

SOCIAL COMPETENCIES IN DENTAL EDUCATION: A FRAMEWORK FOR PROFESSIONAL TRAINING

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Abstract

Contemporary society requires dental medical professionals not only to possess technical skills and specialized knowledge but also essential social competencies to establish an effective doctor–patient relationship. Our study evaluated the role of social competencies (soft skills) in the professional training of future dentists by analyzing a sample of 116 students (79.3% female, 20.7% male). All participants completed feedback questionnaires regarding their performance and learning experience, and the responses were subsequently analyzed statistically. The results demonstrated a high overall performance: more than 88% of students achieved an “Excellent” rating across all evaluated categories. The most frequently reported strengths included empathy expressed through language (29.3%), active listening with emotional responsiveness (25.9%), and maintaining attention and eye contact (14.7%). Areas for improvement included explicitly recognizing patients’ emotions (27.6%), reducing the use of medical jargon (17.2%), and increasing the use of open-ended questions (12.9%). Statistical analyses revealed modest gender-related differences: male students more frequently required additional evaluations ($p = 0.024$), and feedback indicated slightly different learning preferences (observational vs. interactive). These findings highlight the effectiveness of the current training program while supporting the integration of personalized strategies, such as observation, feedback, and experiential learning, to optimize the development of communication skills.

Keywords: social competencies (soft skills); dentistry; empathy; doctor–patient communication; professional training; medical education.

Introduction

Contemporary society is governed by a range of demands and expectations in professions with a deeply humanitarian character, requiring future dental practitioners to acquire a complex professional training, and this training must enable them to successfully keep pace with the technical and technological advancements of modern dentistry, while maintaining the art of patient interaction [1,2].

Dental education is comprehensive, beginning with the acquisition of fundamental knowledge, anatomy, biochemistry, and biophysics, and continuing with general medical disciplines that prepare students to assess the patient’s overall health status, which can often

influence dental therapeutic procedures depending on the patient's condition, and particular attention, in terms of teaching hours, is devoted to specialized disciplines, each addressing specific aspects of dental system functionality, with significant practical implications [3,4]. During the training process, in addition to the full range of clinical and preclinical disciplines, it is especially important to include courses dedicated to the development of social competencies (soft skills), which are essential for building bridges with patients and ensuring that therapeutic success reaches its full potential [5,6].

It is well established that contemporary dentistry combines both classical techniques and technologies, applied according to the specific characteristics of each clinical case, and cutting-edge digital approaches, which provide a high degree of precision in every intervention, along with improved comfort and ergonomics [7,8]. Regardless of whether classical or modern procedures are used, the importance of social competencies remains essential to the profile of the dental practitioner, as patient interaction is fundamental throughout the doctor–patient relationship [9,10].

Among healthcare professionals, the development of communication skills is sometimes underestimated. Dentists communicate regularly with their patients and must understand their concerns and sensitivities. Given the trust patients place in them, dentists must possess exceptional communication skills to manage dental conditions while also building long-term relationships [11,12]. Empathy is a psychological construct referring to an individual's ability to understand the feelings expressed by others and to respond with compassion to their suffering [13,14]. This complex form of psychological inference integrates observation, memory, knowledge, and reasoning to provide insight into others' thoughts and emotions [15,16]. Empathy involves at least three distinct processes: feeling what another person feels; understanding what they feel; and intending to respond compassionately to their distress [17,18].

Healthcare professionals generally identify competence, respect, and empathy as among the most important attributes of professionalism. Empathy can significantly encourage and motivate patients to engage in their treatment and may positively influence their adherence to medical procedures as well as their satisfaction with care [19,20]. Stress, fear, and anxiety are common in dental care, with approximately 6–15% of the global adult population experiencing severe dental anxiety or phobia [21,22].

Dentists, like other healthcare professionals, must treat their patients with respect and compassion. Depending on their practice, they may work with diverse patient groups, including children, individuals with disabilities or special needs, patients with dental anxiety, and those with complex or advanced oral health conditions. Working with such diverse populations requires adaptability, understanding, and sensitivity. Dentists must adjust to meet the emotional needs of their patients, as this ability is essential in clinical practice [23,24].

Therefore, this study aimed to evaluate the impact of training sessions focused on social competencies/soft skills on the acquisition and integration of communication-related professional competencies among sixth-year dental students. The study was conducted within the Erasmus project “Exploring, Assessing and Applying Soft Skills in Dental Medicine University Students” Project No. 2022-1-BG01-KA220-HED-000085701.

