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Original Article

Identifying and Explaining the Motivational Keys for Physicians' Teaching: A Synthesis Study

Khaironnesa Ramazanzade[1*], Nahid Azdaki[2,3]

[1]Department of Education and Psychology, Faculty of Education and Psychology, University of Birjand, Birjand, Iran
[2]Cardiovascular Diseases Research Center, Birjand University of Medical Sciences, Birjand, Iran
[3]Clinical Research Development Unit, Razi Hospital, Birjand University of Medical Sciences, Birjand, Iran

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***Corresponding author:**
Department of Education and Psychology, Faculty of Education and Psychology, University of Birjand, Birjand, Iran.
Email: ramazanzde.kh@birjand.ac.ir

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Abstract

Background: Understanding factors that shape physicians' motivation to teach is essential for optimizing educational outcomes in medical education.

Objectives: This research aimed to synthesize qualitative evidence to uncover how individual, interpersonal, cultural, and structural elements influence teaching engagement among physicians.

Methods: A qualitative evidence synthesis of 26 peer-reviewed articles was performed using a three-phase thematic synthesis approach (data extraction and coding, thematic grouping, and abstraction). Studies were identified via a systematic search of PubMed, Scopus, Web of Science, SID, Magiran, and Google Scholar for publications in English or Persian from 2000 onwards. Articles focusing on clinical physicians' teaching motivation and available in full text were included, whereas non-research formats and studies on other professionals were excluded. Methodological quality was ascertained using the CASP checklist to ensure rigor and transparency.

Results: The synthesis yielded five interrelated themes: i) personal characteristics, ii) student-related factors, iii) cultural and social values, iv) organizational and managerial influences, and v) educational structural conditions. Among these, personal characteristics including intrinsic motivation, pedagogical commitment, and altruistic values emerged as the most prominent drivers of teaching motivation. Further, students' performance and feedback, societal appreciation for educators, as well as institutional leadership and reward systems were identified as reinforcing elements.

Conclusion: Physicians' motivation to teach is a dynamic construct influenced by a complex interplay of personal, cultural, and institutional factors. Establishing academic environments that foster growth, recognize contributions, and implement supportive policies is critical for sustaining teaching motivation. These insights can inform targeted interventions and policy reforms aimed at strengthening the educational mission of medical institutions.

Keywords: Motivation; Teaching; Physicians; Faculty; Medical; Education

Background

Today, higher education is considered the foundation for economic, social, political, and cultural development (1). Medical education is critical given its direct link to community health (2), with clinical education serving as a critical phase where students apply learned concepts in practice. It includes learning-facilitating activities that contribute to measurable changes in students' clinical performance (3). A significant challenge is the gap between theoretical knowledge and practical skills (4, 5). Advanced clinical education bridges this gap and underpins medical science education (6), aiming to prepare professionals capable of delivering high-quality, evidence-based care (7). Therefore, educational quality is crucial, especially regarding the fact that in today's fast-paced healthcare environment, continuous learning and curricular reforms are essential (8-10). Such reforms also affect faculty roles, often creating challenges, as good teaching

heavily impacts students' knowledge and performance (11, 12).

This study, therefore, focuses on physicians as clinical teachers as well as the factors influencing their motivation to teach. Motivation, though complex, is broadly defined as the energy driving individuals to act (13). Williams and Burden distinguished two aspects of motivation: the initiation of motivation, which pertains to the reasons for performing something and the decision to act, along with sustained motivation, which refers to the effort to continue or maintain an activity (14).

Various theories including those of Maslow, Herzberg, Vroom, Adams, and Skinner provide foundational frameworks for understanding motivation (15). Among these, Herzberg's two-factor theory (16), and Vroom's expectancy theory have been particularly influential. Since the late 1990s, research on teacher motivation has expanded, with a major milestone being the 2008 special issue that linked motivational theories to teaching practice (17). Sinclair defines teacher motivation as what attracts individuals to teaching, sustains their training, and supports professional engagement (18). The CanMEDS Framework also underscores physicians' role in lifelong learning and knowledge dissemination (19, 20).

Since teaching often lacks financial rewards and may even impede promotion, understanding faculty motivation is essential for sustaining a strong educational workforce (21). Faculty motivation is associated with participation in development activities as well as best practices, both critical for integrated curricula reforms (22, 23). Studies indicate physicians are mainly driven by intrinsic factors such as altruism, intellectual satisfaction, skill development, and shaping future physicians (24-26), while extrinsic motivators include career advancement, salary, and academic requirements (27-29). Intrinsic motivation is often stronger than extrinsic (30), though barriers such as lack of compensation, time, and confidence remain (24). Note that organizational structure, curriculum design, and leadership further influence motivation (31).

Several studies have explored physicians' teaching motivation, the findings remain scattered and fragmented. Nevertheless, there remains a lack of understanding of the various intrinsic and extrinsic factors as well as the contextual conditions influencing physicians' engagement as clinical teachers. In order to address this gap, synthesizing the available qualitative evidence can provide a more integrated and thorough insight into these factors. By focusing on physicians' teaching motivation, this study aims to advance research on the underlying determinants of engagement in clinical teaching. The results may also offer valuable guidance for curriculum designers, educational leaders, and academic administrators. The purpose of this qualitative evidence synthesis (QES) is thus to systematically synthesize the existing evidence to identify as well as examine the factors affecting physicians' motivation to teach.

