Dental School Faculty Perceptions of and Attitudes Toward the New Dental Therapy Model

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Abstract: The University of Minnesota School of Dentistry launched its new dental therapy program in September 2009 after the Minnesota state legislature had authorized the training and practice of a dental therapist in May of the same year. The creation of this mid-level dental provider is seen as a workforce solution to help address the problem of access to dental care experienced by some members of our society. However, there is a lack of consensus and even controversy in organized dentistry about dental therapy, one of the mid-level provider models. This study explored the attitudes and perceptions of dental school faculty members who have been tasked to prepare these new dental therapists to do their work. Focus groups were conducted with a randomly selected group of faculty members, the results of which were used to develop a survey of faculty members in all departments of the school. A total of 151 faculty members responded to the survey: 68 percent of these respondents were fifty-one years of age or older; 79 percent were male; and 39 percent were full-time and 61 percent part-time. Fifty-four percent were clinical faculty members, and the rest taught in the preclinical courses and basic sciences. The study found that these dental faculty members believe dentists have a personal responsibility in the care of the underserved but do not agree that the dental therapists are part of the solution to improve access. There was a clear divide between the part-time faculty members, who practice outside the institution, and the full-time educators with regard to the role of dental therapists. However, there was an overall consensus that dental faculty members have a commitment and responsibility to educate future dental therapists regardless of their personal position. This is encouraging to dental therapy students, who can be assured that they will receive the education they need to prepare them to practice.

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In the United States today, the incorporation of a new mid-level dental provider into the oral health care delivery system is a major workforce issue. The creation of a new dental provider has been proposed by various stakeholders as a workforce solution to help address problems faced by individuals and communities in accessing dental care. This new provider has been proposed in large part because dental therapists (one model of a mid-level dental provider) have been utilized in other countries since 1921 when the first training program opened in New Zealand. The United Kingdom opened its first school for training new dental auxiliaries in 1959.[1] In spite of their long-standing presence in oral health care, the use of dental therapists still generates controversy. Reasons for these controversies can be gleaned from studies[2-6] undertaken in the United Kingdom to assess dentists' perceptions of and attitudes toward the use of dental therapists in practice. These studies reveal a common set of themes regarding cost-effectiveness, patient acceptance, provider acceptance, and lack of knowledge regarding utilization of dental therapists.

A mid-level dental provider can be described as a member of the oral health care team who is educated to provide some level of evaluative, preventive, restorative, and/or minor surgical dental care. Advocates of the creation of a mid-level dental provider suggest that it is akin to the development of the physician assistant and nurse practitioner models that were developed in response to the shortage of physicians, particularly those in primary care. These

two models became established after weathering opposition from various factions.[7]

The physician assistant (PA) model was designed in the 1960s to relieve the shortage of primary care doctors across the country and to increase access to health care for patients in rural communities and underserved areas.[8] The idea was to create a new care provider who would take on routine and less complex aspects of health care under the supervision of a physician, with the physician supervisor determining the scope of practice. Many in the medical community, as well as in nursing, objected to this new model. The American Medical Association was concerned about the proper scope of practice for PAs, their prescriptive authority, and the amount of their independence from physicians. Despite objections, the PA model was established and has grown. In 1975 there were about 3,700 PAs, and in 2000 there were more than 40,000 PAs practicing in all fifty states and the District of Columbia. In 2005, there were 116 PA educational programs in forty-one states.[9]

The first nurse practitioner (NP) model was created in 1965 in Colorado as a non-degree certificate program designed to train experienced registered nurses for advanced roles as pediatric nurse practitioners. In the mid-1970s the number of NP programs and students increased amid continued predictions of a shortage of primary care physicians. Most NPs work in the areas of primary care and have assumed responsibilities for general wellness care and chronic disease management with a high degree of patient satisfaction and cost-effectiveness.[7,10] In 1977, the U.S. Congress enacted the Rural Health Clinics Act (Public Law 95-210), which encourages the use of PAs, NPs, and certified nurse midwives in rural areas. PA and NP licensure requires a bachelor's degree, but many of the undergraduate PA programs are now transitioning to graduate degree programs.[7]

As in the early years of the PA and NP programs, disagreement exists among both advocates and opponents of the mid-level dental provider concept surrounding the proposed scope of practice and level of supervision in the various models.[11-13] In today's national debate, some dentists support the Kellogg Foundation initiative to develop a two-year post-secondary training program to create a mid-level provider who will provide a wide scope of care under the general supervision of a dentist. Advocates for this mid-level dental provider model describe a need for providers trained in a shorter time and at less expense than that of the typical dental curriculum if access to care in underserved communities is to improve.[14] On the other hand, the American Dental Association and many of its members believe that non-dentists cannot be trained to develop treatment plans or perform irreversible procedures in a shortened curriculum. They believe that any new member of the dental team should focus on education and disease prevention. Opponents also question the overall quality of care that a mid-level provider can deliver and believe that there are better ways to solve the access to care problems.[15-17] In between these positions are dentists who advocate for training dental therapists who would focus only on children[18] and those who believe dental therapists will best serve the public if they provide care as part of a dental team working under both general and indirect supervision of a dentist.[12]

