



## A Conceptual Framework of the Characteristics of the Clinical Faculty Members in Medicine

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### ABSTRACT

**Introduction:** Providing an exact definition of the characteristics of effective clinical faculty members in medicine is challenging. The purpose of the present study is to determine the characteristics of the clinical teacher.

**Material and Methods:** Primarily, 1750 full texts of scientific resource, were determined after reviewing, and having in-depth and detailed reviewed, 30 scientific resource were selected for review. Finally a conceptual framework was developed for the characteristics of the clinical faculty members in medicine.

**Results:** Five themes and subjects including: human and individual, being a physician, being a teacher, being a researcher and academic executive management and educational leadership dimensions of clinical faculty members in medicine and 33 components and 966 elements, were extracted. The characteristics that were extractable for the clinical teacher under each of the main content themes in any of the newer literatures gain more components and elements by passing time.

**Conclusion:** Scientific identification of the essential characteristics of clinical faculty members in medicine, and its theoretical foundations is necessary, consequently the results are used for developing the recruitment, employment, evaluation and empowerment policies of clinical faculty members in medicine, as well as developing the tools for measuring the characteristics and abilities of clinical faculty members in medicine.

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## INTRODUCTION

Clinical faculty members in medicine play a dual role in medicine, to provide patient care and to teach [1-3]. Though all physicians are usually well prepared for their clinical roles, few are trained for their teaching roles [3, 4]. Yet, most lack knowledge of educational principles and teaching strategies thus may be inadequately prepared for this additional professional role [3, 5]. Providing an exact definition of the characteristics of an effective clinical faculty members in medicine is challenging [6]. Although there are various programs to empower clinical faculty members in medicine with different methodologies based on the specific responsibilities and needs of teachers at different universities, no specific body of knowledge and skills required for a clinical faculty members in medicine is determined [7]. It is rather difficult to emphasize the minimum characteristics required for a clinical faculty members in medicine to be effective [8]. There is no general consensus among researchers on what exactly constitutes a good / effective clinical faculty members in medicine [9]. There is no consensus among medical students, residents, and faculty members about the characteristics of good medical faculty and their importance [6, 8-10]. The methods used to evaluate clinical faculty members in medicine in Western countries may not be appropriate for Asian countries [11]. The study of literatures indicates that there are various definitions and descriptions of a good clinical faculty member in

medicine [9]. There is some overlaps or conflicts among these literatures [9]. Therefore, in order to identify and explain the essential characteristics of a clinical faculty member in medicine, this issue needs to be scientifically investigated and the roles, duties, skills, abilities and competencies of the clinical faculty members in medicine must be identified, prioritized and classified. Most studies on a good clinical faculty member in medicine have focused solely on teaching, while a few focus on being a clinical faculty member in medicine [12]. A large body of qualitative and quantitative studies is conducted on the characteristics of a good clinical faculty member in medicine in Western countries, but there are no such reports from Asian countries [9, 11]. The present study aimed to determine the characteristics of the clinical faculty members in medicine.

## MATERIAL AND METHODS

Considering the research question, what are the foundations, examples, and components constituting the characteristics of the clinical faculty members in medicine? A critical review was designed inspired by the structure presented in the article of Carnwell & Dally in 2001 [13]. Primary review on the study subject indicated that various literatures have expressed different characteristics for the clinical faculty members in medicine. Figure 1 indicates the literature search strategy.