Objectives

This research aimed to synthesize qualitative evidence to uncover how individual, interpersonal, cultural, and structural elements influence teaching engagement among physicians.

Methods

Design

This study has been a synthesis of qualitative evidence. QES was chosen for this review as it utilizes an interpretive process that aims to expand understanding of a phenomenon through identifying themes and constructs in qualitative studies (32). The purpose of this qualitative evidence synthesis was to explore factors influencing physicians' motivation to teach. Following the thematic synthesis approach described by Thomas and Harden (33), the analysis involved open coding of qualitative findings, grouping codes into categories, and developing analytical themes, the main stages of which are summarized in Table 1.

Information Sources: A systematic search of the databases PubMed, Scopus, Web of Science, and ScienceDirect was undertaken after consultation with a medical information specialist to retrieve the most relevant studies. PubMed was employed to broaden the scope of health-related journals included in the search. Scopus was searched as it includes educational research that may not be indexed in traditional health databases such as PubMed. Since the topic was not strictly biomedical or health-related but also encompassed education and social sciences, Scopus was relevant. The Persian databases SID and Magiran were also explored. Google Scholar was additionally searched to guarantee a comprehensive search. The search was restricted to studies published in English or Persian from 2004 onwards.

Search Strategy: A comprehensive search strategy was developed and iteratively adapted for each database in consultation with a medical information specialist. We combined controlled vocabulary (e.g., MeSH in PubMed) and free-text keywords, applying Boolean operators, truncation, and parentheses to maximize sensitivity and

specificity. For instance, the PubMed search combined MeSH and text-word terms as follows:

("Teaching"[Mesh] OR teach*[tiab] OR "clinical teaching"[tiab]) AND ("Motivation"[Mesh] OR motivat*[tiab] OR "teaching motivation"[tiab]) AND ("Physicians"[Mesh] OR physician*[tiab] OR doctor*[tiab] OR clinician*[tiab]).

Searches were performed in PubMed, Scopus, Web of Science, SID, Magiran, and Google Scholar, and were limited to English and Persian publications from 2000 onwards. The full search strings for PubMed and Scopus as well as the adapted strategies for the other databases are provided in Appendix A for ensuring transparency and reproducibility.

Study Selection: Following the search, all references were imported into Zotero, with duplicates removed. Both authors applied the inclusion and exclusion criteria in two stages: 1. title and abstract screening, and 2. full-text review. Articles were included if they had:

- focused on teaching motivation and its influencing factors/ focused on clinical physicians/ were published in English or Persian/ were published after 2000 / had full-text access available

Articles were excluded if they had focused on:

- other health professionals/ motivation in areas other than teaching

Formats such as editorials, letters to the editor, book chapters, conference proceedings, or publication types other than a research article. Any disagreements between the authors were discussed, with a final decision made through consensus. A manual search of the reference lists of included articles was performed to identify any missed studies. Identified articles from the reference lists were also subjected to title and abstract screening as well as full-text review.

Article Screening and Data Extraction

The PRISMA statement (34) guided the documentation of the search and selection process. Following identification, both authors conducted a critical appraisal and extracted key characteristics for all articles, which were entered into a spreadsheet. The reliability and methodological rigor of the included studies were ascertained using the Critical Appraisal Skills Program (CASP) tool for qualitative studies (35), providing a systematic, criterion-based, and transparent method for evaluating research articles (36). Each study was independently appraised by two reviewers across the CASP domains (e.g., clarity of aims, appropriateness of methodology, recruitment strategy, data collection, reflexivity, ethical considerations, rigor of data analysis, and value of findings). Based on these criteria, studies were classified as high, moderate, or low quality. Any discrepancies in judgment between the two reviewers were resolved through discussion until consensus was reached, thereby ensuring reproducibility of the appraisal process.

Data Synthesis: The key themes of the articles were identified using thematic analysis, via an inductive process in order to generate key ideas and aggregate findings to establish a set of final themes (37). Both authors reviewed the themes, with discussions were to reach consensus on the final themes**.** In order to ensure the credibility of the findings, a medical education expert outside the research team reviewed the initial codes and categories. In cases where discrepancies arose between researchers, the team would hold iterative discussions to compare interpretations and clarify meanings. Disagreements were resolved through consensus meetings in which all members presented their reasoning, with final decisions made when full agreement was reached. The external expert provided additional feedback during this process, whereby adjustments were incorporated accordingly.

Table 1. Process of Completing the study approach

Step	Description
Research question	What are the motivational keys for physicians' teaching?
Database search	PubMed, Web of Science, Scopus, ScienceDirect
Screening and eligibility	After 2004, English/Persian, peer-reviewed
Data extraction	Codes developed from texts
Thematic synthesis	Codes → Subthemes → Themes

Results

A total of 926 records were identified through the database. After removing duplicates, following title and abstract screening as well as full-text review, 26 articles were included in the final analysis. Figure 1 displays the PRISMA flow diagram, visually depicting the search, screening, and selection process. The detailed characteristics of the included studies are provided in Appendix B.

The analysis of the codes derived from the synthesis of the articles demonstrates that five factors influence physicians' teaching motivation:

1. Personal Characteristics
2. Characteristics and Professional Performance of Students
3. Cultural Factors with Social Values in Teaching
4. Managerial and Organizational Factors

Educational Structure

1. Personal Characteristics

The analysis of the codes derived from the synthesis of the articles reveals that five factors related to individual characteristics affect teacher motivation: Personal Interests, Professional Experience, Intrinsic Motivation, Teaching Skills and Competence, and Altruistic Values, as outlined in Table 2.