Materials and Methods

A total of 116 sixth-year students from the Faculty of Dental Medicine, “Grigore T. Popa” University of Medicine and Pharmacy of Iași, participated in the training sessions. The cohort included 92 female students and 24 male students, and after completion of the training activities, all participants completed anonymous feedback questionnaires developed within the Erasmus project. The questionnaires assessed several dimensions of doctor–patient communication, including empathy, active listening, clarity of explanations, non-verbal communication, consultation structure, and areas requiring further improvement, and the collected data were

analyzed both quantitatively and qualitatively. Categorical variables were expressed as absolute frequencies and percentages. Gender-based comparisons were performed using the Pearson Chi-square test. Statistical significance was set at $p < 0.05$, while p-values between 0.05 and 0.10 were interpreted as borderline statistical trends.

Results

A total of 116 sixth-year students from the Faculty of Dental Medicine, “Grigore T. Popa” University of Medicine and Pharmacy of Iași, participated in the training sessions. The majority were female (79.3%, $n = 92$), while males accounted for 20.7% ($n = 24$). This gender imbalance, commonly observed in dental faculties, may represent a potential source of bias in subsequent analyses and has been considered accordingly (Table 1, Fig. 1).

Table 1. Trainees' structure by gender

		n	%
Gender	male	24	20.7
	female	92	79.3
	Total	116	100.0

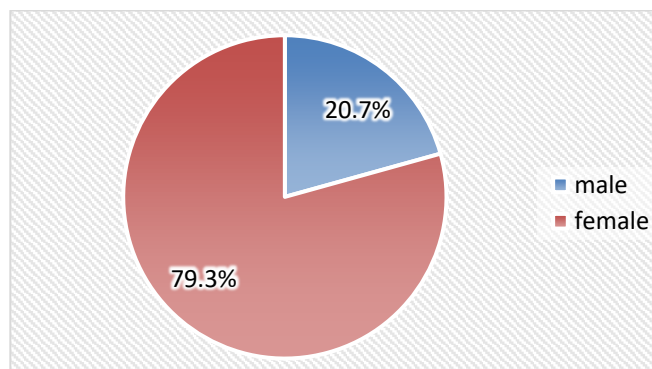


Figure 1. Trainees' structure by gender

Following the training sessions, feedback questionnaires developed as part of the project were distributed to all participants. These aimed to assess communication skills, empathy, clarity of explanations, and areas requiring improvement. The responses were collected anonymously and analyzed both quantitatively and qualitatively in order to identify general trends and potential gender differences.

Out of the total cohort, 87.1% of students ($n=101$) did not require further assessments, while 12.9% ($n=15$) needed one or more additional evaluations. Notably, males showed a higher proportion of needing two further assessments (12.5% vs. 1.1% in females). The Pearson Chi-square test indicated a statistically significant difference between genders ($p=0.024$), suggesting that male trainees were more likely to require additional assessments compared to females (table 2, fig. 2, 3).

Table 2. The amount of students who required further assessments

Further assessments	Total		Males		Females	
	n	%	n	%	n	%
0	101	87.1%	19	79.2%	82	89.1%
1	11	9.5%	2	8.3%	9	9.8%
2	4	3.4%	3	12.5%	1	1.1%
Total	116	100.0%	24	100.0%	92	100.0%

Pearson Chi-squared test: $p = 0.024^*$ statistically significant

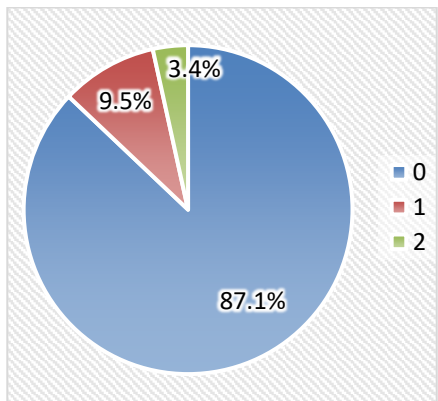


Figure 2. The amount of students who required further assessments

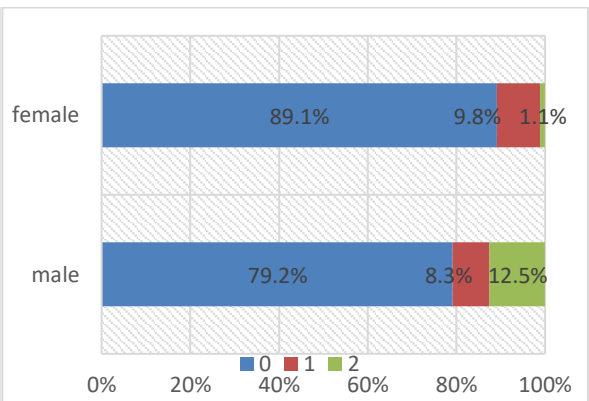


Figure 3. The amount of students who required further assessments – comparatively on genders

Overall performance was high across all categories. In each domain, over 88% of trainees achieved “Excellent” results, with relatively few students scoring at the “Very good” level. This indicates a generally strong performance in communication skills across the cohort, with minimal variation between categories (table 3, fig. 4).