The same continuum of attitudes toward a mid-level provider exists among dentists in the state of Minnesota. Yet despite the lack of professional consensus, legislation authorizing the training and practice of a dental therapist was passed in May 2009. In September 2009 in response to the state mandate, the University of Minnesota launched its dental therapy program. The School of Dentistry Curriculum Steering Committee designed the dental therapy curriculum to ensure that the standard of care taught to dental therapists and the competency requirements within the defined dental therapy scope of practice will be identical to the standard of care taught to dental students. The education of dental therapists takes place in a professional environment that includes dental hygiene and dental students to ensure all graduates are prepared to work in a team setting. Faculty members who teach dental therapy students are the same as those who teach dental and dental hygiene students.

Current faculty members at the University of Minnesota School of Dentistry play a critical role in the preparation of the new dental therapists. Faculty members are identified as experts: they impart knowledge, values, beliefs, and ways of thinking to students.[19] Such learning enables and motivates students to perform their new roles in a manner that is professionally and socially acceptable. Faculty members serve as role models, and whether performed consciously or unconsciously, their role-modeling profoundly affects student learning. Research indicates that a student's professional identity and role acquisition are formed directly through didactic teaching and indirectly through social interaction.[20] In addition, the discipline-specific beliefs and values that students learn during the socialization process

contribute to their behavior as future practitioners.[21-23] The individual behavior of faculty members along with the policies of the institution clearly affects students' views of the values and principles of their profession.[19] Students learn from faculty across three dimensions in the educational milieu described by Hafferty: 1) the stated, intended, and formally offered and endorsed curriculum; 2) the informal curriculum, which is the unscripted, predominantly ad hoc, and highly interpersonal form of teaching that takes place among faculty and students; and 3) the hidden curriculum, which refers to the set of influences that function at the level of organizational structure and culture.[24] Faculty members' perceptions of the new dental therapy program may influence their interactions with students in each of these three dimensions and highly influence the informal curriculum, given that their own attitudes and values provide a framework for their interaction with students. If educators demonstrate negative attitudes, it may have a correspondingly negative impact on students' professional adjustment to the workplace.[21,22]

This study explored the perceptions and attitudes of our school's dental and dental hygiene faculty members toward the dental therapy program. This is the fourth in a series of articles reporting on studies undertaken to establish baseline knowledge of perceptions of and attitudes toward the new dental therapy model from various perspectives: that of dental and dental hygiene students, of dental therapy students, and of faculty members. The first two articles focused on the dental therapy inaugural class, seeking to define the characteristics and motivations that led the students to choose a career in dental therapy[25] and the experiences, impressions, and perceptions of dental therapy that will shape their professional identity.[21] The third article described our dental and dental hygiene students' perceptions of the dental therapy model.[26] This fourth article reports the findings of the first survey of our faculty members conducted during the first year of the dental therapy program. Follow-up faculty surveys will be conducted to determine any changes in attitudes and perceptions over time.

The questions this study sought to answer were the following:

1. What are the attitudes of dental school faculty members regarding their responsibility to provide care for the underserved?
2. What are the perceptions of dental school faculty members regarding the role of dental therapists in solving access to care problems in the state?
3. What are the perceptions of dental school faculty members regarding educating dental therapy students?
4. What are the attitudes of dental school faculty members regarding the presence of dental therapy students in preclinical and clinical classes?
5. What are the attitudes of dental school faculty members regarding employing dental therapists in dental practice?
6. What are the perceptions of dental school faculty members regarding patients' acceptance of dental therapists?

The conceptual framework for this study was based on role theory that describes behavior patterns or roles of individuals as guided or determined by both what the individual expects in his or her own behavior and what others expect.[27] The basic concept underlying this theory is that the role guides the individual's behavior based on a set of principles he or she expects to be associated with that role.[28] These role expectations may arise from social positions or social identities in society. Thus, for instance, dentists who teach in a dental school are expected to fulfill a role that includes "the imparting of skills and knowledge to do the work of an occupation, of orientations that inform behavior in a professional role, and of identities and commitments that motivate the person to pursue the occupation."[29] Individuals behave in ways that can be predictable or unpredictable depending on their social identities and situations, but like actors in a theatrical performance, "they are constrained to perform the parts and scripts that were written for them."[27] An extension of the role theory that will be used in this study is the concept of role conflict said to occur when an individual encounters tension as the result of incompatibility among his or her roles or when various roles do not fit together. Role theory may therefore help to clarify the attitudes and perceptions of faculty members that influence their role in educating future dental therapists.