These findings suggest that physicians' personal traits are fundamental in shaping their engagement in teaching. For instance, those with a strong intrinsic interest in education and relevant professional experience are more likely to invest time and effort in pedagogical activities.

Competence in teaching skills and a commitment to altruistic values further reinforce motivation, demonstrating that personal characteristics provide both the initial drive and sustained commitment required for effective clinical teaching.

2. Characteristics and Professional Performance of Students

The analysis of the scientific evidence also exhibited that learners can impact physicians' motivation to teach. Factors including student competence, their interaction styles with instructors, and the feedback they provide can either boost or diminish physicians' motivation to engage in teaching (Table 3).

Overall, students' characteristics and professional performance play a key role in shaping physician educators' motivation. Competent and engaged students who actively participate as well as provide constructive feedback tend to reinforce physicians' commitment to teaching. Conversely, challenging interactions or a lack of preparedness can lower motivation, highlighting that effective teaching depends on both the instructor's and the learners' active involvement.

3. Cultural Factors with Social Values in Teaching

The findings suggest that the value of cultural factors, or the social values of teaching, significantly affects physicians' motivation to teach. These factors include the respect that patients have for physicians who adopt teaching roles, the significance of helping peers as well as educating the next generation, and viewing teaching as a form of advocacy. Further, effective communication and networking with colleagues would provide valuable opportunities that further enhance motivation (Table 4).

Overall, social and cultural values strongly shape physicians' engagement in teaching. Recognition and respect from patients, the desire to support peers and mentor future generations, as well as the perception of teaching as a socially responsible activity all reinforce motivation. Further, opportunities for professional networking and effective communication with colleagues enhance physicians' commitment to education, indicating that cultural and social factors provide both intrinsic and extrinsic encouragement for teaching activities.

4. Managerial and Organizational Factors

The appreciation of universities for educational services significantly impacts teaching motivation, including the valuation of educational activities on par with clinical services along wioth the effectiveness of the reward system. The necessary issues include a supportive structure within the university, characterized by a hierarchical framework that facilitates teaching, the utilization of effective educational leaders, as well as the strengthening of organizational commitment. Further, an impartial and fair reward system, alongside the alignment between educational and financial rewards, plays a critical role. The provision of necessary facilities and resources, such as aligning educational activities with financial compensation, as well as ensuring adequate human resources, space, and facilities, also contributes to enhancing physicians' motivation to teach (Table 5). In summary, managerial and organizational factors function as key drivers of physicians' motivation to teach. Institutional recognition of teaching efforts, effective leadership, fair and transparent reward systems, and the availability of adequate resources all reinforce educators' commitment. Together, these elements establish an environment where teaching is valued, supported, and aligned with both professional and financial incentives, thereby maintaining motivation over time.

5. Educational Structure

One of the findings from the synthesis of the research demonstrates that effective policy-making plays a key role in influencing physicians' motivation to teach. This includes the flexibility of educational programs, establishment of clear policies regarding the instructor's educational role, and alignment of educational credits for promotion with teaching workload and time. Further, it is essential to maintain a balance between a heavy clinical workload and educational responsibilities.

This involves considering factors such as clinical Workload, time management, clinical supervision systems, as well as the presence of supervisory and feedback mechanisms. Further, the standardization of national medical education policies and procedures, along with clear educational guidelines, significantly contributes to the professional development of

educators, thereby boosting their motivation to engage in teaching. (Table 6).

In summary, the structure of educational programs and institutional policies plays a central role in motivating physicians to teach. Flexibility in scheduling, precise role definitions, fair alignment of promotion criteria with teaching effort, as well as the presence of supportive supervision and feedback mechanisms collectively enable educators to strike a balance between clinical and educational responsibilities. In addition, standardized national policies and clear educational guidelines provide a framework for professional growth, reinforcing physicians' commitment to teaching.

Based on the thematic synthesis of the extracted codes, a conceptual model was developed to demonstrate the key motivational factors influencing physicians' teaching, as presented in Figure 2.

Discussion

This study advances a nuanced and integrative perspective on the multifactorial nature of physicians' teaching motivation. Moving beyond fragmented or unidimensional explanations, our synthesis indicates how individual, interpersonal, and structural elements interact dynamically to shape medical educators' engagement. Rather than isolating motivation as a fixed personal trait, the findings highlight its malleability within specific educational, organizational, and sociocultural contexts.

Contrary to the conventional view of intrinsic motivation as fixed, physicians reshape their motivation through via experiences, recognition of educational roles, and student feedback. This highlights the dynamic nature of personal motivation as well as its potential for development through targeted interventions. Personal characteristics such as intrinsic motivation (53), professional experience, and altruistic values play a key role in fostering a commitment to teaching. These attributes can be promoted during medical training (40), with the hidden curriculum shaping teaching motivation (60). Physicians who are passionate about their subject matter and with strong teaching skills [38] tend to inspire students and engage meaningfully in educational activities.

