating job motivation, improving the work environment, supporting human capital, and observing justice among employees are among the key components of this part. In fact, organizations that focus on developing their human resources and implement policies such as increasing job satisfaction, preventing job burnout, providing a healthy work environment, and creating a sense of mutual trust among employees will be able to implement a more sustainable organizational culture. On the other hand, the category "Customer-Related Factors" emphasizes the importance of customer orientation and improving the quality of medical services. Findings show that observing patient rights charters, attention to fairness in dealing with patients, confidentiality of patient treatment information, and strengthening patient safety culture are all important contextual factors in this domain. A desirable organizational culture in educational medical centers is achieved when these centers, in addition to ensuring employee satisfaction, pay special attention to patient satisfaction and safety and design and implement treatment processes based on human values and respect for patient dignity. Finally, the category "Job-Related Factors" refers to aspects of organizational culture related to working conditions, payment structures, evaluation systems, and job fit of employees. These findings showed that providing fair and timely payment systems, designing opportunities for job and career development for employees, and enhancing person-job fit play a significant role in strengthening a positive organizational culture. When employees feel that the organization values their well-being and professional development, their level of commitment and willingness to accept and implement organizational culture increases. This part of the findings is consistent with the results of previous research; such that past studies have also emphasized the importance of the role of human resources, payment systems, and quality services in developing organizational culture (Mannion

and Davies, 2018, and Kazemi M, Fanudi, 2009). Also, other studies have shown that providing a healthy work environment and enhancing organizational communication with patients have a significant impact on the success of organizational culture in medical centers (Parimi et al, 2024, Lee et al, 2024). This alignment of findings confirms the necessity of simultaneous attention to human and customer-oriented dimensions in promoting the organizational culture of educational medical centers.

The outcomes resulting from promoting organizational culture in this research are classified into three main categories: "Outcomes of Culture in the Organizational Domain," "Leadership and Organizational Management," and "Outcomes of Organizational Culture in the Environmental Sector." These outcomes show that developing a positive organizational culture in educational medical centers has multi-layered results beyond the individual and intra-organizational level and leads to the improvement of the entire treatment system's performance and its interaction with the surrounding environment. At the first level, "Outcomes of Culture in the Organizational Domain" include promoting inter-departmental collaboration, improving educational and treatment processes, increasing organizational effectiveness, and employees' commitment to organizational goals and values. Findings show that medical centers with a strong organizational culture benefit from greater cohesion between employees and managers, and their work processes are executed in a more orderly, efficient manner with a focus on patient and client satisfaction. This organizational commitment leads to a reduction in internal conflicts and increased productivity at various organizational levels and provides a suitable platform for organizational growth and development. At the second level, outcomes also impact "Leadership and Organizational Management," and participatory management style, mutual trust between managers and employees, and improvement of resource and crisis management systems are considered the most important achievements of promoting organizational culture. Findings indicate that with the promotion of organizational culture, managers show a greater tendency to use transformational and participatory management styles, and the organization steps on the path of development with the least resistance and the most interaction. Also, a desirable organizational culture leads to optimal use of resources and equipment and increases the centers' capability in facing crises. At the third level, "Outcomes of Organizational Culture in the Environmental Sector" refers to the organization's interactions with external stakeholders and the surrounding environment. Results show that educational medical centers with a healthy organizational culture, by

promoting social responsibility, improving interaction with governing institutions and other related organizations, and attention to the environment and public welfare, have a positive impact on society and the environment outside the organization. Such centers gain more credibility with national and local institutions and can achieve a better position in the health system network. The alignment of these findings with the research background is quite evident, as previous research emphasizes that organizations with stronger culture have higher levels of organizational commitment, productivity, improved service quality, and positive interactions with the external environment (Parimi et al, 2024, and Sriyasa et al, 2024). Also, studies have emphasized the role of organizational culture in improving leadership styles and enhancing crisis management capability in healthcare organizations (Parimi et al, 2024, Cohen and Ezer, 2013). This alignment places the findings of this research in line with valid global and domestic results and confirms the importance of the role of positive organizational culture outcomes in the long-term survival and effectiveness of educational medical centers. Limitations of this research include its focus on educational medical centers in East Azerbaijan province, which, due to the specific cultural, social, and organizational characteristics of this province, may create limitations in fully generalizing the results to other regions of the country. Another limitation was access to some key managers and experts due to high workload and time constraints, which may have affected the diversity of some perspectives.

Finally, according to the results of this research, it is suggested that educational medical centers in the country, to promote their organizational culture, formulate and implement planned and strategic programs at three levels. First, at the organizational level, managers should focus on improving teamwork, organizational justice, developing employees' communication skills, and strengthening motivational systems to lay the groundwork for a positive and sustainable organizational culture. Second, at the human resource level, it is necessary to continuously emphasize employee empowerment, creating a safe work environment, and supporting their mental and physical health. Third, at the environmental and macro level, organizations should develop their organizational culture in a way that aligns with the religious, social, and professional values of society by improving interaction with stakeholders, observing social responsibilities, and strengthening external communications. It is also suggested that health policy-makers and medical universities provide the ground for institutionalizing this culture in medical centers by formulating strategic guidelines and macro support.

**Authors Contribution**

All the authors have participated sufficiently in the intellectual content, conception and design of this work or the analysis and interpretation of the data (when applicable), as well as the writing of the manuscript.

**Availability of data and materials**

The data that support the findings of this study are available from the corresponding author, upon reasonable request.

**Conflict of interests**

The author states that there is no conflict of interest

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