

**Supplementary Table 1. Questionnaire Form**

**Application of Calcium Hydroxide in Preclinical Endodontic Education in Türkiye: A Nationwide Cross-Sectional Survey**

This questionnaire was prepared to evaluate the presence, form, advantages, and shortcomings of calcium hydroxide application in preclinical endodontics training in dental faculties in Türkiye.

\* Indicate the required question.

**DEMOGRAPHIC INFORMATION**

1. Which university are you studying at/working at? \*
  
  
  
  
  
2. What type of university is it? \* (Check only one option)
  - a) State University
  - b) Foundation (Private) University
  
3. What is your role in the faculty? \* (Please select only one option)
  - a) Faculty member
  - b) Research Assistant
  
4. How many years has your faculty been providing education? (Please select only one option)
  - a) 0-5 years
  - b) 6-10 years
  - c) 11 years and over

**GENERAL ENDODONTICS EDUCATION**

5. In which year is preclinical endodontics education given? (Check only one option)
  - a) 2nd Year
  - b) 3rd Year
  - c) 4th Year
  - d) Other: \_\_\_\_\_
  
6. How many hours does preclinical endodontic treatment take? (Total hours in 1 period)  
(Check only one option)
  - a) 0-10 hours
  - b) 11-20 hours
  - c) 21-40 hours 41 hours and above

**CALCIUM HYDROXIDE ADMINISTRATION IN THE CLINIC**

7. Is calcium hydroxide administered in your clinic? (Please select only one option)
  - a) Yes
  - b) No
  
8. Which type of calcium hydroxide is used in the clinic? (Check only one option)
  - a) Pre-filled syringe
  - b) Powder + liquid mixture
  - c) Other: \_\_\_\_\_
  
9. How is calcium hydroxide applied? (Please select only one option)
  - a) With manual files such as K-files
  - b) With a lentulo spiral
  - c) With a pre-filled syringe
  - d) With a root canal carrier
  - e) Other: \_\_\_\_\_

**Supplementary Table 1. Continued**

10. Which type of injector would you have students use while caring for patients? (Please select only one option)

- a) Powder-liquid mixture
- b) Pre-filled syringe
- c) Varies depending on the situation
- d) Other: \_\_\_\_\_

11. Do you think the students were able to apply the material correctly? (Please select only one option)

- a) Yes
- b) No
- c) Partially

12. Were there any instances of apical extrusion of the material? (Please select only one option)

- a) Yes, frequently
- b) Yes, rarely
- c) No, it never occurred

13. What is the most common problem encountered during application? (Please select only one option)

- a) Apical extrusion
- b) Inadequate application
- c) Prolonged application time
- d) Other: \_\_\_\_\_

**IS CALCIUM HYDROXIDE TAUGHT IN PRECLINICAL EDUCATION?**

14. Is the application of calcium hydroxide taught during preclinical training?\* (Please select only one option)

- a) Yes
- b) No

If the answer is NO;

15. In your opinion, why is it not taught?\* (Select all that apply)

- a) It is not considered necessary
- b) Lack of time
- c) Lack of technical resources/materials
- d) Lack of instructors
- e) Not included in the curriculum
- f) Other: \_\_\_\_\_

16. Does this deficiency have negative effects in clinical practice?\* (Select only one option)

- a) Yes, serious problems are encountered
- b) Yes, but it rarely affects clinical practice
- c) No, no problems are encountered

17. What difficulties are encountered in clinical practice? (Select only one option)

- a) Insufficient application skills
- b) Incorrect application
- c) Increased risk of complications
- d) Prolonged treatment duration
- e) I have not observed any difficulties

18. Is it planned to include this practice in the educational curriculum? (Select only one option)

- a) Yes
- b) No
- c) I do not know

**Supplementary Table 1. Continued**

**If the answer is YES:**

19. Which method is used to provide preclinical training? (Select only one option)

- a) Theoretical only
- b) Demonstration
- c) Student hands-on training
- d) Simulation-based training
- e) Other: \_\_\_\_\_