Methods

To explore faculty attitudes about the new dental therapy model, focus groups were conducted with randomly selected faculty members from the preclinical and clinical departments and dental hygiene division of the University of Minnesota School of Dentistry. Lists of faculty members to be involved in teaching dental therapy students were obtained from the departments. Participants for the focus groups were selected from the list by using a random set

of numbers. Two focus groups of ten dental faculty members each were conducted by a consultant not associated with the dental school. The dental hygiene faculty focus group was conducted by the primary investigator, who is not involved in the dental hygiene program. All participants signed consent forms. The two facilitators used the same focus group questions and the same procedure. Both focus groups were audiotaped with the consent of the participants. Tapes were transcribed, and responses were categorized according to the questions listed above.

The questionnaire we designed for this study consisted of twenty-five items based on the responses of faculty members in the focus groups. Two other faculty members read the questionnaire to assess face validity. The following demographic information was collected: departmental affiliation and whether dental or dental hygiene faculty; area of teaching; nature of appointment (full-time or part-time); involvement in private practice; age; and gender. Categorical scales (agree, disagree, don't know) were used to measure items on the questionnaire.

A convenience sample was used for the study. An e-mail was sent to all full-time and part-time faculty members announcing the study and requesting their participation. Hard copies of the letter describing the study and the questionnaire were sent to all faculty members at their department offices. Three hundred and three questionnaires (based on the list of faculty members per department) were sent out at the first distribution. Respondents returned the questionnaires in an envelope provided by placing them in a locked box in their departmental office. One hundred and three questionnaires were collected after two weeks. A second letter and questionnaire were placed in faculty members' mailboxes after the first collection. Forty-five unopened questionnaires were later collected from the departments. It was assumed that these were meant for adjunct faculty who taught once a week and did not check their mailboxes. A total of 151 completed questionnaires were collected, for a return rate of 55 percent. Consent was implied with the completion of the questionnaire. Institutional Review Board permission was granted to conduct the focus groups and survey.

Descriptive statistics were used to summarize the respondents' data. Bivariate analyses were conducted to compare differences in responses according to age, gender, employment status, and work in private practice. For purposes of this study, a bivariate analysis using a percentage table was used to determine whether there were any differences in responses among groups.[30] Comparisons were made by examining differences between percentage points across categories.[31] Inferential statistics could not be used since there were missing responses and some items left unanswered on some questionnaires. This study is exploratory in nature since the topic of dental therapy is relatively new; rather than being hypothesis-driven, it was conducted to test the feasibility of undertaking a more extensive follow-up study and to develop methods to be used in subsequent studies. Although this study used a convenience sample of faculty in this particular dental school and thus the results cannot be generalized, institutions that are considering establishing a dental therapy program may benefit from the results of this study as they prepare their constituencies for their own programs.

Results

Twenty-five statements were used in the questionnaire (Table 1). Of the respondents (Table 2), 92 percent were faculty members who teach D.D.S. classes and 8 percent in the dental hygiene program. Seventy-nine percent were male and 21 percent female. The majority (87 percent) were over the age of forty. Thirty-nine percent reported having a full-time appointment, some of whom provide patient care in the School of Dentistry Faculty Practice one day a week. Full-time faculty members who do not practice may be on the research, basic sciences, or preclinical faculty. Part-time faculty members (61 percent) teach for one to three days per week. Fifty-six percent of the total respondents reported being in private practice outside the school. Fifty-four percent of the total respondents reported teaching in the clinical area; the rest reported teaching in preclinical courses (6 percent), basic sciences (5 percent), or in both clinical and preclinical education (20 percent).

Knowledge of Dental Therapy and Providing Care for the Underserved

Fifty-eight percent of the total respondents claimed to have a good understanding of the role of dental therapists in dental practice. A larger number (69 percent) believed they have sufficient knowledge about dental therapy to respond to the statements in the survey.

Seventy-seven percent of the respondents agreed that all dentists have a professional respon-

Table 1. Questionnaire statements and responses, by number and percentage of total respondents (N=151)