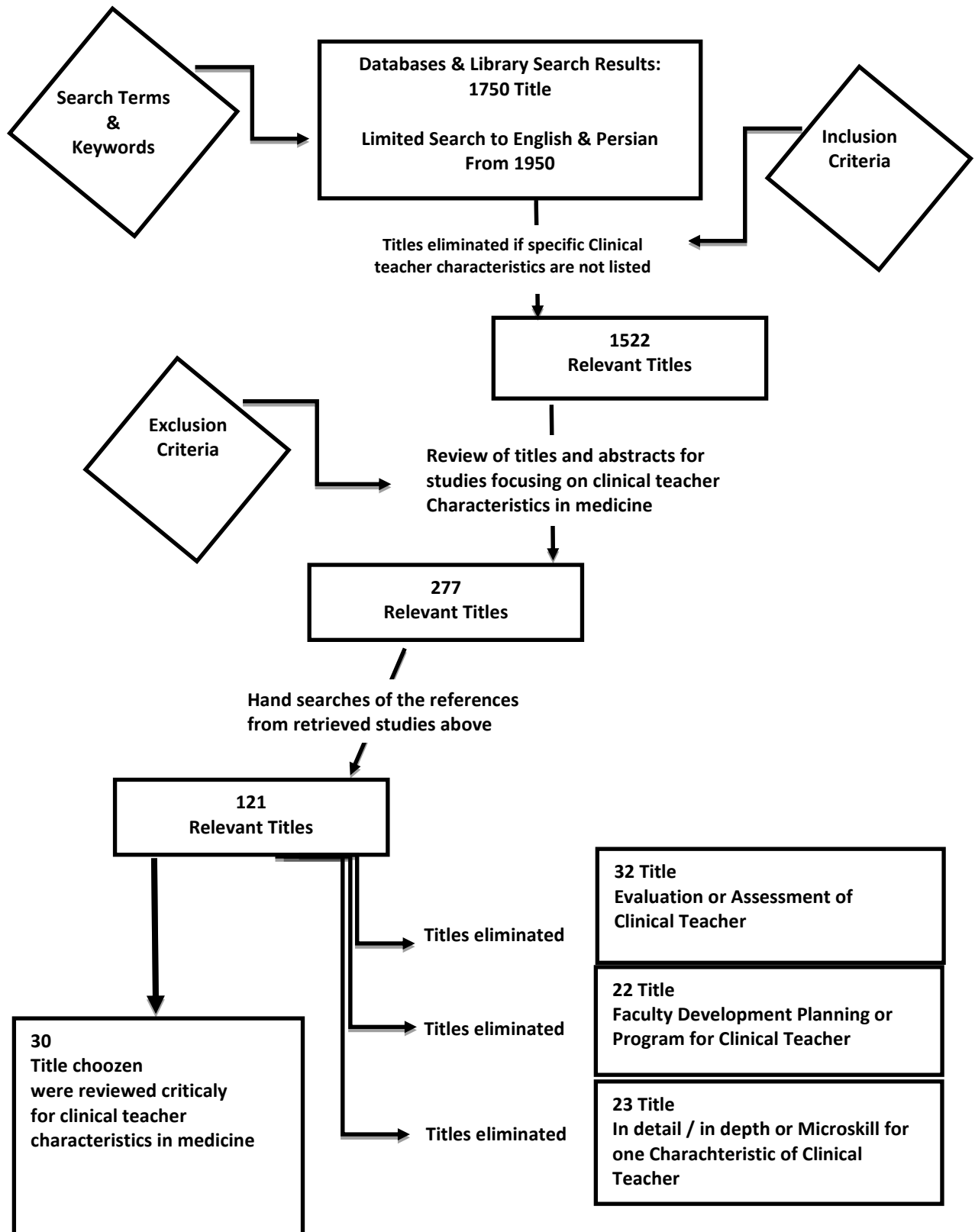


Figure 1: Literature Search Strategy and Results

**Table 1: Eventually, 30 scientific resources were selected for review, which were expected to express most of the components and elements for the characteristics of the clinical faculty members in medicine**