Students also play an active role in shaping physicians' motivation to teach. The quality of student-teacher interactions, student feedback, and student attitudes directly influences engagement. Positive feedback (39) and collaborative interactions foster enthusiasm, while negative experiences may lower motivation. Thus, it is essential to equip students with strong communication skills and create systems for constructive bidirectional feedback (43). The societal valuation of medical teaching, as reflected in respect from patients, colleagues, and the wider community, is a critical yet underexplored source of motivation. This recognition shapes physicians' professional identity and engagement in teaching. Cultural and social factors, such as patients' esteem for physicians who teach (40), intrinsic satisfaction gained from mentoring and training future healthcare professionals (49), and supportive peer networks (44), would further reinforce motivation by creating positive feedback loops.

A novel contribution of this study lies in its analysis of organizational structures, especially the alignment between educational efforts and rewards, as well as the availability of tangible support mechanisms. Symbolic recognition alone is insufficient; reward systems need to align with actual teaching; they create an environment where teaching is prioritized. Whereas financial incentives are important, recognition, supportive leadership, and structured organizational frameworks are often more valued (50).

Leadership plays a particularly central role. Effective leaders understand team members' needs and tailor motivational strategies accordingly. They balance respect, courage, supportiveness, passion, and relationship-building skills, establishing an environment where physicians feel valued and motivated (41, 49).

Another structural determinant is the lack of clear policies regarding educational roles as well as the misalignment between teaching effort and professional recognition. This misalignment, as highlighted by Zidjali & Moosa (2022), diminishes motivation and undervalues teaching (49). National-level policy reforms are required to clarify roles, align workload with credit, and enhance flexibility in teaching programs (52). Balancing clinical and educational duties is vital for sustained motivation. Supervisory practices modeled following clinical frameworks should emphasize consistent, constructive feedback (61), ameliorating both teaching quality and learning outcomes. Our findings align with recent developments in medical education assessment, such as the REFLECT scale, which underscores the importance of structured feedback mechanisms in fostering a supportive educational environment as well as enhancing teaching motivation among physician educators (62)

The conceptual model in Figure 1 integrates five key dimensions influencing physicians' teaching motivation: personal characteristics, student-related factors, cultural and social values, managerial and

organizational factors, and educational structure. Personal attributes such as pedagogical and clinical knowledge, teaching skills, and intrinsic interest in education establish the basis for student interaction and engagement, while buffering adverse effects of weak organizational structures or heavy workloads. Competent and engaged students, constructive feedback, respect from patients, social responsibility, and the desire to mentor the next generation further boost motivation. Effective leadership, fair and transparent reward systems, and adequate resources also promote a supportive environment.

Overall, the model indicates that teaching motivation emerges from the dynamic interplay of individual, social, and organizational factors. Physicians' personal and professional attributes moderate limiting factors, highlighting that fostering intrinsic skills and interests boosts resilience and commitment to teaching, even under structural challenges.

In spite of efforts to comprehensively review the literature, some unpublished or grey literature may not have been captured, which could have offered additional insights. Recognizing this gap is essential for proper interpretation of the findings and guiding future research on physicians' motivation to teach. To address this issue, future studies should actively include unpublished, grey, and non-English/Persian literature, in addition to published studies, in order to provide a more comprehensive understanding. Employing mixed-methods approaches that integrate both qualitative and quantitative data can further augment the validity and generalizability of the findings. Ultimately, fostering closer communication with physicians and creating opportunities for sharing experiences can deepen understanding of the challenges and motivations associated with teaching in this profession.

Conclusion

This study offered a comprehensive examination of the multifaceted nature of physicians' teaching motivation, highlighting the dynamic interactions among personal characteristics, student-related factors, cultural and social values, managerial and organizational influences, as well as educational structures. The findings demonstrated that teaching motivation extends beyond individual traits, being profoundly shaped by the broader educational, organizational, and sociocultural contexts in which physicians operate. Our analysis revealed that motivation arises from a complex interplay of individual, interpersonal, and structural factors. Notably, this study introduced an integrated model that would elucidate the interrelationships between these dimensions and identify potential targets for policy interventions. The results underscore that strategies to boost teaching motivation should not focus solely on personal attributes; they must also involve the development of supportive institutional frameworks, implementation of targeted policy reforms, and promotion of cultural and professional recognition of physicians' educational roles.

Implications for key stakeholders

- **Educational development center directors** should organize practical training programs for faculty with a focus on teaching skills, effective teacher-student communication, and instructional strategies. These programs should start during residency training and continue throughout the faculty career, ensuring that educators are well-prepared to engage students and deliver high-quality education.
- **Educational leaders** should foster supportive mentorship, establish transparent feedback mechanisms, and create a positive environment that recognizes pedagogical contributions. Leaders should tailor motivational strategies to individual faculty needs, facilitating engagement even under challenging workloads.
- **Academic administrators** should implement fair and transparent reward systems that value teaching on par with clinical services, provide necessary resources, and institutionalize recognition of educational efforts to promote long-term commitment.

Future Research: Future studies should adopt mixed-method designs and include diverse geographic as well as cultural contexts to capture systemic and cultural determinants of physicians' teaching motivation. Such research can further validate the integrated model presented in this study and guide evidence-based policy along with practice interventions.

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Ethical approval: This study was primarily a research synthesis based on existing data and published studies, and it forms part of a mixed-methods study performed under the supervision and approval of the Research Ethics Committee of the University (IR.BUMS.REC.1403.322).

