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Preferred Teaching Styles of Medical and Non-Medical Sciences Faculty Members: A Systematic Review

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Abstract

Background: The importance of teaching and its underlying role in achieving educational goals in theoretical and practical areas increase the importance of the teaching styles of teachers. The present study aimed to explore and compare the teaching styles of medical and non-medical sciences faculty members in Iran.

Materials and Methods: In this systematic review, a systemic search of online databases (Medline, EMBASE, Scopus, Web of Science, SID, CIVILICA, Magiran, and Google Scholar search engine) was conducted for relevant studies with no time limit up to March 2022. Two reviewers evaluated the quality of eligible studies and carried out the selection procedure. The quality of the information was evaluated using the STROBE positioning guidelines.

Results: Finally, nine studies (n=1522 faculty members) were selected. The dominant teaching styles of medical faculty members were interactive teaching style (60.5%), formal authority (33.9%), and expert (33.7%). The personal model (7.7%) was the least dominant teaching style. There was no significant relationship between teaching styles and school type, teaching experience, and academic rank (P>0.05). The most dominant teaching styles of non-medical faculty members were expert (mean = 42.6), facilitator (mean = 41.75), and formal authority (mean = 41.41). The personal model (mean = 3.41) was the least dominant teaching style. There was a significant relationship between teachers' self-efficacy and their teaching styles (P<0.05).

Conclusion: Faculty members of medical and non-medical sciences had nearly the same method of teaching, and the majority of the faculty members preferred to present concepts through application and also encouraged deep learning, cooperative learning, and cognitive processing.

Key Words: Faculty Members, Teaching Styles, Medical Sciences, Non-medical Sciences.

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1- INTRODUCTION

Today, the higher education system, especially the universities, plays a decisive and constructive role in preparing future generations and training a specialized workforce to meet the needs of society. According to its mission (education, research, and social services), the university is the foundation for change in any country (1, 2); so there is a close relationship between community development and higher education (3). On the other hand, education in any system is realized in a cycle of the teaching and learning process. Teaching means any planned activity that is designed and implemented to provide learning in people and change their behavior (4). According to the American Teachers Association, teachers are responsible for creating a learning environment that enables all potential learners to advance their talents and abilities (5).

The importance of teaching and its underlying role in achieving educational goals in theoretical and practical areas add to the emphasis on effective teaching. Quinn (2000) states that teaching is purposeful interactive actions that are designed, implemented, and evaluated by the teacher. Teaching includes a set of skills done before, during, and after the implementation of the teaching process and provides the possibility of student education (6). In education, the teacher tries to transfer their knowledge to the students. However, the students each have their personal characteristics, and this means that an individual teaching method does not meet the learning requirements of all students. Therefore, teachers need a variety of teaching styles according to the realities of teaching and learning to transfer their knowledge (7). Studies show that teachers have different teaching styles that they may use based on specific circumstances, and many models exist in teaching styles (8-18).

Several studies have investigated learning styles and their importance in learning. In addition to learning styles, however, the teachers' teaching styles are also of essential significance (19). The knowledge of teaching styles, their adaptation to learning styles, their various applications, and the overall dynamics of teaching and learning styles have a significant impact on learners' learning and satisfaction (20). Kruzich points out that learners can be successful if their learning needs and preferences are met. Therefore, he recommends paying attention to different teaching styles as an important principle in education (21). A successful teacher helps students achieve their maximum learning potential by observing the principles of teaching and coordinating their teaching style with learning methods (22). Due to the importance of teaching styles in the learning and satisfaction of students, this study investigated and compared the teaching styles of medical and non-medical faculty members in Iranian universities.

2- MATERIALS AND METHODS

2-1. Data sources

The Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) checklist was used as a template for this review (23). A systemic search of electronic databases Medline (via PubMed), Scopus, Web of Science, EMBASE, ERIC, PsycINFO, SID, Magiran, CIVILICA, and Google Scholar search engine was conducted, with Mesh keywords (Teaching Styles) AND (Higher Education OR University OR Medical Education) AND (Teachers OR Faculty Members OR University Teachers OR Educators) with no time limit up to March 2022. The search was performed independently and in duplication by two reviewers, and any disagreement was resolved by the supervisor.

2-2. Eligibility criteria

Participants, interventions, comparators, and outcomes (PICO) was used to formulate the review objective and inclusion criteria.

2-2-1. Participants: Medical and non-medical sciences faculty members.

2-2-2. Interventions*:* The included research are non-interventional studies, so we did not have a comparison group.

2-2-3. Comparators: We did not have a comparison group and intervention.

2-2-4. Outcomes: Preferred teaching styles.