Table 1. List of resources selected for review		
	Ref. Selected	
1	[14]	Irby DM. 1978. Clinical teacher effectiveness in medicine. <i>J Med Educ.</i> 53(10):808-815. eng.
2	[15]	Irby DM. 1986. Clinical teaching and the clinical teacher. <i>J Med Educ.</i> 61(9 Pt 2):35-45. eng.
3	[16]	Irby DM, Ramsey PG, Gillmore GM, Schaad D. 1991. Characteristics of effective clinical teachers of ambulatory care medicine. <i>Acad Med.</i> 66(1):54-55. eng.
4	[17]	Guyatt GH, Nishikawa J, Willan A, McIlroy W, Cook D, Gibson J, Kerigan A, Neville A. 1993. A measurement process for evaluating clinical teachers in internal medicine. <i>Cmaj.</i> 149(8):1097-1102. eng.
5	[18]	Ullian JA, Bland CJ, Simpson DE. 1994. An alternative approach to defining the role of the clinical teacher. <i>Acad Med.</i> 69(10):832-838. eng.
6	[19]	Harden R, Crosby J. 2000. AMEE Guide No 20: The good teacher is more than a lecturer - the twelve roles of the teacher. <i>Med Teach.</i> 22:334-347.
7	[2]	Prideaux D, Alexander H, Bower A, Dacre J, Haist S, Jolly B, Norcini J, Roberts T, Rothman A, Rowe R et al. 2000. Clinical teaching: maintaining an educational role for doctors in the new health care environment. <i>Med Educ.</i> 34(10):820-826. eng.
8	[20]	Hesketh EA, Bagnall G, Buckley EG, Friedman M, Goodall E, Harden RM, Laidlaw JM, Leighton-Beck L, McKinlay P, Newton R et al. 2001. A framework for developing excellence as a clinical educator. <i>Med Educ.</i> 35(6):555-564. eng.
9	[21]	Markert RJ. 2001. What makes a good teacher? Lessons from teaching medical students. <i>Acad Med.</i> 76(8):809-810. eng.
10	[22]	Epstein RM, Hundert EM. 2002. Defining and assessing professional competence. <i>Jama.</i> 287(2):226-235. eng.
11	[23]	Azer SA. 2005. The qualities of a good teacher: how can they be acquired and sustained? <i>J R Soc Med.</i> 98(2):67-69. eng.
12	[6]	Buchel TL, Edwards FD. 2005. Characteristics of effective clinical teachers. <i>Fam Med.</i> 37(1):30-35. eng.
13	[7]	Harris DL, Krause KC, Parish DC, Smith MU. 2007. Academic competencies for medical faculty. <i>Fam Med.</i> 39(5):343-350. eng.
14	[24]	Khoo E, Teoh K. 2007. Notes for the Primary Care Teachers: THE EFFECTIVE TEACHER. <i>Malays Fam Physician.</i> 2(3):123-124. eng.
15	[3]	Ramani S, Leinster S. 2008. AMEE Guide no. 34: Teaching in the clinical environment. <i>Med Teach.</i> 30(4):347-364. eng.
16	[25]	Rogers R. 2008. The Seven Habits of Highly Effective Medical Educators. The University of Maryland School of Medicine. Irving, TX: Council of Residency Directors in Emergency Medicine; [accessed]. <a href="https://www.cordem.org/files/DOCUMENTLIBRARY/2008%20AA/1-The%20Seven%20Habits%20of%20Effective%20Educators%20(Rob%20Rogers.pdf">https://www.cordem.org/files/DOCUMENTLIBRARY/2008%20AA/1-The%20Seven%20Habits%20of%20Effective%20Educators%20(Rob%20Rogers.pdf</a>
17	[26]	Sutkin G, Wagner E, Harris I, Schiffer R. 2008. What makes a good clinical teacher in medicine? A review of the literature. <i>Acad Med.</i> 83(5):452-466. eng.
18	[27]	Turner T, Palazzi D, Ward M. 2008. The Clinician-Educator's Handbook [accessed January 2, 2017]. <a href="http://www.bcm.edu/pediatrics/clinician_educator_handbook">www.bcm.edu/pediatrics/clinician_educator_handbook</a> .
19	[28]	Finn K, Chiappa V, Puig A, Hunt DP. 2011. How to become a better clinical teacher: a collaborative peer observation process. <i>Med Teach.</i> 33(2):151-155. eng.
20	[29]	Hasan T, Bani I, Ageely H, Fauzi M. 2011. An Ideal Medical Teacher. <i>Education in Medicine Journal.</i> 3:e54-e59.
21	[30]	Hatem CJ, Searle NS, Gunderman R, Krane NK, Perkowski L, Schutze GE, Steinert Y. 2011. The educational attributes and responsibilities of effective medical educators. <i>Acad Med.</i> 86(4):474-480. eng.
22	[31]	Srinivasan M, Li ST, Meyers FJ, Pratt DD, Collins JB, Braddock C, Skeff KM, West DC, Henderson M, Hales RE et al. 2011. Teaching as a Competency: competencies for medical educators. <i>Acad Med.</i> 86(10):1211-1220. eng.