Table 3. The general results of students’ assessment – on categories

	Students Assessment - results				Total	
	Very good		Excellent			
	n	%	n	%		
Category A	2	1.7	114	98.3	116	100.0
Category B	5	4.3	111	95.7	116	100.0
Category C	13	11.2	103	88.8	116	100.0
Category D	5	4.3	111	95.7	116	100.0
Category E	9	7.8	107	92.2	116	100.0
Category F	8	6.9	108	93.1	116	100.0
Category G	7	6.0	109	94.0	116	100.0

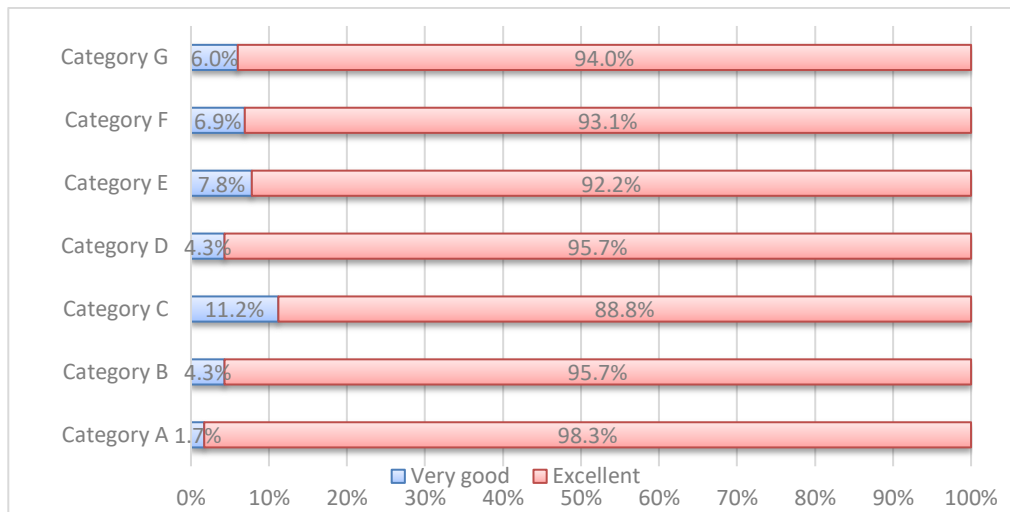


Figure 4. The general results of students' assessment – on categories

The most frequently reported strengths included the use of empathetic language (29.3%) and demonstrating good listening skills with emotional responsiveness (25.9%). Maintaining eye contact and attentiveness was also highlighted (14.7%). Less frequently noted, but still relevant, were providing clear summaries (10.3%) and simplifying medical explanations (6.9%). These findings underline that empathy and listening were the most consistently recognized strengths among trainees (table 4, fig. 5).

Table 4. Summary of feedback: What was done well during the consultation observed – general results

	n	%
1 - Used empathetic language that conveyed care and concern	34	29.3
2 - Showed good listening skills and responded to the patient's emotions	30	25.9
3 - Maintained good eye contact and an attentive posture throughout the consultation	17	14.7
4 - Provided a clear summary and ensured follow-up was well understood	12	10.3
5 - Explained medical terms in a way that was easy to understand	8	6.9
6 - Used appropriate tone and pace, which made the patient feel comfortable	5	4.3
7 - Checked for patient understanding before moving on	3	2.6
8 - Showed respect for the patient's perspective and beliefs	2	1.7
9 - Encouraged the patient to ask questions and express concerns	3	2.6
10 - Established clear structure and flow during the consultation	2	1.7
Total	116	100.0

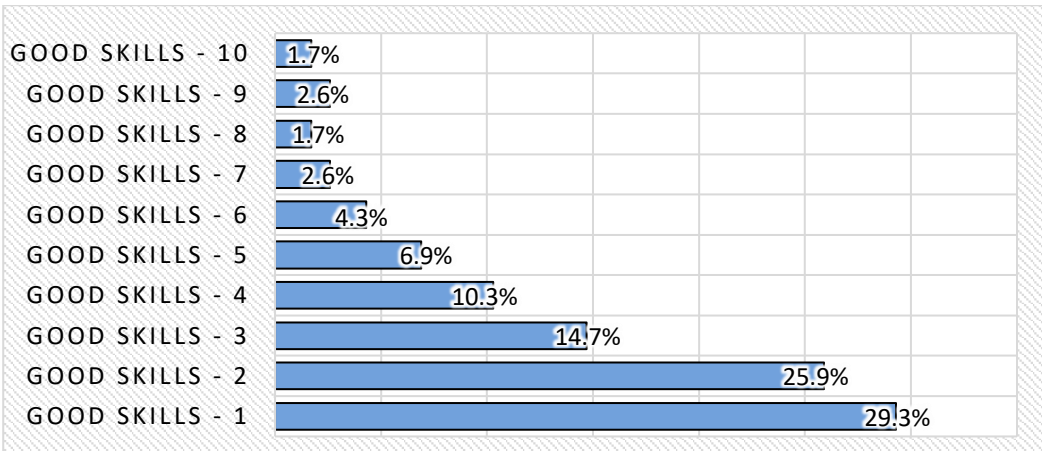


Figure 5. Summary of feedback: What was done well during the consultation observed – general results