2-3. Included studies

The review included studies containing any form of quantitative assessment, measurement, and evaluation of teaching styles in medical and non-medical sciences faculty members in Iran. The inclusion criteria were the focus on teaching styles among faculty members of medical and non-medical sciences, published up to March 2022, written in English or Persian, exclusively using teaching style inventories such as Grasha and Riechmann teaching style inventory (24), or Teaching Style Analysis (TSA) (25), and published articles with full-text available.

2-4. Study selection

Database search was performed for the relevant studies, abstracts of the studies were screened to identify eligible studies, full-text articles were obtained and assessed, and a final list of selected studies was made. This process was performed independently and in duplication by two reviewers, and any disagreement was resolved by a third reviewer. References were organized and managed using EndNote software (version X8).

2-5. Data collection process

A form was developed and followed for each study. The data collected by the two reviewers were combined and compared for accuracy, and any discrepancies were solved by a third reviewer.

2-6. Risk of bias

The risk of bias was assessed following the standard tool of STROBE (STrengthening the Reporting of Observational Studies in Epidemiology) positioning guidelines (26). It is a valuable tool for evaluating the quality of observational studies. This checklist has 22 items, scored based on the importance of each item according to the present study. The final score of the checklist was 30, and the minimum score was 15.0. The assessment was done by two reviewers independently and in duplication, and any discrepancies were resolved by the third reviewer.

2-7. Synthesis of results

Due to differences in the included studies, study designs, small sample sizes, and the type of questionnaire used, a meta-analysis was not conducted.

3- RESULTS

Finally, nine studies (n=1522 faculty members) were selected (**Figure.1**). The main characteristics of the selected studies are summarized below:

1. A descriptive-analytical study on 124 faculty members of Kurdistan University of Medical Sciences in 2010-2011 aimed to determine the educational styles of the faculty members of the University of Medical Sciences in theoretical lessons. The findings indicated the predominance of the interactive teaching style with 60.5% and then authoritarian with 33.9%. The least used styles were the facilitator teaching style with 0.8 and the personal models teaching style with 1.6. The specialized teaching style was also favored by 3.2% of the subjects. There was no statistically significant relationship between age, teaching background, gender, school of study, level of education,

academic rank, and the teaching style of teachers (27).

2. A descriptive study on 74 teachers of basic sciences in the Isfahan University of Medical Sciences in 2008 aimed to determine the teaching styles in medical schools. The results showed that 93.2% of teachers used the flexible style in the domain of teaching methods, 97.3% in classroom management, 71.6% in classroom design, and 98.6% in lesson planning skills (28).

3. A descriptive-correlational study on 220 faculty of the Urmia Medical University in 2014 aimed to investigate the relationship between students' learning styles, faculty members, and social adjustment. The results showed that 18.3% of the faculty members had a specialized teaching style, 20.5% had a facilitator style, 26.6% had model-oriented, 23.3% had an authoritative, and 11.2% had an elective teaching style. There was a significant correlation between specialty-oriented ($p=0.042$; $r=0.15$), authoritarian ($p=0.02$; $r=0.14$), model-oriented ($p=0.17$; $r=0.03$), and facilitates styles ($p=0.032$; $r=0.21$) with students' social adjustment (29).

4. A descriptive-correlational study on 191 faculty members of Mazandaran University of Medical Sciences in 2017-18 aimed to determine the relationship between ethical intelligence and the teaching styles of faculty members. The results showed a significant relationship between moral intelligence and faculty teaching styles ($r = 0.78$, $p<0.05$). The predominant teaching styles of the faculty members were expert, advocacy, facilitator, authoritarian, and individual teaching styles, respectively. It means that 33.7% of subjects used the expert teaching style, 24.8% the advocacy teaching style, 20.1% the facilitator teaching style, 13.6% the authoritative teaching style, and 7.7% used the individual teaching style (30).

5. A descriptive cross-sectional study on 124 non-clinical faculty members at Iran University of Medical Sciences aimed to determine the University lecturers' teaching styles. The results showed that the majority of the faculty members preferred to present concepts as applied and also encouraged deep learning, cooperative learning, and cognitive processing. There was no significant relationship between teaching styles and the school type, teaching experience, and academic rank (31).

6. A methodological study on 361 faculty members of Zahedan University of Medical Sciences in 2018-19 aimed to determine their teaching style. The results showed that the mean scores and standard deviations $\pm$ standard deviation of teaching styles were 5.61 ± 0.61 for the expert teaching style, 5.23 ± 0.72 for formal authority teaching style, 5.39 ± 0.66 for the personal model teaching style, 5.43 ± 0.71 for facilitator teaching style, and 4.99 ± 0.82 for delegator teaching style. These findings suggested the dominance of the expert (88.6%), and delegator (79.8%) teaching styles as well as the moderate prevalence of the personal model (65.9%), formal authority (59.3%), and facilitator (55.7%) teaching styles among the faculty members of Zahedan University of Medical Sciences (32).