23	[12]	Stenfors-Hayes T, Hult H, Dahlgren LO. 2011. What does it mean to be a good teacher and clinical supervisor in medical education? <i>Adv Health Sci Educ Theory Pract.</i> 16(2):197-210. eng.
24	[32]	Wealthall S, Henning M. 2012. What makes a competent clinical teacher? <i>Can Med Educ J.</i> 3(2):e141-145. eng.
25	[33]	Fluit C. 2013. Evaluation and Feedback for Effective Clinical Teaching [PhD Thesis]. Nijmegen: Radboud University Nijmegen.
26	[34]	Goldie J, Dowie A, Goldie A, Cotton P, Morrison J. 2015. What makes a good clinical student and teacher? An exploratory study. <i>BMC Med Educ.</i> 15:40. eng.
27	[35]	Jalahi H, Yazdani S, Yazdanpanah A. 2015. Investigation the role of medical teacher in education in universities of medical sciences in the country from the viewpoint of medical teachers. <i>Journal of Medical Education.</i> 14:114-126.
28	[36]	University College London. 2016. Standards for clinical teachers at UCL medical school. London: University College London; [accessed November 11, 2016]. <a href="https://www.ucl.ac.uk/medicalschoo/quality/documents/relevant-links/Standards-for-clinical-teachers-2016">https://www.ucl.ac.uk/medicalschoo/quality/documents/relevant-links/Standards-for-clinical-teachers-2016</a>
29	[37]	Waghmare J, Waghmare P, Sontakke B. 2016. Competencies for Medical Teacher. <i>Journal of Education Technology in Health Sciences.</i> 3:2-3.
30	[38]	University of Ottawa Faculty of Medicine. 2017. Core Values of the Faculty of Medicine. Ontario: Faculty of Medicine of Ottawa; [accessed January 1, 2017]. <a href="http://www.med.uottawa.ca/students/md/professionalism/assets/documents/Core Values of the Faculty of Medicine.pdf">http://www.med.uottawa.ca/students/md/professionalism/assets/documents/Core Values of the Faculty of Medicine.pdf</a> .

To analyze the obtained data, classification, categorization and selection of the relevant resource were used for the prioritization and categorization of data. Each article or researcher contributed to the theoretical or conceptual development of a topic by his own writing, therefore, it became clear that what is the share of

each selected literature in shaping the concept. After analyzing and synthesizing the results, the proposed components in the literature for the characteristics of the clinical faculty members in medicine were extracted and used in the development of the primary conceptual framework (Figure 2).