Students were most often advised to explicitly acknowledge patient emotions (27.6%) and to reduce the use of medical jargon (17.2%). The need for more open-ended questions (12.9%) and improved transitions between consultation stages (12.9%) were also identified as areas of concern. Other aspects, such as non-verbal communication, structuring treatment explanations, and time management, were noted less frequently. These results suggest that while trainees demonstrated empathy, they could benefit from refining clarity and interaction strategies (table 5, fig. 6).

Table 5. Summary of feedback: What areas could be improved – general results

	n	%
1 - Should acknowledge patient emotions more explicitly	32	27.6
2 - Could avoid medical jargon and simplify explanations further	20	17.2
3 - Needs to use more open-ended questions to encourage fuller responses	15	12.9
4 - Could improve transitions between different parts of the consultation	15	12.9
5 - Non-verbal communication could be made more consistent	8	6.9
6 - Could structure the explanation of treatment options more clearly	9	7.8
7 - Should work on managing the consultation time more effectively	4	3.4
8 - Should engage more with the patient's concerns beyond medical symptoms	4	3.4
9 - May need to slow down the pace to make the patient feel less rushed	4	3.4
10 - Should explore the patient's personal context and expectations more deeply	3	2.6
11 - Could check understanding more consistently before closing	2	1.7
Total	116	100.0

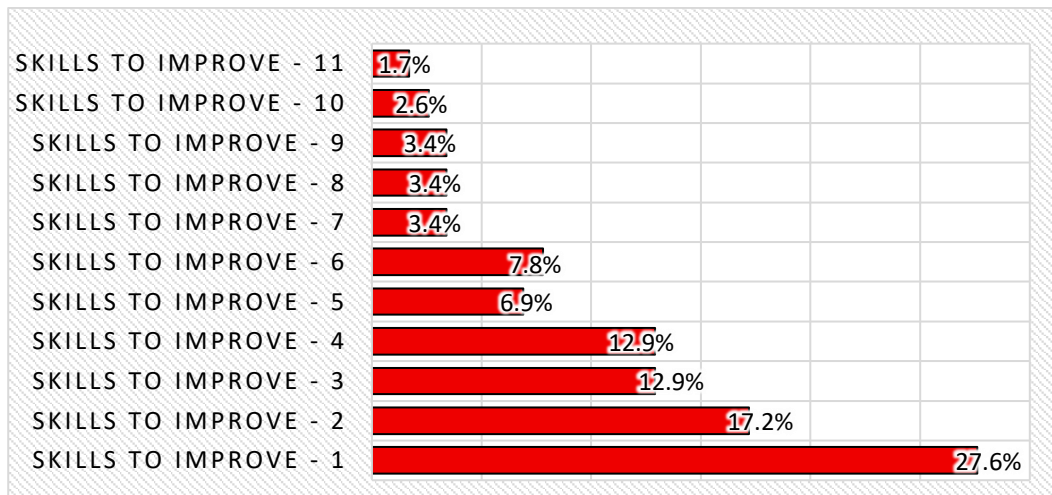


Figure 6. Summary of feedback: What areas could be improved – general results

The most frequent recommendation was observation of senior clinicians with strong communication skills (29.3%). Other strategies included personal improvement plans (12.1%), focused reading on communication (12.1%), and additional supervision (10.3%). Role-play practice (10.3%) and structured workshops (8.6%) were also suggested. These findings indicate that students value practical, observational, and experiential learning opportunities to further enhance their communication skills (table 7, fig. 8).

Table 7. Summary of feedback: Recommendations - Additional strategies which can be implemented – general results

	n	%
1 - Observation of senior clinicians with strong communication skills	34	29.3
2 - Development of a personal improvement plan with specific goals	14	12.1
3 - Focused reading on patient-doctor communication strategies	14	12.1
4 - Additional supervision during complex patient consultations	12	10.3
5 - Supervisor-led feedback after each consultation	13	11.2
6 - Role-play practice with simulated patients	12	10.3
7 - Additional training in patient-centered interviewing techniques	7	6.0
8 - Participation in a structured communication skills workshop	10	8.6
Total	116	100.0