7. A cross-sectional study was conducted on 305 faculty members of humanities, basic sciences, engineering, agriculture, and medical sciences departments at Tabriz Universities, aimed to identify the teaching styles and their correlation with autonomous motivation. The results showed that the mean $\pm$ standard deviation of six subscales of teaching style questionnaire were as follows: all-round flexible and adaptable 13.55 ± 2.4; sensitive/student-centered; $15.20 \pm 2.$; official formal curriculum 12.80 ± 2.56; straight fact, no-nonsense 12.47 ± 2.36; big

conference 14.39±1.89; and one-off 13.32±2.18 (33).

8. A study was conducted on 306 college students and 36 faculty members of the Islamic Azad University of Shiraz. The results showed that formal authority (mean= 6.01), expert (mean=5.47), and delegator (mean = 4.80) styles were the most dominant teaching styles. The personal model (mean = 3.41) was the least dominant, and the facilitator (mean=4.30) was a moderately prevalent teaching style. On the other hand, while the students consistently preferred teaching styles that provided moderate guidance, the instructors preferred different teaching styles with varying degrees of guidance depending on the nature of the course they taught (34).

9. A correlational study on 87 university instructors of either English for General Academic Purposes or English for Specific Academic Purposes to various undergraduate students explored the relationship between ESP instructors' teaching styles and their self-efficacy. The results showed that the expert (mean=42.6), facilitator (mean = 41.75), and formal authority (mean = 41.41) styles were the most dominant teaching styles. Delegator (mean = 39.12) was the least dominant style, and the personal model (mean= 41.23) was a moderately prevalent teaching style. There was a significant relationship between teachers' self-efficacy and their teaching styles (35).

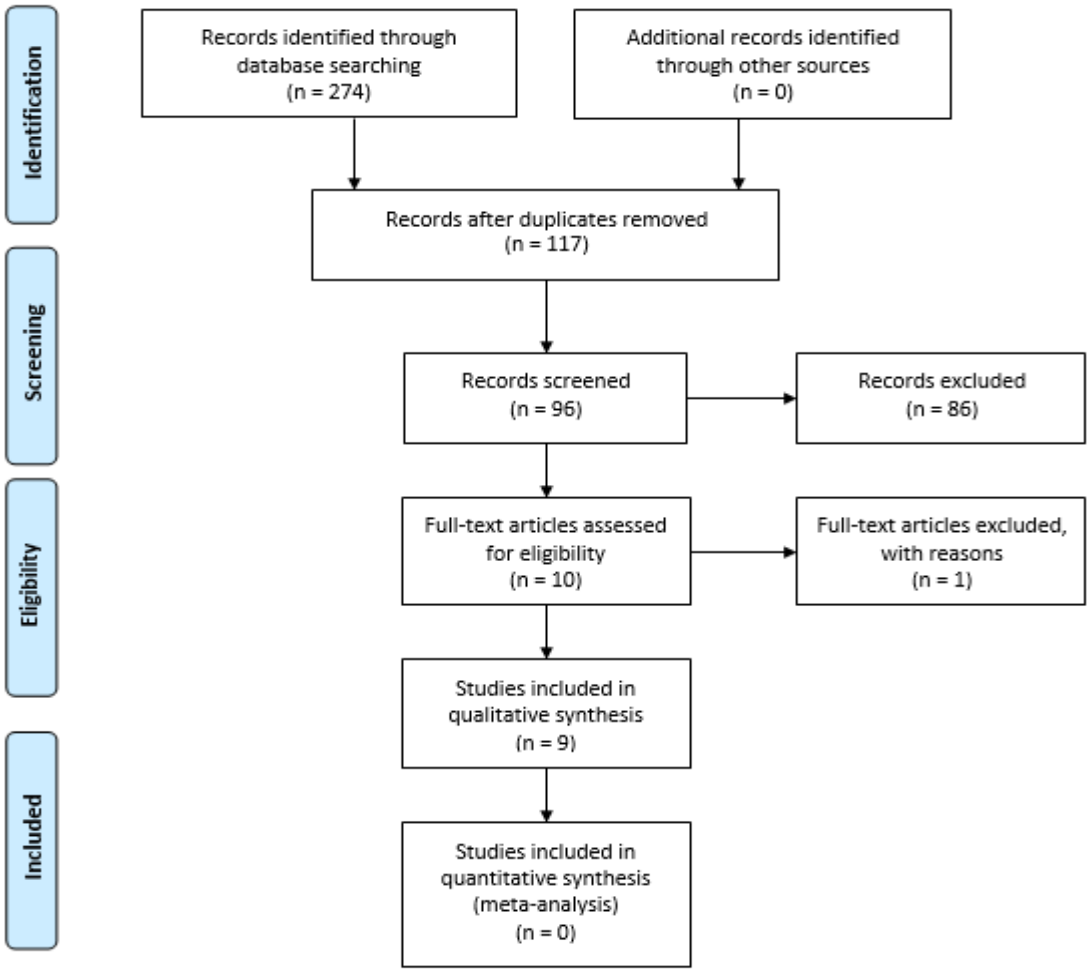

Fig.1: PRISMA Flowchart.