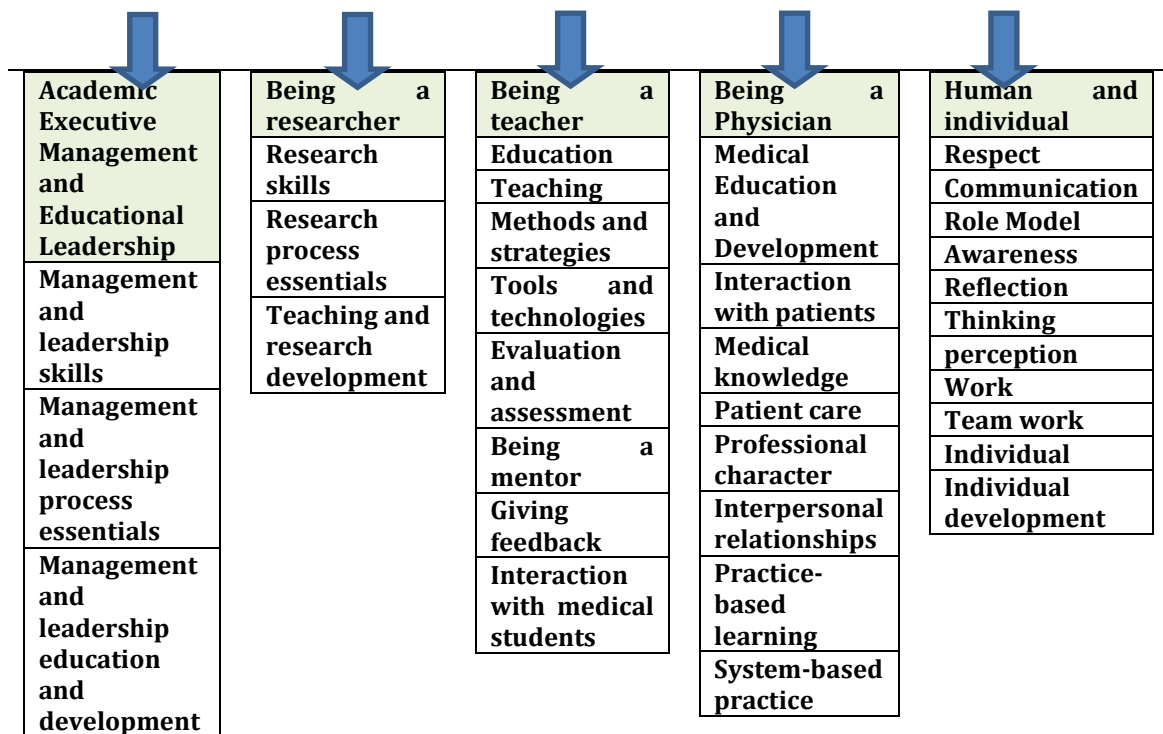


Figure 2: Conceptual framework of characteristics of the clinical teacher the clinical teacher

## RESULTS

The selected literatures were quickly reviewed. A brief description of each of the literatures was prepared, and the themes and subjects were identified. These five themes and subjects were organized in five dimensions, including: 1. Human and Individual dimensions of the clinical faculty members in medicine 2. Dimension of being a Physician of the clinical faculty members in medicine, 3. Dimension of being a teacher of the clinical faculty members in medicine, 4. Dimension of being a researcher of the clinical faculty members in medicine, 5. The dimension of university executive management and educational leadership of the clinical faculty members in medicine. The literatures were investigated in two stages: at first, to determine the primary content themes, and secondly to select literatures for in-depth and critical review. The literatures and results of the primary criticism were reviewed and re-criticized to gain general insight into the state of the status quo knowledge in the field of study, and

also to determine potential gaps in theoretical knowledge and identify the methodological constraints. Subsequently, the literature was reviewed in the manner described in the literature search strategy and resource selection strategy and 30 references were selected for review as shown in Table 1. The literatures selected under each of the themes and topics of primary content were categorized, critically reviewed and synthesized. After conducting an in-depth review, according to the research question, each literature was described, analyzed and evaluated. The researcher's perspective in this study was explained and specified on each of the basic content themes. At the end of each literature review, its application to the research question was determined around the five primary content themes. Among the 30 literatures selected for review, characteristics can be found in only seven resources for the clinical faculty members in medicine in all five primary content themes (Table 2).

**Table 2: Some dimensions of characteristics of the clinical faculty members in medicine addressed in the selected literatures**