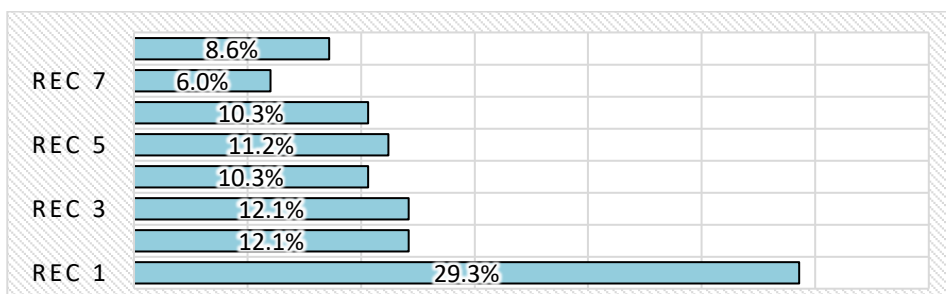


Figure 8. Summary of feedback: Recommendations - Additional strategies which can be implemented – general results

Comparative study on genders: When stratified by gender, both males and females demonstrated again predominantly excellent results across all categories. However, borderline statistical significance was observed in Categories C ($p=0.067$) and E ($p=0.087$), suggesting potential gender-related differences in these domains. Despite this, overall performance patterns remained comparable, with no consistent trend favoring either gender (table 8, fig. 9, 10).

Table 8. The general results of students' assessment, on categories, comparatively by genders

	Students Assessment - results								p-value
	Males				Females				
	Very good		Excellent		Very good		Excellent		
	n	%	n	%	n	%	n	%	
Category A			24	100.0%	2	2.2%	90	97.8%	1.000
Category B			24	100.0%	5	5.4%	87	94.6%	0.582
Category C			24	100.0%	13	14.1%	79	85.9%	0.067+
Category D	1	4.2%	23	95.8%	4	4.3%	88	95.7%	1.000
Category E	4	16.7%	20	83.3%	5	5.4%	87	94.6%	0.087+
Category F	3	12.5%	21	87.5%	5	5.4%	87	94.6%	0.359
Category G	2	8.3%	22	91.7%	5	5.4%	87	94.6%	0.633

Pearson Chi-squared test; +almost statistically significant (borderline value) p<0.10