	Agree	Don't Know	Disagree	NA/Missing
1. I believe that all dentists have a personal responsibility for providing care for underserved populations.	115 (76.7%)	6 (4.0%)	29 (19.3%)	NA=1 (0.7%)
2. I am currently involved in providing care to the underserved through volunteer work.	72 (49.7%)	0	14 (9.7%)	NA=59 (40.7%)
3. I would be comfortable having a dental therapist perform authorized procedures on my patients.	53 (35.6%)	35 (23.5%)	45 (30.2%)	NA=16 (10.7%)
4. I believe working in teams allows for greater accomplishment than might be possible individually.	129 (86.0%)	14 (9.3%)	5 (3.3%)	NA=2 (1.3%)
5. I believe that patients will question the quality of the work performed by dental therapists, regardless of what the dentist might say to reassure them.	68 (45.3%)	34 (22.7%)	47 (31.3%)	NA=1 (0.7%)
6. I believe that having dental therapists available will increase the number of dental practices willing to provide treatment to Medicaid and other publicly insured patients.	46 (30.5%)	53 (35.1%)	51 (33.8%)	NA=1 (0.7%)
7. I believe that being able to delegate some work to dental therapists will make the dentist's job more satisfying.	46 (30.7%)	40 (26.7%)	61 (40.7%)	NA=3 (2.0%) Missing=1
8. I believe that having dental therapy students in my courses will hinder learning of other students.	21 (14.1%)	28 (18.8%)	90 (60.4%)	NA=10 (6.7%) Missing=2
9. I will employ dental therapists in my practice.	5 (3.4%)	15 (10.2%)	52 (35.4%)	NA=75 (51.0%) Missing=4
10. Having dental therapists in my practice will be a cost-effective addition to the dental office.	27 (18.0%)	70 (46.7%)	45 (30.0%)	NA=8 (5.3%) Missing=1
11. The dentist's supervision of the dental therapist in the practice will be an added responsibility and burden.	80 (53.7%)	31 (20.8%)	34 (22.8%)	NA=4 (3.7%) Missing=2
12. Dental therapists will require a lot of oversight by dentists.	62 (41.9%)	46 (31.1%)	36 (24.3%)	NA=4 (2.7%) Missing=3
13. I believe dental therapists will be part of the solution to the problem of access to care in the state.	45 (29.8%)	40 (26.5%)	66 (43.7%)	
14. I accommodate the underserved in my private practice.	75 (50.3%)	3 (2.0%)	11 (7.4%)	NA=60 (40.0%) Missing=2
15. I believe that the level of training is adequate for the duties the dental therapists will take on in the future.	40 (26.9%)	67 (45.0%)	37 (24.8%)	NA=5 (3.4%) Missing 2
16. I have a personal responsibility in ensuring that the dental therapy model succeeds.	52 (35.0%)	25 (16.8%)	56 (37.6%)	NA=16 (10.7%) Missing=2
17. I believe that dental therapists should be able to practice with the same degree of independence as dental hygienists.	66 (44.0%)	31 (20.7%)	51 (34.0%)	NA=2 (1.3%) Missing=1
18. I believe that as a faculty member I have the responsibility of shaping the dental therapists' professional identity.	101 (66.9%)	17 (11.3%)	24 (15.9%)	NA=9 (6.0%)
19. I believe that teaching dental therapy students will be an added weight in teaching load.	76 (50.3%)	21 (13.9%)	44 (29.1%)	NA=10 (6.6%)
20. Dental therapists will be readily accepted by the patients in the dental school.	47 (31.3%)	80 (53.3%)	22 (14.7%)	NA=1 (0.7%) Missing=1
21. The public will think the dentist is less important if dental therapists are allowed to perform a wide range of procedures.	29 (19.3%)	36 (24.0%)	84 (56.0%)	NA=1 (0.7%) Missing=1
22. I have a good understanding of the role of the dental therapist in dental practice.	88 (58.3%)	26 (17.2%)	34 (22.5%)	NA=3 (2.0%)
23. I believe that I have values and attitudes that I would like to pass on to dental therapy students.	118 (79.2%)	14 (9.4%)	9 (6.0%)	NA=8 (5.4%) Missing=2
24. I believe that patients would be able to distinguish the dental therapist from the dentist, dental hygienist, or dental assistant.	54 (35.8%)	48 (31.8%)	48 (31.8%)	NA=1 (0.7%)
25. Overall, I believe I have sufficient knowledge of dental therapy to feel comfortable answering the previous questions.	103 (68.7%)	20 (13.3%)	25 (16.7%)	NA=2 (1.3%) Missing=1

Note: Percentages may not total 100% because of rounding.

Table 2. Demographics of study participants (N=151)

Gender (N=144; missing=7)	Female	30 (21%)	Male	114 (79%)
Age (N=142; missing=9)	40 and below	18 (12.7%)	41 and above	124 (87%)
	≤30	4 (2.8%)	41-50	27 (19%)
	31-40	14 (9.9%)	51-60	51 (36%)
			61 and above	46 (32%)
Program responsibility (N=150; missing=1)	D.D.S.	138 (92%)	Dental hygiene	12 (8%)
Term of appointment (N=147; missing=4)	Full-time	57 (39%)	Part-time	90 (61%)
Area of appointment (N=143; missing=5)	Clinical	79 (54%)	Other areas (total)	67 (45%)
			Preclinical	9 (6%)
			Basic science	8 (5%)
			Preclinical and clinical	29 (20%)
			Course director	8 (5%)
			Three areas of assignment	13 (9%)
Private practice (N=147; missing=4)	Yes	83 (56%)	No	64 (44%)

sibility to provide care for underserved populations (statement 1, Table 1). Female faculty members (90 percent) were more likely than male faculty members (73 percent) to agree that care of the underserved is a dentist's responsibility. More full-time and age forty and below faculty members were also more likely to agree with this statement (Table 3). Fifty percent of the respondents reported current involvement in providing care to the underserved through volunteer work (statement 2, Table 1).

