SHORT COMMUNICATION

Characteristics of medical teachers using student-centered teaching methods

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Purpose: This study investigated characteristics of medical teachers who have adopted student-centered teaching methods into their teaching.
Methods: A 24-item questionnaire consisted of respondent backgrounds, his or her use of student-centered teaching methods, and awareness of the school's educational objectives and curricular principles was administered of faculty members at a private medical school in Korea. Descriptive statistics and chi-square analysis were conducted to compare faculty use of student-centered approaches across different backgrounds and awareness of curricular principles.
Results: Overall response rate was 70% (N=140/200), approximately 25% (n=34) of whom were using student-centered teaching methods. Distributions in the faculty use of student-centered teaching methods were significantly higher among basic sciences faculty (versus clinical sciences faculty), with teaching experiences of over 10 years (versus less than 10 years), and who were aware of the school's educational objectives and curricular principles.
Conclusion: Our study indicates differences in medical faculty's practice of student-centered teaching across disciplines, teaching experiences, and their understanding of the school's educational objectives curricular principles. These findings have implications for faculty development and institutional support to better promote faculty use of student-centered teaching approaches.

Key Words: Teaching method, Medical faculty, Active learning

Introduction

There is a growing emphasis on shifting educational methods in medical schools from didactic lectures to more learner-centered ones [1,2]. Engaging students by using active teaching and learning methods has been regarded as one of the core competencies for medical teachers [3]. Previous studies have investigated medical faculty's conceptions of student-centered teaching, and most of them discovered that such conceptions depended on various institutional and individual factors [4,5]. Such studies have highlighted the limited literature on factors that may influence teachers' decision to adopt student-centered approaches into their teaching. Thus, this study aimed to compare characteristics between faculty members who have adopted student-centered approaches and those who have not. In doing so, this study intends to shed light on faculty development and institutional support needs for promoting faculty use of student-

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centered teaching approaches.

In this study, student-centered teaching methods are defined as those other than conventional lectures and include various instructional strategies for promoting active student learning, such as small group learning methods (e.g., team-based learning [TBL], case-based learning) and project-based learning or experiential learning. Teaching in problem-based learning courses, laboratory sessions in basic science courses and clinical clerkships were excluded from the student-centered teaching approaches in this study as they, by their nature, do not incorporate conventional lectures.

Methods

We conducted a self-administered questionnaire in a paper-and-pencil format during the month of February, 2016. A total of 200 full-time faculty members at Dongguk University School of Medicine (DUSM) were invited to participate in this study. DUSM is a private medical school in South Korea and has a 4-year basic medical education program, with 2 years of preclinical education, followed by 2 years of clinical rotations. DUMS had a lecture-based curriculum until recently, and it has made efforts to shift to an outcome-based curriculum for the past few years. Accordingly, in recent years, DUSM has emphasized strongly on incorporating student-centered teaching methods. Such a shift is reflected in the school's curricular principles and the school has regularly communicated such efforts with faculty members by offering faculty development programs on various instructional strategies for fostering student active learning, including case-based learning and TBL, in which over half of all full-time faculty members attend annually.

The questionnaire was comprised of 24 items and was developed by the authors. This questionnaire included respondent demographics and backgrounds (discipline, years of teaching), their use of student-centered teaching methods, and their awareness of the school's educational objectives and curricular principles, i.e., principles for the curriculum design and guidelines on teaching and assessment. The questionnaire included one item relating to whether they had used student-centered teaching methods, given the definition of student-centered teaching mentioned earlier, in a dichotomous response format, and an open-ended item regarding the type of student-centered teaching method they used. Items on knowledge of the school's educational objectives and curricular principles were assessed using a 3-point Likert scale, where 1 was "don't know," and 3 was "very knowledgeable."

Descriptive statistics was performed for categorical data and a chi-square analysis was performed to compare the distributions of faculty members across their use of student-centered teaching approaches. Statistical analysis was performed using IBM SPSS ver. 22.0 for Windows (IBM Corp., Armonk, USA). All significance was tested at the 0.05 level.

Results

A total of 140 faculty members completed the questionnaire (a 70% response rate). The participants were diverse in their ranks; 26% were assistant professors, 25% were associate professors, and 44% were professors. About 81% of those surveyed were male and 19% were female; 19% were in basic sciences departments, and 81% were in clinical sciences departments. The participants' years of medical teaching also varied; less than 5 years (n=25, 18%), between 5 and 10 years (n=42, 31%), between 11 and 15 years (n=31, 22%), and over 16

Table 1. Course Characteristics of First- and Second-Year Curriculum

Characteristic	Category	Use of student-centered teaching (no.)			χ^2 test
		Yes	No	Total	
Faculty characteristics					
Disciplines	Basic sciences	17	9	26	27.96 (p<0.01)
	Clinical sciences	17	93	110	
Gender	Female	5	29	34	2.56 (p=0.08)
	Male	29	73	102	
Teaching experiences (yr)	<10	11	55	66	4.75 (p=0.03)
	>10	23	47	70	
Understanding of curricular principles					
Educational objectives	Yes	21	13	34	10.04 (p=0.02)
	No	32	70	102	
Curriculum design principles	Yes	28	63	91	4.88 (p=0.02)
	No	6	39	45	
Guidelines on teaching and assessment	Yes	24	54	78	4.00 (p=0.03)
	No	9	48	57	

years (n=41, 29%).