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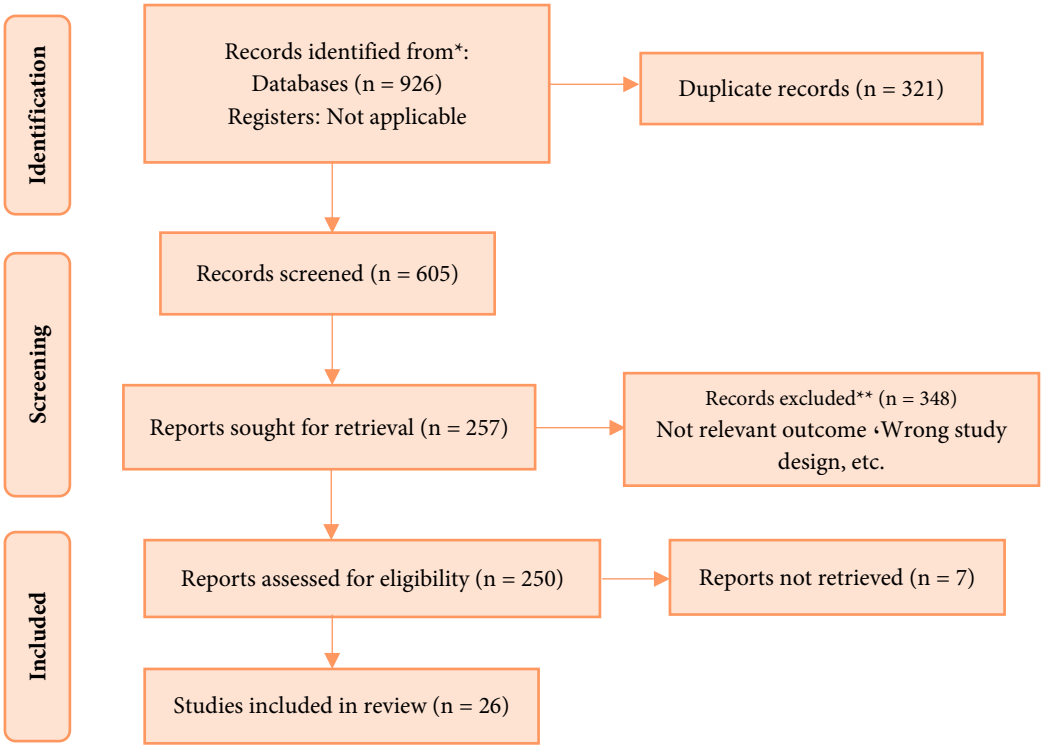

Figure 1. PRISMA Flow Diagram of the Study Selection Process

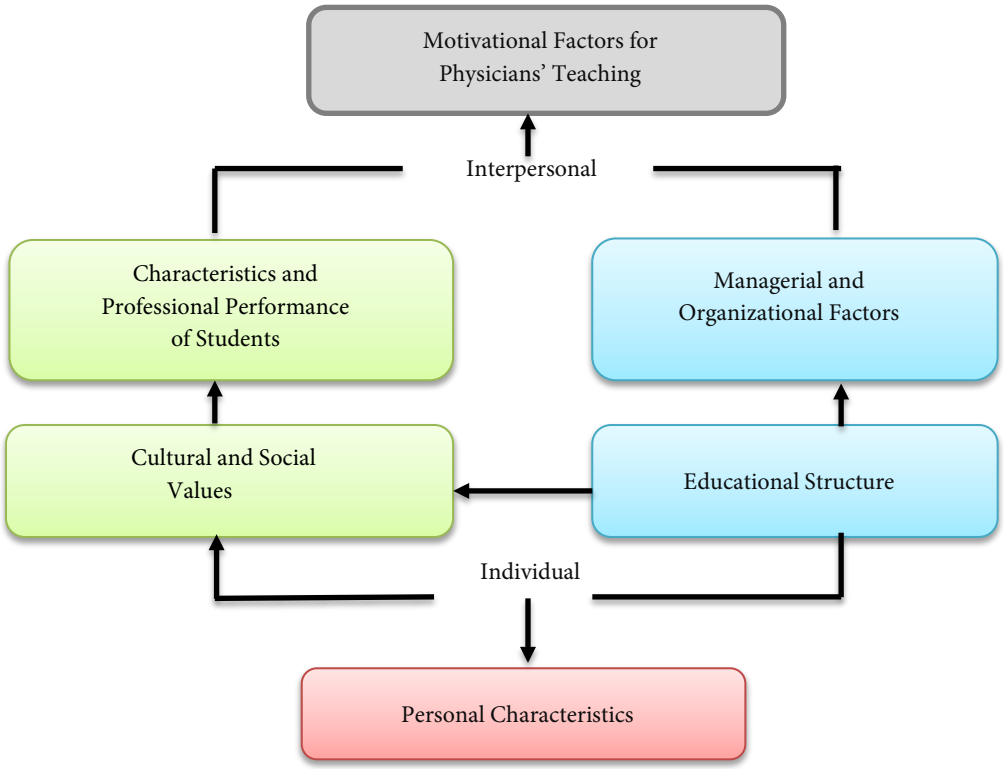

Figure 2. The key motivational factors influencing physicians' teaching

Table 2. The process of analyzing and coding the theme of Personal Characteristics