However, faculty perceptions of the role of the dental therapist in care of the underserved were mixed. Overall, 30 percent of the respondents agreed and 44 percent disagreed (27 percent selected "don't know") that dental therapists will be part of the solution to the problem of access in the state (statement 13, Table 1). Females were more likely to agree than males, full-timers were more likely to agree than part-timers, and those not involved in private practice were more likely to agree than those in private practice (Table 4). The respondents were also divided in their perception that the availability of dental therapists will increase the number of dentists who will provide treatment to Medicaid and other publicly insured patients (statement 6, Table 1).

Employing Dental Therapists in Dental Practice

Responses to the idea of having dental therapists on the dental team were also mixed. The respondents demonstrated uncertainty about having dental therapists as a part of the dental team as only five (3.4 percent) said they would employ dental therapists in their practice; 35 percent said they were more likely not to employ them; and 10

Table 3. Responses to statement 1: "I believe that all dentists have a personal responsibility for providing care for underserved populations"

	Gender		Private Practice		Appointment		Age	
	M	F	Yes	No	FT	PT	Over 40	≤40
Agree	72.8%	90.0%	75.9%	78.1%	80.7%	73.3%	74.2%	88.7%
Don't know	4.4%	6.7%	4.8%	3.1%	0	6.7%	4.8%	0
Disagree	22.8%	3.3%	19.3%	18.8%	19.3%	20.0%	21.0%	11.1%

Note: Percentages do not include missing and not applicable responses. Percentages with no missing responses may not total 100% because of rounding.

percent selected the "don't know" option (statement 9, Table 1). It should be noted that 51 percent of the respondents said this question was "not applicable" to them. Male and part-time faculty members and those in private practice tended to disagree more than the others about employing dental therapists in their practice (Table 5).

The respondents were also divided about being comfortable having dental therapists performing procedures on their patients (statement 3, Table 1): 36 percent agreed with this statement, 30 percent disagreed, and 24 percent selected "don't know." However, more females (50 percent) and faculty members not in private practice (49 percent) said they would be comfortable allowing dental therapists to provide care to their patients (Figure 1). Only 31 percent of the overall respondents agreed that delegating work to dental therapists would make

Table 4. Responses to statement 13: "I believe dental therapists will be part of the solution to the problem of access to care in the state"

	Gender		Private Practice		Appointment		Age	
	M	F	Yes	No	FT	PT	Over 40	≤40
Agree	28.1%	40.0%	20.5%	43.8%	36.8%	25.6%	31.5%	27.8%
Don't know	23.7%	43.3%	28.9%	23.4%	31.6%	24.4%	25.8%	44.4%
Disagree	48.3%	16.8%	50.6%	32.8%	31.6%	50.0%	42.7%	27.8%

Note: Percentages do not include missing and not applicable responses. Percentages with no missing responses may not total 100% because of rounding.

Table 5. Responses to statement 9: "I will employ dental therapists in my practice"

	Gender		Private Practice		Appointment		Age	
	M	F	Yes	No	FT	PT	Over 40	≤40
Agree	3.6%	3.5%	2.4%	4.9%	5.5%	2.3%	3.0%	6.0%
Don't know	10.8%	10.3%	14.6%	4.9%	7.3%	12.5%	8.0%	22.0%
Disagree	36.9%	13.8%	50.0%	11.5%	25.5%	39.7%	33.0%	28.0%

Note: Percentages do not include missing and not applicable responses.

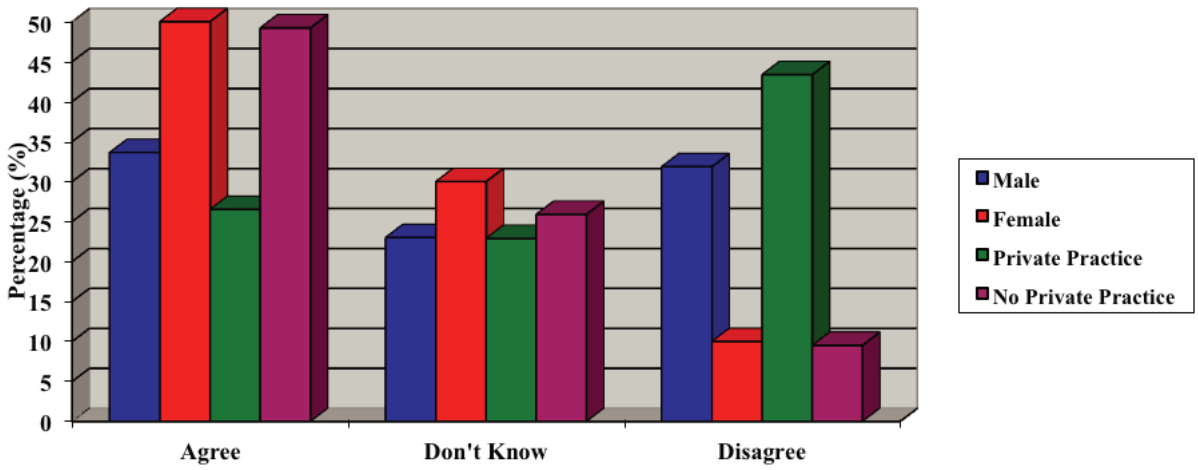

Figure 1. Responses to statement 3: "I would be comfortable having a dental therapist perform authorized procedures on my patients"