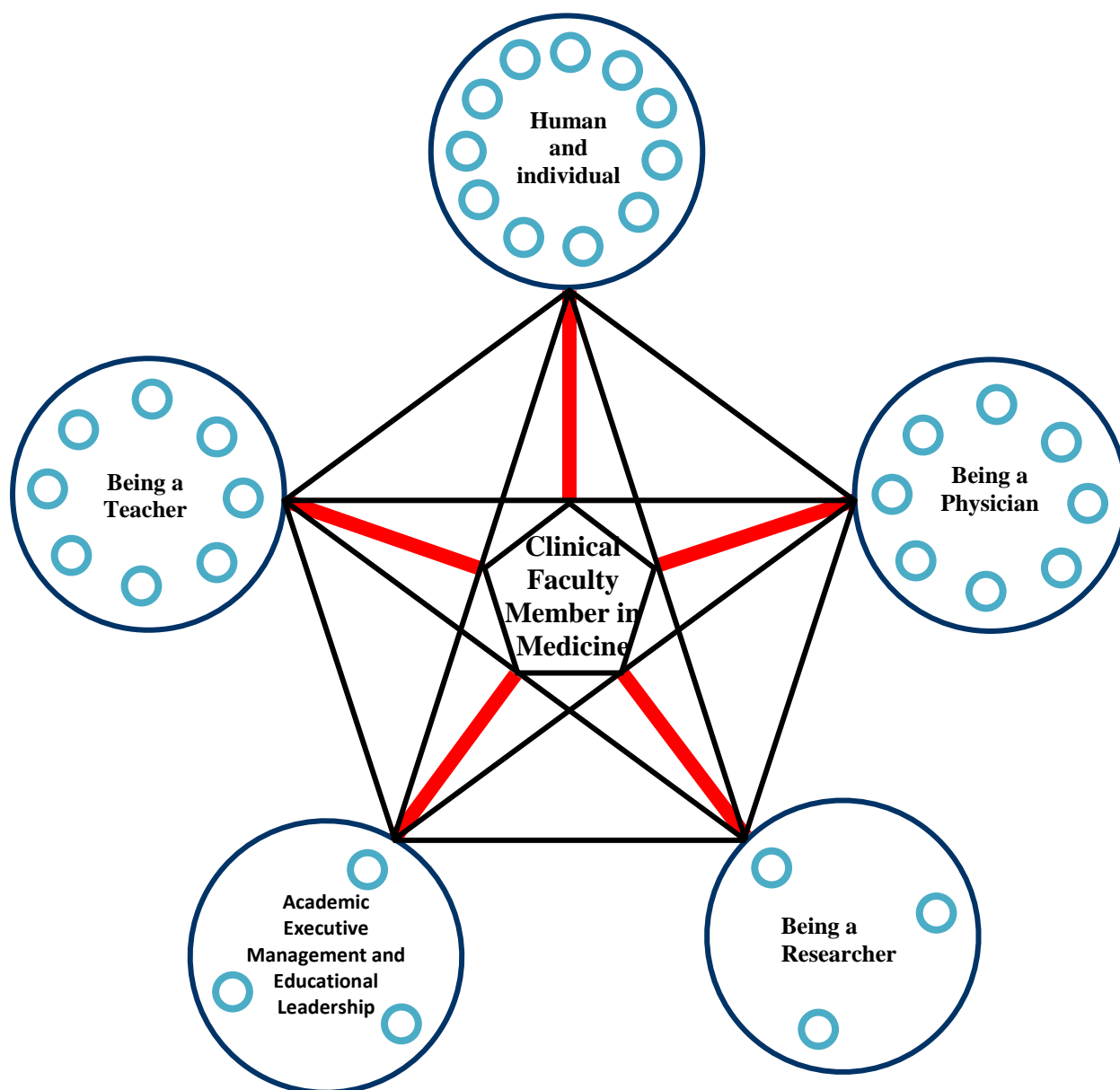
Ref. Selected	Human individual	and	Being Physician	a	Being teacher	a	Being researcher	a	Academic executive management and educational leadership
[14]	✓		✓		✓		----		----
[15]	✓		✓		✓		✓		✓
[16]	✓		✓		✓		----		----
[17]	✓		✓		✓		----		----
[18]	✓		✓		✓		----		----
[19]	----		----		✓		----		----
[2]	✓		✓		✓		✓		✓
[20]	✓		✓		✓		✓		----
[21]	✓		✓		✓		----		----
[22]	✓		✓		----		----		----
[23]	✓		----		✓		----		----
[6]	✓		✓		✓		✓		✓
[7]	----		✓		✓		✓		✓
[24]	✓		✓		✓		----		----
[3]	✓		✓		✓		✓		----
[25]	✓		✓		✓		----		----
[26]	✓		✓		✓		✓		✓
[27]	✓		✓		✓		✓		✓
[28]	----		----		✓		----		----
[29]	✓		✓		✓		✓		✓
[30]	✓		✓		✓		✓		✓
[31]	✓		✓		✓		----		✓
[12]	----		✓		✓		----		----
[32]	✓		✓		✓		----		----
[33]	✓		✓		✓		----		----
[34]	✓		✓		✓		----		----
[35]	✓		----		✓		✓		✓
[36]	----		✓		✓		----		----
[37]	✓		✓		✓		----		✓