Main Category	Subcategories	Open Code (Source)
Competence	Pedagogical Competence	Preparedness (38), Personal Skills (24), Improving Confidence in Teaching Abilities (39), Lack of Adequate Teaching Qualifications (40)
	Instructor's Academic Competence	Sufficient Knowledge of Teaching Challenges (41), Understanding the Subject Matter Being Taught (42)
Experiences	Negative and Positive Experiences During Education	Gaining Positive Experience During My Practice, Negative Experiences During My Training (40)
Interests	Exchange of Experiences and Learning Opportunities	Understanding of Roles by Peers (41), Sharing of Expertise (43), Mutual Knowledge Exchange Willingness to Share Knowledge and Promote Future Physicians (44), Knowledge Sharing (45), Desire to Transfer Knowledge, Concern About the Effectiveness of Teaching (46), Knowledge Transfer as a Duty of Physicians (31), Willingness to Convey Information, Knowledge Transfer (42), Knowledge Sharing and Benefits from Shared Knowledge (40)
	Desire for Personal and Professional Growth	Desire to Update Clinical Knowledge, Opportunity to Transfer Skills and General Knowledge (47), Staying Current (43), Opportunity to Keep Up with the Latest Knowledge, Further Education (44), Truth-Seeking (24), Need to Maintain and Expand Knowledge Base (48), Improving One's Own Knowledge (26), Enjoying One's Own Learning (46), Impact of Teaching on Personal Growth as a Clinical Educator (49), Enrichment of Medicine Through Teaching (25), Desire for Further Teaching (39), Staying Updated on Medical Information, Facilitating Access to Evidence-Based Information (40)
	Passion for Teaching	Desire to Provide Better Education, Personal Interest (41), Interest in Clinical Teaching (50), Enjoyment of Teaching (47), Personal Satisfaction from Teaching (48), Intrinsic Joy of Teaching (26), Enjoyment, Ambition to Work as a Medical Educator (45), Interest in Collaboration (51), Pleasure in Teaching (52), Strong Interest and Anticipation for the Next Unit, Joy in Teaching, Sense of Identity and Authenticity through Teaching (25), Pleasure in Teaching (53), Actively Shaping the Teaching Environment (42), Enjoyable Nature of Education, Intrinsic Desire to Educate Values and Beliefs Integrated into the Educator, Feeling of Altruism, Connection with Academic Groups/Colleagues, Motivation for Appreciation Forms of Appreciation Including Public Recognition (39), Disinterest in Teaching and Training Medical Students, favoring enjoyment (40)
	Interest in the Specialty Field	Interest in the Subject Matter (52), Importance of Course Content (25)
Beliefs	Commitment to Treatment	Finding Time for Teaching (54), Insufficient Time Owing to Committed Performance in Treatment (40)
	Concern About Neglecting Patients	Concern About Inability to Treat the Same Number of Patients, Potential Disruption in Surgical Practice (44), Treating Fewer Patients Due to Teaching (40)
	Teaching as a Tool for Academic Career Advancement	Professional Advancement (43), Support for Academic Career (26), Career Progression (52), Achieving Career Goals, Value of the Teaching Profession, Career Promotion (25), Academic Teaching as a Means to Improve Job Status (40)
Individual Values	Educating the Next Generation	Feeling of Responsibility Toward the Profession and Society (47), Responsibility for Educating Future Physicians (48), Responsibility Toward Students (26), Helping Others, Improving Education (45), Opportunity to Help Others, Providing Services in the Field of Dermatology (52), Interest in Student Growth (46), Responsibility for Educating the Next Generation (49), Contributing to Students Becoming Good Physicians in the Future, Teaching as a Duty (25), Sense of Duty, Need to Transfer Ideas and Cultivate Future Talent in the Field (53), Reward for Supporting Others (42), Training the Next Generation (43), Altruism (39), Altruism and Intellectual Satisfaction (24)

Table 3. The process of analyzing and coding the theme of Characteristics and Professional Performance of Students

Main Category	Subcategories	Open Code (Source)
Characteristics and Professional Performance of Students	Positive Feedback from Students	Importance of Student Feedback, Student Feedback (46), Improvement of Student Evaluation, External Motivation, Public Recognition, Feedback from Supervisors, and Enhanced Student Evaluations (39)
	Motivation and Competence of Students	Potential Negative Views of Instructors Regarding the Abilities and Needs of Trainees to Participate in Educational Activities (55, 56), Good Student Performance Leading to Job Satisfaction (55)
	Cultural Characteristics of Students	Disruption of Practice Management by Students (40)
	Interaction with Students (Lifelong Positive Professional Relationships with Learners)	Interaction with Students, Connection with Students (43), Strengthening Lifelong Positive Professional Relationships with Learners (48), Strong Desire to Establish Teacher-Learner Relationships (46)

Table 4. The process of analyzing and coding the theme of Cultural Factors with Social Values in Teaching

Main Category	Subcategories	Open Code (Source)
Social Value of Teaching	Respect for Patients for Physicians with Teaching Roles	Respect from Patients (43), Increased Competence Perceived by Patients as a Teacher, Enhanced Patient Satisfaction, Patient Discontent with Frequent Encounters with Students (40)
	Teaching as Advocacy	The Act of Academic Teaching as My Advocacy (40), Increased Credibility and Legitimacy as an Educator (39)
Communication and Networking with Colleagues	Good Opportunities for Communication with Colleagues and Networking	Contact with Colleagues (44), Interest in Building Relationships (46), Teaching for the Sake of Colleagues (25), Increased Communication with Other Faculty Members (39), Good Opportunities for Communication and Networking with Colleagues, Career advancement and recognition for my work, connectedness (39)