Twenty-five percent of the participants (n=34) answered that they were using student-centered approaches in their teaching. The student-centered teaching methods that the respondents used were student presentations or discussions (n=13), and large group discussions on clinical cases or problems (n=11), small group learning activities such as TBL (n=6), and others, including role play and simulated patients (n=4).

Table 1 presents a cross-tabulation of medical faculty use of student-centered teaching methods across their backgrounds and understanding of the school's educational objectives and curricular principles. Distributions of faculty using student-centered teaching methods were significantly higher among basic sciences faculty than among clinical sciences faculty (χ^2=27.96, p<0.01), and were higher in those with teaching experiences of over 10 years than who had less than 10 years of such experiences (χ^2=4.75, p=0.03). Furthermore, distributions of faculty using student-centered teaching methods were significantly higher among those who were aware of the school's educational objectives (χ^2=10.04, p=0.02) curriculum design principles (χ^2=4.88, p=0.02) and guidelines on teaching and assessment (χ^2=4.00, p=0.03).

Discussion

Our study indicates that the faculty use of student-centered approaches in teaching differed across disciplines, teaching experiences, and their understanding of the school's educational objectives curricular principles. First, basic sciences faculty was more likely to use student-centered approaches in their teaching than clinical sciences faculty. Previous studies found differences in medical teachers' conceptions of teaching and their teaching practices across disciplines [4,5], yet they did not investigate differences in faculty teaching practices. Our findings indicate there are differences in faculty's teaching practices across disciplines and call for future study to explore what causes such differences.

Second, our findings show that those who have more teaching experiences are more likely to use student-centered teaching methods than those who have less teaching experiences. This finding is not consistent with that of the study by Jacobs et al. [5], in which they

reported that longer exposure to a student-centered curriculum was associated with fewer teacher-centered conceptions. It can be argued that junior faculty members are more likely to be under pressure for clinical and research productivity than are senior faculty members. As such, they may not be able to invest enough time to develop their teaching skills. This finding suggests that junior faculty members need institutional support more than faculty development programs to induce motivation to develop their teaching skills.

Third, our study showed that those who are more knowledgeable about the school's educational objectives and curricular principles are more likely to incorporate student-centered approaches in their teaching. This may be due, in part, to the fact that those who were more aware of the school's educational objectives and curricular principles likely have participated in faculty development programs in medical education more frequently than those who were less aware of such principles. This finding is consistent with the study in higher education setting that faculty development has an impact on their practice and conceptions of teaching and learning [6]. This finding indicates enhancing faculty understanding of curricular principles is key to fostering their adoption of student-centered teaching methods.

Our findings have implications for faculty development and institutional support that to promote their use of student-centered teaching approaches. First, more faculty development is warranted to enhance faculty conceptions and understanding of student-centered teaching methods. Second, this study calls for the need to provide institutional support to promote junior faculty's commitment to education and to utilize the committed senior faculty for disseminating the practice of student-centered teaching.

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References

1. Harden RM, Sowden S, Dunn WR. Educational strategies in curriculum development: the SPICES model. Med Educ. 1984;18(4):284-297.
2. Harden RM, Laidlaw JM. Be FAIR to students: four principles that lead to more effective learning. Med Teach. 2013;35(1):27-31.
3. Srinivasan M, Li ST, Meyers FJ, et al. "Teaching as a competency": competencies for medical educators. Acad Med. 2011;86(10):1211-1220.
4. Jacobs JC, van Luijk SJ, van der Vleuten CP, Kusurkar RA, Croiset G, Scheele F. Teachers' conceptions of learning and teaching in student-centred medical curricula: the impact of context and personal characteristics. BMC Med Educ. 2016;16(1):244.
5. Jacobs JC, Muijtjens AM, Van Luijk SJ, Van Der Vleuten CP, Croiset G, Scheele F. Impact of institute and person variables on teachers' conceptions of learning and teaching. Med Teach. 2015;37(8):738-746.

6. De Rijdt C, Stes A, van der Vleuten C, Dochy F. Influencing variables and moderators of transfer of learning to the workplace within the area of staff development in higher education: research review. Educ Res Rev. 2013;8:48-74.