4- DISCUSSION

This review aimed to explore and compare teaching styles of medical non-medical sciences faculty members in Iran. Results showed that faculty members of medical and non-medical sciences have almost the same method of teaching. Dominant teaching styles of medical faculty members were interactive teaching style, formal authority, and expert. The personal model was the least dominant teaching style. The most dominant teaching styles of non-medical faculty members were expert, facilitator, and formal authority styles. The personal model was the least dominant teaching style.

Faculty members play an essential role in improving the quality of education, research, and social services in universities. Also, their teaching style is an effective factor in learning. According to Grasha's model (1996), there are five types of teaching styles (**Table.1**). Studies have shown that the highest academic success is achieved when the teaching style also is adjusted to students' learning styles (36). Lange (1993), in a study of teaching and learning styles among nursing students and teachers, concluded that when students' learning styles match the teaching styles of professors, the success in the course test is higher, and the dropout rate is lower (37). The use of different teaching styles is based on the principle that at least part of the material should be presented in ways appropriate to the learning style of each learner. However, a lack of coordination between the teachers' teaching styles and the students' learning styles is considered a barrier to learning (38, 39). Studies show that the awareness of teaching styles and their adaptation to learners' learning styles have a significant effect on their learning and satisfaction (40). Iureaa et al. (2011) examined the relationship between teaching style and learning styles on students' behavior. The results showed an improvement in learners' performance following the use of different teaching styles by teachers. It is difficult for a teacher to adapt their teaching styles to students' learning styles, but if it is gradually sustained over time, academic performance will improve (41). There are various styles that teachers can use in the learning process (8-18), but teachers should choose the most appropriate style according to the subject of the lesson, learners, and the learning environment (42). Therefore, university teachers should be aware of their teaching styles and their effect on students' learning and plan an effective style according to the conditions and facilities (43). In this review, the difference between the teaching styles of faculty members in medical and non-medical sciences was not large, indicating that university teachers are not yet familiar with different teaching styles and use the traditional style whether in the classroom or in clinical and practical settings. These findings highlight the need for planning to empower teachers and familiarize them with different teaching styles in different situations.

5- CONCLUSION

Based on the results, 93.2% of teachers used the flexible teaching method, 97.3% in classroom management, 71.6% in classroom design, and 98.6% in lesson planning skills. Dominant teaching styles of medical faculty members were the interactive teaching style (60.5%), formal authority (33.9%), and expert (33.7%). The personal model (7.7%) was the least dominant teaching style. There was no significant relationship between teaching styles and the school type, teaching experience, and academic rank. The most dominant teaching styles of non-medical faculty members were expert (mean=42.6), facilitator (mean=41.75), and formal authority (mean=41.41). The personal model (mean=3.41) was the least dominant

teaching style. There was a significant relationship between teachers' self-efficacy and their teaching styles. University teachers should be aware of their teaching styles and their effect on students' learning and choose the most appropriate style according to the subject of the lesson, learners, and the learning environment.

Table-1: Teaching styles and their features based on Grasha's (1996) model (24).

Style	Features
Expert	• possesses the knowledge that learners require • conveys his/her knowledge to students • ensures that learners are all well prepared
Formal authority	• has status among learners because of his/her expertise • provides the required feedback • sets learning goals and the rules of conduct
Personal model	• believes in applying personal examples • creates a prototype for how to think and act • instructs by encouraging students to observe and then imitate the approach of their instructor
Facilitator	• underscores the personal essence of the teacher-student communications • guides students through asking questions, scrutinizing options and proposing alternatives • equips students with the capacity of being independent in their learning process
Delegator	• attempts to build students' capacity to learn autonomously • instructs learners to function independently on their projects • as a resource person, assists learners if required.

6- AUTHORS' CONTRIBUTIONS

Study conception or design: SS, and NP; Data analyzing and draft manuscript preparation: MN, FV, MG, and AK; Critical revision of the paper: SS, and NP; Supervision of the research: MN and MG; Final approval of the version to be published: SS, MN, FV, MG, NP, and AK.

7- CONFLICT OF INTEREST: None.

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