Table 5. The process of analyzing and coding the theme of Managerial and Organizational Factors

Main Category	Subcategories	Open Code (Source)
University Appreciation for Educational Services	Valuation of Educational Activities on Par with Clinical Services	Importance of Clinical Care Compared to Education (56), Recognition by the University (43), Lack of Explicit Recognition of Teaching Excellence and Specific Development Budget (57)
	Reward System	Rewarding Good Teaching (57), Appreciation for Educational Activities (53), Increased Financial Inequality Compared to Direct Patient Care Delivery (54)
Existence of Supportive Structure within the University	Hierarchical Structure Facilitating Teaching	Long-term Planning and Available Educational Materials to Enhance Teaching Appeal (51), Hierarchical Structure of the Health System (49)
	Utilization of Effective Educational Leaders	Teaching for the Sake of Supervisors, Meeting Supervisors' Expectations, Avoiding Conflicts with Supervisors (25)
	Strengthening Organizational Commitment	Organizational Commitment (58)
Impartial and Fair Reward System	Development of a Fair Reward System	Financial (50), Distribution of Hospital Performance Payments (59), Receiving Rewards (38),Work rewards (39)

Alignment Between Education and Financial Rewards	Existence of a Reward System	Mismatch Between Educational Activities and Rewards (55), Minimal Importance of Financial Compensation (45), Increase in Income, Financial Considerations as Significant Incentives (52), Understanding of Rewards (42), Financial Compensation (51)
Provision of Facilities and Resources	Alignment of Educational Activities with Financial Compensation	Low Income from Education Compared to Treatment, Mismatch Between Educational Activities and Rewards (55), Reduction in Productivity, Financial Compensation Relative to Treatment, Increase in Income, Financial Considerations as Significant Incentives (49, 51)
	Human Resources	Human Resources (49), Excellence in Teaching through Attracting Good Educators (57)
	Space and Facilities	Facilities (49), Increasing Educational Resources (52), Shortage of Resources (49), Availability of Space (47), Teaching in Personal Medical Offices, Insufficient Space (44)

Table 6. The process of analyzing and coding the theme of Educational Structure

Main Category	Subcategories	Open Code (Source)
Policy Making	Flexibility of Educational Programs	Proposed Facilitators Include Enhancing Program Flexibility (52)
	Clear Policy Regarding the Educational Role of the Instructor	Lack of Strong Intervention in Course Design (24), Absence of Clear Policy Regarding the Educational Role of the Instructor, Unclear Educational Roles, Lack of Any Clear Policy Regarding the Physician's Role as an Educator (49)
	Alignment of Educational Credit in Promotion with Workload and Teaching Time	Mismatch Between Time Allocated for Teaching in Promotion and Pressure on Faculty Members at University Medical Centers (55)
	Adjustment of the Instructor's Multiple Roles	Multiple Roles (49)
Existence of a Balance Between Heavy Clinical Workload and Education	Clinical Workload	Conflict Between Heavy Workload of a Clinical Rotation (41), Workload (47), Clinical Workload (38), Heavy Clinical Burden or Sense of Wasted Time (24), Limited Time for Teaching and Involvement in Treatment (55)
	Time	Time (47), Lack of Time (51); Time Constraints (45), Time Limitations (51), Significant Barriers (Limited Time for Travel, Teaching, and Certification (52)
Clinical Supervision System	Existence of Supervisory Mechanisms and Feedback System	Having a Supervisor (41), Monitoring of Teaching [43], Feedback (42) Feedback from Supervisors, Assessment and Feedback on Teaching (39), Evaluation and Awarding of Educational Grants (59)
Standardization of National Medical Education Policies and Procedures	Clear Educational Policies and Procedures	Need for Establishing and Standardizing National Medical Education Policies and Procedures, Existence of Such a National Policy for Medical Education (49)
Professional Development	Professional Development Planning	Establishing Employee Development Programs (57), Reduction of Organizational Efforts for Teaching Methods (53), Responsibility for Improvement but Lack of Participation in Faculty Development (FD) (39)

Appendix A. Search strategy and databases used in the qualitative evidence synthesis

Database	Search Strategy
PubMed (searched on October 20, 2024)	("Teaching"[Mesh] OR "clinical teaching"[tiab] OR teach*[tiab]) AND ("Motivation"[Mesh] OR motivat*[tiab] OR "teaching motivation"[tiab]) AND ("Physicians"[Mesh] OR physician*[tiab] OR doctor*[tiab] OR clinician*[tiab]) Filters: Publication date from 2000/01/01; Languages: English, Persian
Scopus (searched on October 20, 2024)	(TITLE-ABS-KEY("teaching motivation" OR motivat* AND (teach* OR "clinical teaching"))) AND (TITLE-ABS-KEY(physician* OR doctor* OR clinician*)) AND (PUBYEAR > 1999) AND (LIMIT-TO(LANGUAGE, "English")
Web of Science (searched on October 20, 2024)	TS=("teaching motivation" OR motivat* NEAR/3 teach* OR "clinical teaching") AND TS=(physician* OR doctor* OR clinician*) Refined by: Document types=(Article) Timespan: 2000–2025; Languages: English
ScienceDirect (searched on October 20, 2024)	Timespan: 2000–2025; Languages: English TITLE-ABSTR-KEY("medical education" OR "clinical teaching" OR "academic teaching") AND TITLE-ABSTR-KEY("motivation" OR "reward" OR "recognition") AND TITLE-ABSTR-KEY("faculty" OR "physician" OR "clinician")
SID (Scientific Information Database, searched on October 20, 2024)	("استاد بالینی" یا "دکتر" یا "پزشک") AND ("انگیزش یاددهی" یا "انگیزش آموزش" یا "انگیزش تدریس")
Magiran (searched on October 20, 2024)	("استاد بالینی" یا "دکتر" یا "پزشک") و ("انگیزش آموزش" یا "انگیزش تدریس")
Google Scholar (searched on October 20, 2024)	Allin title: ("teaching motivation" OR "motivation to teach") physician OR doctor OR clinician Custom range: 2000–2025; Languages: English, Persian