After performing an in-depth and critical review and identification of the main themes presented in terms of the dimensions of the characteristics of the clinical faculty members in medicine in the present study, the primary content themes did not vary the main themes that were finally extracted. In following, the data pool theme was formed, described, analyzed, evaluated and synthesized. After completing the primary data synthesis stage and forming a dataset under each of the main themes, organizing the results of the previous step into themes and subjects in line with the research question, and determining the sub-themes, components, and elements. Then, the similarities and contradictions were identified. Regarding the similarities, the most complete and nearest words or phrases, which expressed the specific characteristics of the clinical faculty members in medicine in best way, were selected based on the researcher's definitions provided in the theoretical section. In terms of contradictions, by reviewing all of the studied literatures, what was mostly agreed by the researchers, and along with the considering the researcher's definitions, it was attempted to put words or phrases in the relevant category. To integrate and synthesize the themes and subjects

in line with the purpose of the study, it was found that the characteristics of the clinical faculty members in medicine can be classified into five main themes:

- Human and Individual
- Being a physician
- Being a teacher
- Being a researcher
- Academic executive management and educational leadership

At this stage, the characteristics categorized in the organization section, into five main themes under the five main themes in the form of 5 dimensions of the clinical faculty members in medicine were re-analyzed and re-evaluated. Each characteristic of each dimension was again examined, analyzed, evaluated and synthesized with other characteristics in the same dimension and other dimensions. After completing these steps, finally five themes, 33 components, and 966 elements were extracted for the characteristics of the clinical faculty members in medicine as described below, attempts were also made to have the least overlap (Figure 3).



**Figure 3: The relationship between dimensions and characteristics of the clinical faculty members in medicine**

Description of the primary conceptual framework: The human and individual dimension of the clinical faculty members in medicine. The human and individual dimension includes all characteristics related to physical, mental, psychological, social, cultural, moral, religious, spiritual, and individual dimensions of a clinical faculty member in medicine. The components include: respect, communication, pattern, awareness, rethinking, thinking, understanding, work, team work, individual, and individual development. Being a physician dimension of the clinical faculty members in medicine: Being a physician includes

all the characteristics related to the qualifications and abilities pertaining to practice using medical knowledge, clinical skills, communication skills, interpersonal, and inter-professional skills as well as observing ethics and professional character, with respect to the patients' priorities and beliefs for effective and quality patient-centered health care for resolving patient problems by a clinical faculty member in medicine. The components include: medical education and development, interaction with patient, medical knowledge, patient care, professional character, interpersonal



relationships, practice-based learning, and system-based practice.

Being a teacher dimension of the clinical faculty members in medicine: Being a teacher includes all the characteristics pertaining to applying knowledge and skills to teaching medical students and residents in a clinical setting by a clinical faculty member in medicine. The components include: education, teaching, methods and strategies, tools and technologies, evaluation and assessment, mentorship, giving feedback, and interaction with medical students.

Being a researcher dimension of the clinical faculty members in medicine: Being a researcher includes those characteristics of a clinical faculty member in medicine as a researcher:

A) In the clinical setting to find the evidence required to make informed decisions in complicated situations based on patient problems, to provide clinical treatment services, and teach research principles in clinics to medical students.