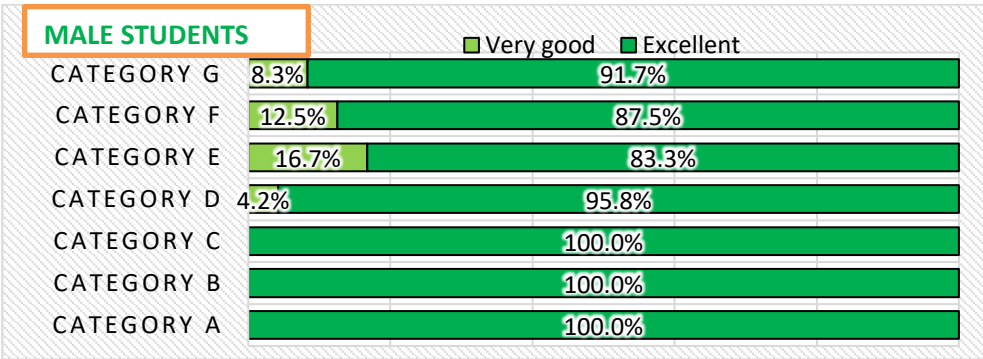


Figure 9. The general results of the male students' assessment on the categories

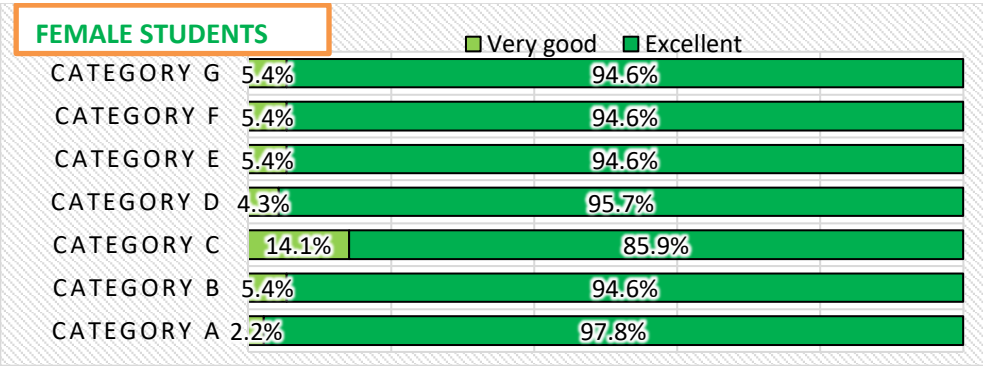


Figure 10. The general results of female students' assessment on categories

In which concerns the good communication skills observed during the training sessions, we noticed the following facts: both male and female trainees demonstrated strengths in empathy through language, posture and the capacity of listening; the females showed even improved listening skills (29.3% vs. 12.5% in males). Males, on the other hand, were more often credited with providing clear summaries (20.8% vs. 7.6% in females) and explaining the medical terms in a way easy to understand (12.5% vs. 5.4% in females). Other good communication skills were observed in isolated cases (like the using of an appropriate tone and pace, checking for patient understanding before moving on, showing respect for the patient's perspective and beliefs, encouraging the patient to ask questions and express concerns and establishing a clear structure and flow during the consultation. Despite some small differences, the Chi-square test ($p=0.344$) did not indicate a statistically significant gender effect, suggesting broadly similar strengths across genders (table 9, fig. 11).

Table 9. Summary of feedback: What was done well during the consultation observed, comparatively on genders

	Males		Females	
	n	%	n	%
1 - Used empathetic language that conveyed care and concern	8	33.3%	26	28.3%
2 - Showed good listening skills and responded to the patient's emotions	3	12.5%	27	29.3%
3 - Maintained good eye contact and an attentive posture throughout the consultation	3	12.5%	14	15.2%
4 - Provided a clear summary and ensured follow-up was well understood	5	20.8%	7	7.6%
5 - Explained medical terms in a way that was easy to understand	3	12.5%	5	5.4%
6 - Used appropriate tone and pace, which made the patient feel comfortable	1	4.2%	4	4.3%
7 - Checked for patient understanding before moving on			3	3.3%
8 - Showed respect for the patient's perspective and beliefs			2	2.2%
9 - Encouraged the patient to ask questions and express concerns			3	3.3%
10 - Established clear structure and flow during the consultation	1	4.2%	1	1.1%
Total ($p = 0.344$)	24	100.0%	92	100.0%
Pearson Chi-squared test				

Regarding areas for improvement, male students were more frequently advised to acknowledge patient emotions explicitly and reduce medical jargon, whereas female students were more often encouraged to use open-ended questions. Minor gender-related differences were also observed in consultation structure and non-verbal communication. However, the Chi-square test showed no statistically significant differences ($p = 0.639$), indicating that improvement needs were broadly balanced between male and female trainees (Table 10, Fig. 12).

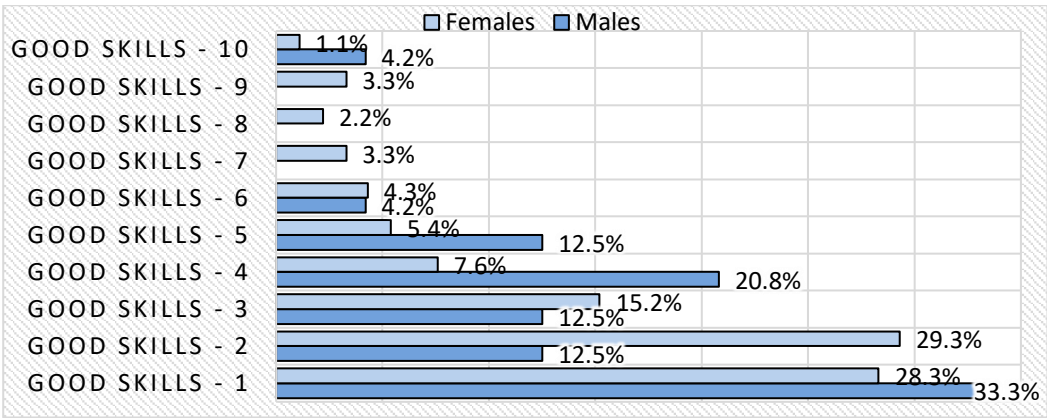


Figure 11. Summary of feedback: What was done well during the consultation observed – comparatively on genders

Table 10. Summary of feedback: What areas could be improved, comparatively on genders

	Males		Females	
	n	%	n	%
1 - Should acknowledge patient emotions more explicitly	8	33.3	24	26.1
2 - Could avoid medical jargon and simplify explanations further	7	29.2	13	14.1
3 - Needs to use more open-ended questions to encourage fuller responses	2	8.3	13	14.1
4 - Could improve transitions between different parts of the consultation	3	12.5	12	13.0
5 - Non-verbal communication could be made more consistent			8	8.7%
6 - Could structure the explanation of treatment options more clearly	2	8.3	7	7.6%
7 - Should work on managing the consultation time more effectively	1	4.2	3	3.3%
8 - Should engage more with the patient’s concerns beyond medical symptoms			4	4.3%
9 - May need to slow down the pace to make the patient feel less rushed	1	4.2	3	3.3
10 - Should explore the patient’s personal context and expectations more deeply			3	3.3
11 - Could check understanding more consistently before closing			2	2.2
Total (p = 0.639)	24	100.0	92	100.0