Appendix B. The detailed characteristics of the included studies

Author/Year	Country	Aim of Study	Participants	Method	Key Findings
Adarkwah et al., 2019	Germany	Develop a questionnaire to measure GPs' motivation for teaching	General practitioners (rural)	Questionnaire survey (MoME-Q)	Identified intrinsic and extrinsic motivators (e.g., professional satisfaction, support needs)
Budden et al., 2017	Australia	Explore why surgeons teach	Excellent surgical educators	Qualitative Grounded theory interviews	Teaching driven by altruism, professional identity, and role-modelling
Cantillon et al., 2019	UK	Understand identity formation of clinical teachers	Clinical teachers	Qualitative study	Teacher identity shaped by context, recognition, and personal values
Chapman et al., 2016	Australia	Examine motivations of junior doctors to teach	Junior doctors	Online survey	Motivations included altruism, learning reinforcement, and career development
Cochran Ward et al., 2013	Australia	Explore motivations/constraints of emergency physicians	Emergency physicians	Mixed methods (survey + interviews)	Identified enthusiasm for teaching but time/organizational barriers
Dahlstrom et al., 2005	Australia	Investigate motivations of senior clinicians	Senior clinicians	Questionnaire survey	Found intrinsic motivation, professional duty, and enjoyment as drivers
Daunert et al., 2023	Germany	Assess GP practices' motivation to host students	General practitioners	Questionnaire survey	Motivated by professional responsibility; workload and logistics as barriers
Delgado et al., 2023	USA	Explore motivators/barriers of dermatology volunteer faculty	Volunteer dermatology faculty	Survey	Motivated by giving back; barriers included lack of time and recognition

Deutsch et al., 2019	Germany	Explore GPs' willingness, incentives, remuneration	General practitioners	Cross-sectional survey	Financial and structural incentives influence teaching motivation
Dotters-Katz et al., 2016	USA	Identify residents' motivation to teach	Medical residents	Questionnaire survey	Residents motivated by self-improvement, knowledge reinforcement, and altruism
Dybowski & Harendza, 2015	Germany	Validate Physician Teaching Motivation Questionnaire (PTMQ)	Physicians	Questionnaire validation study	Confirmed multidimensional structure of teaching motivation
Engels et al., 2021	Germany	Explore peer teachers' intrinsic motivation/rewards	Medical students (peer teachers)	Survey	Peer teachers motivated by intrinsic rewards and recognition
Ingham et al., 2015	Australia	Explore motivations of rural GP supervisors	GP supervisors (rural)	Qualitative interviews	Motivated by community service, professional duty, and teaching satisfaction
Lochner et al., 2012	Germany	Study intrinsic motivation of physicians to teach	Physicians/health professionals	Qualitative interviews	Intrinsic motivation dominant; sense of responsibility and enjoyment important
May et al., 2012	Germany	Assess family physicians' motivation to teach	Family physicians	Survey	Motivated by student interaction and professional duty; remuneration secondary
Olmesdahl, 1997	South Africa	Explore rewards for teaching excellence	Medical school faculty	Survey	Recognition and career advancement key motivators
Schulz et al., 2022	Germany	Investigate outpatient teaching in specialist practices	Specialist doctors	Qualitative interviews	Teaching shaped by structural, institutional, and individual factors
Snook et al., 2019	Iceland	Compare motivation of temporary vs. tenure-track faculty	Health sciences faculty	Survey	Temporary staff motivated by identity and career needs; tenure staff by stability
Sulistiyana et al., 2024	Indonesia	Analyze drivers of clinical teaching performance	Clinical teaching doctors	Survey	Performance linked to intrinsic motivation and institutional support
Tariq & Ali, 2014	Pakistan	Assess clinical faculty motivation for teaching	Clinical faculty	Survey	Positive attitudes toward teaching but hindered by workload
Thampy et al., 2013	UK	Explore registrars' motivation to teach	GP registrars	Qualitative interviews	Registrars motivated by altruism and professional identity
Thomson et al., 2014	Australia	Explore GPs' motivation to teach	General practitioners	Qualitative interviews	Motivated by professional satisfaction, altruism, and student interaction
Watt et al., 2024	Australia	Identify barriers/enablers using PTMQ	Clinical educators	Questionnaire survey	Barriers: workload, time; Enablers: recognition, personal satisfaction
Xiang et al., 2016	China	Develop evaluation system for clinical teachers	Clinical faculty	Survey	Proposed performance system linking teaching to motivation
Zidjali & Moosa, 2022	Oman	Explore motivation of doctors to improve teaching	Clinical doctors	Qualitative realist study	Motivation shaped by personal commitment and contextual constraints