the dentist's job more satisfying; more full-time faculty members and those not in private practice tended to agree with the statement. Less than half of the respondents perceived that dental therapists will require a lot of oversight by dentists (statement 12, Table 1): 42 percent agreed with this statement, 24 percent disagreed, and 31 percent selected "don't know," with more males and those forty years of age and older in agreement (Figure 2).

With regards to patients' perception of dental therapists, 45 percent of the respondents reported thinking that patients will question the quality of work of dental therapists regardless of assurances from the dentist (statement 5, Table 1). However, only 36 percent agreed (32 percent selected "don't know" and 32 percent disagreed) that patients would be able to distinguish the dental therapist from the dentist, dental hygienist, and dental assistant (statement 24, Table 1). Eighteen percent of the respondents agreed and 30 percent disagreed that having dental therapists in the practice would be cost-effective; 47 percent reported they did not know (statement 10, Table 1).

Teaching Dental Therapists

In this study, 50 percent of the respondents believed that teaching dental therapy students will add to their teaching load (statement 19, Table 1). However, 60 percent disagreed that having dental therapists in their courses or classes will hinder the learning of other students. The respondents acknowledged their role in educating the dental therapy students, with 67 percent believing they have the responsibility of shaping the dental therapists' professional identity. More respondents who were female (73 percent), full-time (72 percent), and not in private practice (77 percent) were more favorable about this responsibility (Table 6 and Figure 3). A high percentage (79 percent) of respondents agreed they have values and attitudes that they will pass on to dental therapy students (statement 23, Table 1). Forty-five percent of the total respondents said they did not know if the proposed level of training for dental therapists is adequate, but full-time faculty members and those not in private practice tended to agree that the level of training is adequate (Figure 4). More female and more full-time faculty members expressed favorable attitudes about their personal responsibility in ensuring that the dental therapy model succeeds (Table 7).

Discussion

This study found a mix of faculty attitudes toward the dental therapy model. Most faculty members, regardless of gender, age, appointment, or involvement in private practice, agreed that dentists have a responsibility for providing care for the underserved. Half of the respondents reported being active in volunteer work, and those in private practice said they accommodate the underserved in their

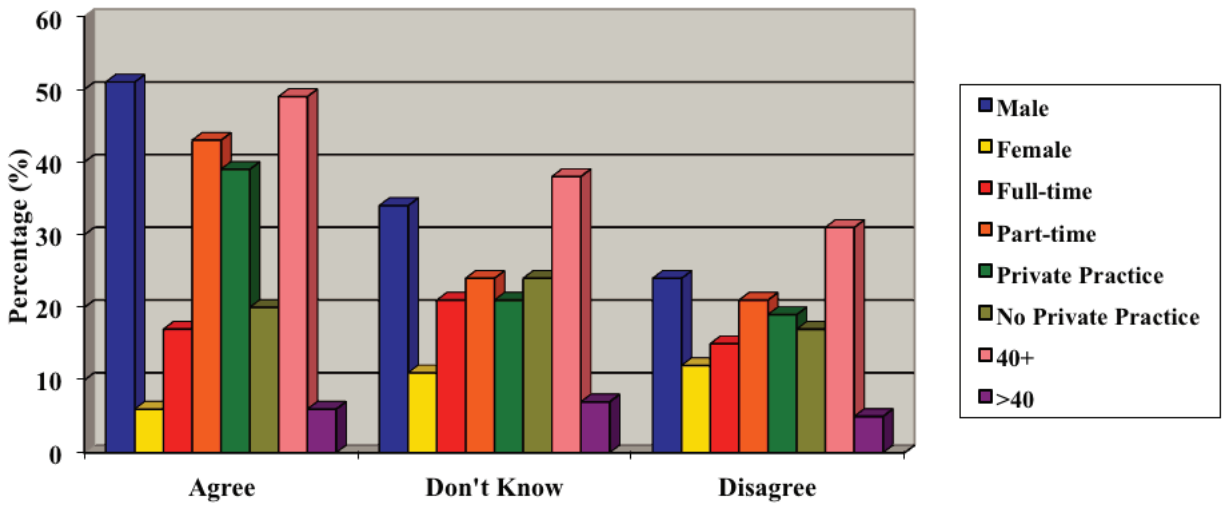

Figure 2. Responses to statement 12: "Dental therapists will require a lot of oversight by dentists"

practices. These results show a higher proportion of dental faculty members involved in providing care for underserved patients than reported in data about practicing dentists from the Minnesota Department of Health, which estimated 48 percent of Minnesota licensed dentists provided care to more than ten Medicaid patients in 2008.[32,33] Our faculty members, in this regard, serve as role models to the dental, dental hygiene, and dental therapy students as they demonstrate an important value that underscores the reason for the creation of dental therapy: the need to increase access to care for the underserved.