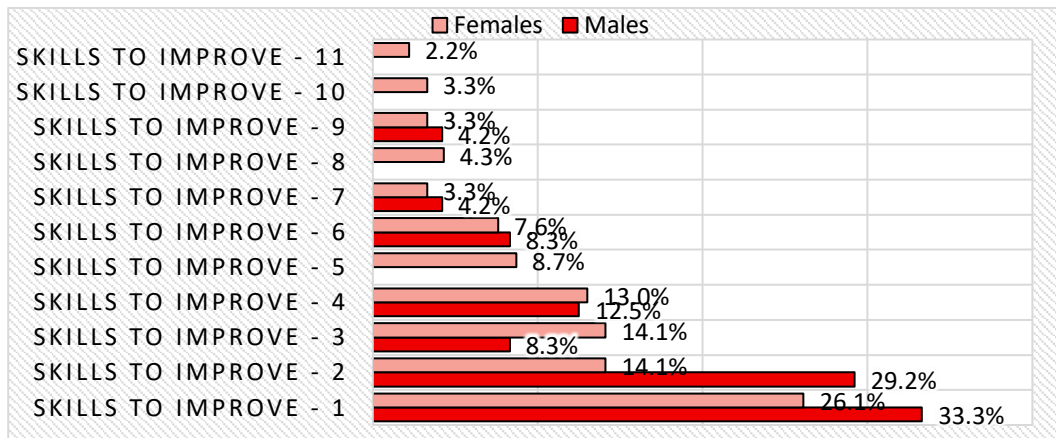


Figure 12. Summary of feedback: What areas could be improved, comparatively, on genders

Male trainees were more frequently recommended to observe senior clinicians (41.7% vs. 26.1% for females) and to receive supervisor-led feedback (25.0% vs. 7.6% in females). Females, in contrast, were more likely to be advised to develop personal improvement plan with specific goals (13.0% vs. 8.3% in males), to engage in role-play with simulated patients (12.0% vs. 4.2% in males) and to participate in structured workshops (8.7% vs. 8.3% in males); additionally, only the female students were advised to ask for additional supervision during complex patient consultations (in 13.0% cases) and for additional training in patient-centered interviewing techniques (in 7.6% cases). The Chi-square test approached borderline significance ($p=0.069$), suggesting that gender may play a role in shaping the type of recommended strategies, with males directed more towards observation and feedback, and females towards experiential training.

Table 11. Summary of feedback: Recommendations - Additional strategies which can be implemented – comparatively on genders

	Males		Females	
	n	%	n	%
1 - Observation of senior clinicians with strong communication skills	10	41.7%	24	26.1%
2 - Development of a personal improvement plan with specific goals	2	8.3%	12	13.0%
3 - Focused reading on patient-doctor communication strategies	3	12.5%	11	12.0%
4 - Additional supervision during complex patient consultations			12	13.0%
5 - Supervisor-led feedback after each consultation	6	25.0%	7	7.6%
6 - Role-play practice with simulated patients	1	4.2%	11	12.0%
7 - Additional training in patient-centered interviewing techniques			7	7.6%
8 - Participation in a structured communication skills workshop	2	8.3%	8	8.7%
Total ($p = 0.069+$)	24	100.0	92	100.0

Pearson Chi-squared test; +almost statistically significant (borderline value) $p<0.10$

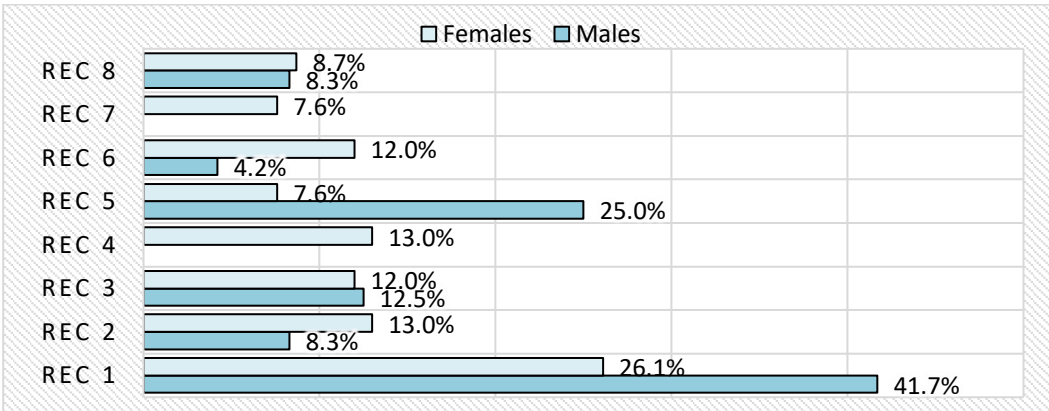


Figure 13. Summary of feedback: Recommendations - Additional strategies which can be implemented – comparatively on genders

Discussions

The present study evaluated the integration of social competencies within the professional training of sixth-year dental students, with particular emphasis on empathy, active listening, clarity of explanations, non-verbal communication, and patient-centered interaction, the results indicate a high level of performance across the evaluated domains, with more than 88% of trainees achieving “Excellent” ratings in all assessment categories, and this finding supports the relevance of structured communication training in dental education and is consistent with previous reports emphasizing that communication skills, empathy, and patient-centered behaviors represent core components of contemporary dental professionalism [2–6].