B) In the medical education environment, in the fields of scholarship, research in teaching, teaching and learning methods and the latest scientific findings in this field, and uses their results to enhance the quality of teaching medical students for enhancing their learning.

The components include: research skills, research process requirements, and research development and training. The dimension of academic executive management and educational leadership of the clinical faculty members in medicine Academic executive management and educational leadership dimension includes those characteristics of a clinical faculty member in medicine which work in the roles of clinical education leadership, education department manager, and management levels of the education department, faculty, and the related university. The components includes: management and leadership skills, management and leadership process requirements, and also management, leadership training and development.

Relationship between dimensions and characteristics of a clinical faculty members in medicine: Therefore, according to the above, a clinical faculty member in medicine is a person with five dimensions: human and individual, being a physician, being a teacher, being a researcher and an academic executive and academic leadership, and in each of these dimensions has characteristics that include a number of components and elements. Moreover, these five dimensions all together constitute the characteristics of a clinical faculty member in medicine, for example the human and individual characteristics is related to the dimensions of being a physician, a teacher, a researcher, and an academic executive management. Likewise, the

characteristics of each dimension of the clinical faculty members in medicine are related to the other four dimensions of the clinical teacher, all of which together form the characteristics of a clinical faculty member in medicine (Figure 3).

## DISCUSSION

There was a significant change in the content of the literatures from the first literature selected for criticism in 1978 by the end of 2017. First, the number of dimensions examined by a clinical teacher in each of the literatures was increased.

Investigating the literature over time, finding characteristics pertaining to new dimensions of the clinical faculty members in medicine will be impossible. The characteristics that were extractable for the clinical faculty members in medicine, under each of the main content themes in any of the newer literatures gain more components and elements over time.

Apparently, studies with the same repetitive dimensions, but with mentioning more components and elements continue for a clinical faculty member in medicine. In this study, no studies were found with a consensus on the characteristics of a clinical faculty member in medicine. Perhaps the lack of such consensus in the studies and the lack of persuasion of the stakeholders and readers of the discussions in these literatures make the researcher to bridge some of the gap sometimes, by conducting research.

The selected literature indicates that most of these studies have only collected some characteristics of the clinical faculty members in medicine, and most of them have only listed one or more dimensions of the clinical faculty members in medicine without referring to any method for collecting these characteristics.

Many methodological limitations were observed in the literatures studied: A number of literatures were prepared exclusively based on the views of one or more experts in the field of study, citing a number of articles without any criticism or analysis. The second category of literatures were used a questionnaire to obtain the views of various individuals including colleagues, medical students, and residents on the characteristics of the clinical faculty members in medicine. The third category of literatures appears to conduct a structured or semi-structured study in a specific point in time to study previous studies in this field, and by collecting the characteristics of a clinical faculty member in medicine.

## CONCLUSION

Although attempts were made to eliminate the similarities and overlaps of the characteristics of the clinical teacher as much as possible in each

dimension and in comparison with other aspects of the existing study and contradictions, it may still appear that the foundations, examples, and the primary proposed components constituting the characteristics extracted to develop the primary conceptual framework in this study were large. however according to the experts, further studies need to be designed and implemented to re-describe, analyze, evaluate, and synthesize the characteristics of the clinical faculty members in medicine and to obtain a model of the clinical faculty members in medicine characteristics. In conceptual framework that developed, a clinical faculty member in medicine is a faculty member with a medical degree in one of the specialized medical clinical disciplines with high levels of human, individual, ethical, and spiritual characteristics. He is responsible for teaching the medical students and specialized medical assistants, conducting research and delivering medical services, and performing executive and educational leadership tasks in the educational or clinical setting. Scientific identification of the essential characteristics of a clinical faculty member in medicine and its theoretical foundations is necessary, consequently the results are used for developing the recruitment, employment, evaluation and empowerment policies of clinical faculty members in medicine, as well as developing the tools for measuring the characteristics and abilities of clinical faculty members in medicine.

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### CONFLICTS OF INTEREST

No potential conflict of interest was reported by the authors. The authors alone are responsible for the content and writing of this article.

### FINANCIAL RESOURCES

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