Consistent with opinions expressed in the national debate, there was little agreement among our respondents regarding dental therapists' role in the care of the underserved, solving the problem of access to care, or increasing the number of practices that accept Medicaid or public assistance. Our respondents in private practice tended to have less favorable attitudes than our full-time faculty members, and our respondents who were female and not in private practice tended to have more favorable attitudes about the dental therapy model. Economic considerations of dental practice such as low reimbursement rates for patients on public assistance may influence the attitudes and perceptions of those in private practice.

It is important to note that, in spite of the lack of consensus about the role of dental therapists in solving access problems, a majority of the responding

Table 6. Responses to statement 18: "I believe that as a faculty member I have the responsibility of shaping the dental therapists' professional identity"

	Gender		Private Practice		Appointment		Age	
	M	F	Yes	No	FT	PT	Over 40	≤40
Agree	68.0%	73.0%	60.0%	77.0%	72.0%	63.0%	69.0%	78.0%
Don't know	14.0%	3.3%	10.0%	14.0%	7.0%	14.0%	12.0%	6.0%
Disagree	14.0%	13.0%	22.0%	6.0%	16.0%	16.0%	14.0%	11.0%

Note: Percentages do not include missing and not applicable responses.

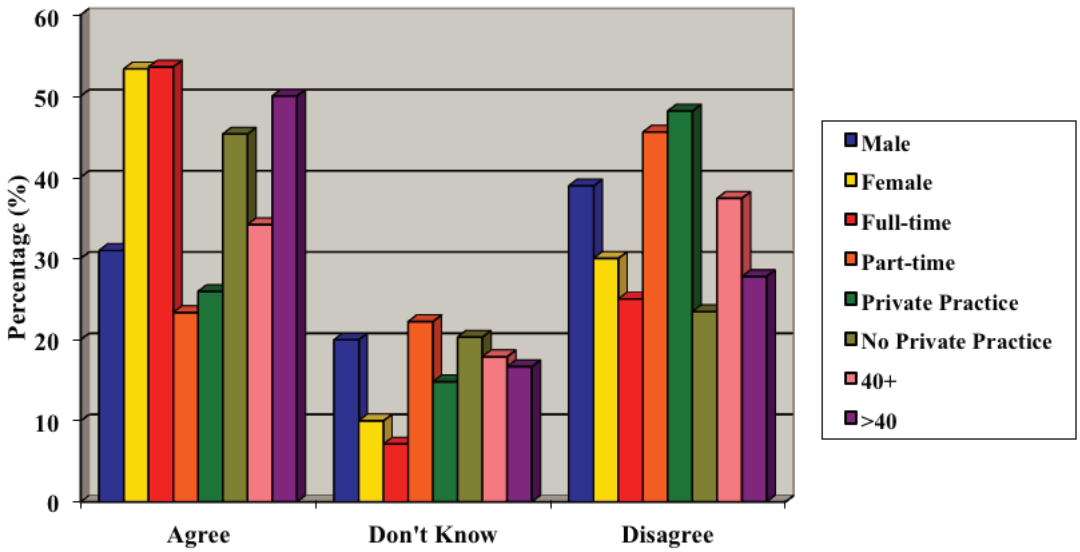

Figure 3. Responses to statement 16: "I have a personal responsibility in ensuring that the dental therapy model succeeds"