20. Which type of calcium hydroxide application is taught? (Select only one option)

- a) Ready-to-use systems
- b) Hand-mixed preparation
- c) Both
- d) Other: \_\_\_\_\_

21. What application method do students use? (Select only one option)

- a) Lentulo spiral
- b) Syringe
- c) Manual files
- d) Other: \_\_\_\_\_

22. Do you observe clinical benefits of this training? (Select only one option)

- a) Yes
- b) No
- c) Partially

**GENERAL OPINIONS**

23. In your opinion, should this application be taught in the preclinical curriculum? (Select only one option)

- a) Yes
- b) No
- c) Undecided

24. Which teaching method should be used? (Select only one option)

- a) Theoretical + demonstration
- b) Student hands-on practice
- c) Simulation-based training
- d) Should be taught only in the clinical setting
- e) Other: \_\_\_\_\_

25. Which application method should be used for teaching? (Select only one option)

- a) Lentulo spiral
- b) Syringe
- c) Manual files
- d) All of the above
- e) Other: \_\_\_\_\_

26. Following this survey study, is it planned to include calcium hydroxide application in the preclinical education curriculum? (Select only one option)

- a) Yes
- b) No
- c) This issue has raised awareness, and I will reflect on it

27. Are there any other practices that you think are lacking in preclinical endodontic education? (Open-ended)

\_\_\_\_\_

**Supplementary Table 2.** Clinical use and application characteristics of calcium hydroxide among dental faculties (N = 46)

| Overall (N = 46)                                                               |            |
|--------------------------------------------------------------------------------|------------|
| <b>Is calcium hydroxide applied in your clinic?</b>                            |            |
| Yes                                                                            | 46 (100.0) |
| <b>Which type of calcium hydroxide is used in your clinic?</b>                 |            |
| Powder + liquid mixture                                                        | 29 (63.0)  |
| Ready-to-use syringe                                                           | 5 (10.9)   |
| Ready-to-use syringe, Powder + liquid mixture                                  | 12 (26.1)  |
| <b>What is the method of calcium hydroxide application?</b>                    |            |
| With manuel files                                                              | 15 (32.6)  |
| With a Lentulo spiral                                                          | 4 (8.7)    |
| Ready-to-use syringe                                                           | 5 (10.9)   |
| Spreader or paperpoint                                                         | 1 (2.2)    |
| With manuel files, Ready-to-use syringe                                        | 3 (6.5)    |
| With a Lentulo spiral, Ready-to-use syringe                                    | 2 (4.3)    |
| With manuel files, With a Lentulo spiral                                       | 10 (21.7)  |
| With manuel files, With a Lentulo spiral, Ready-to-use syringe                 | 6 (13.0)   |
| <b>Which form is applied by students during patient treatment?</b>             |            |
| Powder-liquid mixture                                                          | 38 (82.6)  |
| Ready-to-use syringe                                                           | 5 (10.9)   |
| Both                                                                           | 3 (6.5)    |
| <b>In your opinion, can students apply the material accurately?</b>            |            |
| No                                                                             | 10 (21.7)  |
| Partially                                                                      | 28 (60.9)  |
| Yes                                                                            | 8 (17.4)   |
| <b>Have any incidents of apical extrusion of the material occurred?</b>        |            |
| No, has never occurred                                                         | 16 (34.8)  |
| Yes, rarely                                                                    | 29 (63.0)  |
| Yes, frequently                                                                | 1 (2.2)    |
| <b>What is the most frequently encountered problem during the application?</b> |            |
| None                                                                           | 1 (2.2)    |
| Insufficient application                                                       | 37 (82.2)  |
| Prolonged application                                                          | 6 (13.3)   |
| Apical extrusion                                                               | 6 (13.3)   |
| Consistency                                                                    | 1 (2.2)    |
| Generally, there are few problems                                              | 1 (2.2)    |