One of the most relevant findings was the predominance of empathy-related and listening-related behaviors among the strengths identified by supervisors, and the use of empathetic language, active listening, and attentive posture were the most frequently reported positive aspects. These results are clinically meaningful, as empathy is not limited to emotional sensitivity, but also involves the ability to recognize patients’ concerns, decode verbal and non-verbal cues, and respond in a manner that supports trust and therapeutic adherence [3,4,8]. In dental care, where fear, anxiety, and discomfort are common, empathic communication may reduce psychological barriers, improve patient cooperation, and contribute to a more stable doctor–patient relationship [2,3,11].

However, the findings also show that empathy was not always translated into explicit communicative behaviors, and the most frequent recommendation for improvement was the need to acknowledge patient emotions more clearly, followed by the reduction of medical jargon and the increased use of open-ended questions. This distinction is important because students may demonstrate a generally empathic attitude while still struggling to verbalize emotional recognition or adapt explanations to the patient’s level of understanding, and similar challenges have been reported in medical and dental education, where learners often require

repeated feedback and supervised practice to transform general interpersonal awareness into structured patient-centered communication [5–7,10].

The recommendation most frequently proposed by supervisors was the observation of senior clinicians with strong communication skills, followed by personal improvement plans, focused reading, additional supervision, role-play, and structured workshops, and these findings support the value of experiential and feedback-based learning models, and communication skills are not acquired exclusively through theoretical teaching; they require repeated exposure to clinical scenarios, reflective practice, simulation, direct observation, and formative feedback [6,7,10]. In this context, the combination of observation, simulation, and supervisor-led feedback may provide a more effective educational framework than isolated lectures.

The gender-based analysis revealed several noteworthy trends, and male trainees were more likely to require additional assessments, while borderline differences were observed in selected assessment categories, and moreover, males were more frequently recommended observational learning and supervisor-led feedback, whereas females were more often directed toward role-play, workshops, and patient-centered interviewing techniques, these findings may suggest differences in preferred or required learning strategies; however, they should be interpreted with caution, and the unequal gender distribution of the sample, with a substantially smaller number of male participants, limits the strength of gender-related conclusions, and therefore, these results should be viewed as exploratory rather than definitive.

Another important aspect concerns the very high proportion of “Excellent” ratings, although this may reflect the effectiveness of the training program, it may also suggest a possible ceiling effect of the assessment instrument, when most students cluster in the highest performance category, the tool may have limited ability to discriminate between different levels of competence, and future studies should consider using more granular assessment scales, objective structured clinical examinations, standardized patient encounters, or longitudinal follow-up to better capture progression in communication competence.

This study has several limitations, first, it was conducted in a single academic center, which may limit the generalizability of the findings, second, the gender distribution was imbalanced, reducing the statistical robustness of subgroup comparisons, third, the study relied on post-training feedback and categorical assessment, without a pre-training baseline or long-term follow-up, and finally, the absence of a control group prevents definitive conclusions regarding the independent effect of the training program, despite these limitations, the study provides useful evidence supporting the integration of social competencies into dental education and highlights specific areas where targeted interventions may further improve student performance.

The results confirm that structured training in soft skills can support the development of communication-related professional competencies in dental students, and the findings particularly emphasize the importance of empathy, active listening, simplified explanations, and explicit emotional acknowledgment, and future educational strategies should combine theoretical instruction with simulation, observation, individualized feedback, and reflective learning in order to strengthen the transition from technical competence to genuinely patient-centered dental care [3–7,10].

Conclusions

Overall, trainees demonstrated a high level of competence in communication skills, with the majority excelling across categories. Strengths were most apparent in empathy, listening, and attentiveness, while areas requiring further development included explicit acknowledgment of patient emotions, use of open-ended questions, and reduction of medical jargon. Although gender differences were not significant, male students tended to need more additional assessments and were more frequently recommended for observational learning, whereas female students were slightly more oriented towards interactive methods.

These findings underscore the effectiveness of the current training program but also point towards areas where targeted interventions could further enhance outcomes. Future initiatives should consider integrating personalized strategies, combining observational, feedback-driven, and experiential learning approaches to optimize communication skill development for all trainees.

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