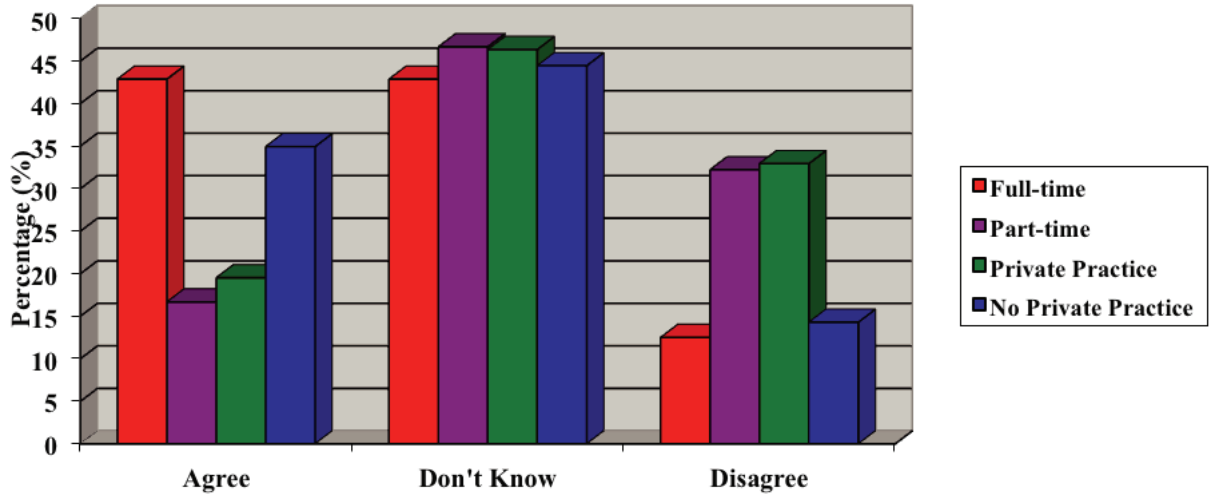

Figure 4. Responses to statement 15: "I believe that the level of training is adequate for the duties the dental therapists will take on in the future"

Table 7. Responses to statement 16: "I have a personal responsibility in ensuring that the dental therapy model succeeds"

	Gender		Private Practice		Appointment		Age	
	M	F	Yes	No	FT	PT	Over 40	≤40
Agree	31.0%	53.3%	25.9%	45.3%	80.7%	73.3%	34.2%	50.0%
Don't know	19.5%	10.0%	14.8%	20.3%	0	6.7%	17.9%	16.7%
Disagree	39.0%	30.0%	48.1%	23.4%	19.3%	20.0%	37.4%	27.8%

Note: Percentages do not include missing and not applicable responses.

faculty members acknowledged their responsibility in educating dental therapy students and recognized they are influential in shaping these students' values. This sense of personal responsibility appears stronger among those who are not in private practice and those who are younger. Female and full-time faculty members were more likely to feel responsibility in making sure that the dental therapy model succeeds. Anecdotally, some faculty members have also reassured dental therapy students that they are committed to teach these students needed knowledge and skills in spite of their lack of certainty about the role of dental therapists.[21]

About half of the respondents perceived they will carry an additional teaching load with the implementation of the new program. This may refer not to additional courses they will have to teach but to a bigger class size, albeit there are only an additional ten students in their classes. The challenge may come from teaching a class in which the students come from varying backgrounds of educational preparation. For example, both dental therapy bachelor's and master's degree students attend the same classes as the dental and dental hygiene students. Additionally, the study respondents anticipated the new program may cause some distractions that could disrupt the learning environment for other students. One would suspect that this perception will decrease as the program becomes integrated into the organizational fabric of the School of Dentistry.

Although the responding faculty members claimed they have a good understanding of the role

of dental therapists, their responses reveal hesitations about the dental therapy model. For example, they questioned the cost-effectiveness of employing dental therapists and the ability of dental therapists to increase care to underserved groups on government programs. Although there are proponents on both sides of this issue, data on the cost-effectiveness of dental therapists in a dental practice will not be available until they have been in practice for a few years. Another uncertainty that faculty members indicated in the study is the adequacy of the curriculum to prepare dental therapy students for this future practice. This uncertainty may be attributed to their lack of knowledge pertaining to dental therapists' scope of practice. It is anticipated that this attitude may change at the second or third year of the program as dental therapy students become more involved in actual patient care.

Conclusions

Since students' interactions with faculty members have a strong socializing influence, this study sought to identify our faculty members' attitudes about and perceptions of this new program to educate dental therapists. First, the respondents exhibited commitment to the traditions, norms, and values of their profession and specifically to the care of the underserved, which is the rationale for establishing the profession of dental therapy. This commitment is modeled in faculty involvement in volunteer work with the underserved in community centers and by the accommodation of underserved patients in their private practices. These attitudes and actions demonstrate an important value in the profession.

Second, the dental school faculty members in our study are socializing dental therapy students to their new roles through the faculty members' commitment to teach these students regardless of their personal feelings about the dental therapy model. Uncertainties about the dental therapy model exist even among dental faculty members, indicating a form of role conflict. However, in spite of potential conflicts between their perception of the dental therapy model and the expected teaching role, faculty members are committed to teach these students the knowledge and skills they need to do the work of a dental therapist. In fact, this study found a commitment among these faculty members to ensure that the dental therapy model succeeds. These faculty members reported they will fulfill their role expectations and guarantee the dental therapy students will be educated regardless of their own perceptions and attitudes.

Third, this study found a clear divide in attitudes about dental therapists between faculty members who are in practice outside the educational institution and those who are full-time educators, suggesting the importance of economic motivations in this debate. Future studies on the dental therapy model must include economic modeling to demonstrate not only its viability but also its economic sustainability. Then, the pieces may all come together.

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