**Supplementary Table 3.** Preclinical training, curriculum status, and clinical reflections related to calcium hydroxide application

| Overall (N = 46)                                                               |           |
|--------------------------------------------------------------------------------|-----------|
| <b>Is the application of calcium hydroxide taught in preclinical training?</b> |           |
| No                                                                             | 27 (58.7) |
| Yes                                                                            | 19 (41.3) |
| <b>In your opinion, why is it not taught?</b>                                  |           |
| Following the curriculum carried over from previous terms                      | 15 (55.6) |
| Considered unnecessary                                                         | 8 (29.6)  |
| Not included in the curriculum                                                 | 8 (29.6)  |
| Lack of time                                                                   | 6 (22.2)  |
| Lack of equipment/materials                                                    | 6 (22.2)  |
| Lack of instructors                                                            | 4 (14.8)  |
| <b>Does this deficiency have negative effects in the clinic?</b>               |           |
| No problems occur                                                              | 6 (22.2)  |
| Yes, but it rarely affects                                                     | 19 (70.4) |
| Yes, Serious problems occur                                                    | 2 (7.4)   |
| <b>What challenges are encountered in the clinic?</b>                          |           |
| Insufficient application                                                       | 20 (74.1) |
| Prolonged treatment duration                                                   | 9 (33.3)  |
| No difficulties are encountered                                                | 3 (11.1)  |
| Apical extrusion of the material                                               | 3 (11.1)  |
| <b>Is it planned to include this procedure in the curriculum?</b>              |           |
| No                                                                             | 6 (22.2)  |
| Yes                                                                            | 3 (11.1)  |
| I don t know                                                                   | 18 (66.7) |
| <b>Which method is used for preclinical training?</b>                          |           |
| Theoretical and practical training                                             | 17 (85.0) |
| Student practical training                                                     | 7 (35.0)  |
| Demonstration only, no hands-on practice                                       | 2 (10.5)  |
| In a simulation environment                                                    | 1 (5.3)   |
| <b>Which type of calcium hydroxide application is taught? (You may)</b>        |           |
| Hand-mixed                                                                     | 16 (84.2) |
| Both                                                                           | 3 (15.8)  |
| <b>What is the students method of application?</b>                             |           |
| Manual files                                                                   | 11 (57.9) |
| Lentulo spiral                                                                 | 3 (15.8)  |
| Lentulo spiral, Manual files                                                   | 4 (21.1)  |
| Spreader or paper point                                                        | 1 (5.3)   |

**Supplementary Table 4.** Perceptions and future perspectives on calcium hydroxide training in preclinical education

| Overall (N = 46)                                                               |           |
|--------------------------------------------------------------------------------|-----------|
| Do you observe the benefits of this training in the clinic?                    |           |
| No                                                                             | 1 (5.3)   |
| Partially                                                                      | 6 (31.6)  |
| Yes                                                                            | 12 (63.2) |
| Do you think this practice should be taught in preclinical practice?           |           |
| Yes                                                                            | 29 (63.0) |
| No                                                                             | 5 (10.9)  |
| I'm undecided                                                                  | 12 (26.1) |
| What method should be used to provide training?                                |           |
| Theoretical-demonstration                                                      | 4 (8.7)   |
| Theoretical-demonstration-practical application                                | 42 (91.3) |
| Which application method should it be given with?                              |           |
| All of them                                                                    | 23 (50.0) |
| Manual files                                                                   | 17 (36.9) |
| Lentulo spiral                                                                 | 7 (15.2)  |
| Syringe                                                                        | 7 (15.2)  |
| Spreader or paper point                                                        | 1 (2.2)   |
| Is it planned to add calcium hydroxide application to the preclining training? |           |
| No                                                                             | 7 (15.2)  |
| Yes                                                                            | 15 (32.6) |
| Awareness has been raised on this issue, I will think about it.                | 24 (52.2) |