Additional file 3. OSCE scoring rubric (checklist and global rating scale)

Paediatric dentistry OSCE station: anxious 5-year-old child with mandibular second primary molar pain. Standardised patient (SP) integrated reception station. Time limit: 15 minutes. Final score = Checklist total (100) + GRS total (10) = 110 points.

Instrument development: A panel of four senior paediatric dentistry faculty drafted the rubric with reference to AAPD behaviour guidance [1] and published OSCE quality frameworks [2,3]. Ten non-participating students pilot-tested the station before the study. The full English rubric below corresponds to the form used by blinded examiners (random student code only).

References for development note:

[1] American Academy of Pediatric Dentistry. Behavior guidance for the pediatric dental patient. The Reference Manual of Pediatric Dentistry. Chicago, IL: AAPD; 2024.

[2] Rayyan MR. The use of objective structured clinical examination in dental education: a narrative review. Front Oral Health. 2024;5:1336677.

[3] Pell G, Fuller R, Homer M, et al. How to measure the quality of the OSCE: a review of metrics — AMEE guide no. 49. Med Teach. 2010;32(10):802-811.

Examiner and standardised patient briefing

Child: 5 years old; spontaneous and night pain in mandibular second primary molar for 2 days.

SP behaviour: Hides behind parent on entry; refuses to open mouth in chair; fear of instruments; mild crying possible; resistance increases if the student explains procedures poorly.

Parent: Highly anxious; asks whether extraction is needed and whether local anaesthesia affects brain development.

Part 1. Objective checklist (19 items, 100 points)

Scoring guide: 0 = not performed / completely incorrect; 1 = attempted but incomplete or non-standard; maximum = performed correctly and completely. Sum item scores within each domain.

Domain	Item no.	Criterion (summary)	Behavioural anchors	Score range	Max
D1	1	Ice-breaking and eye level	Squats or kneels; introduces self at child's eye level; warm manner.	0-1-2	2
D1	2	Separation anxiety management	Positions parent appropriately; establishes one-	0-3-6	6

			to-one rapport with child.		
D1	3	Chief complaint and HPI	Elicits pain character, night pain, swelling history.	0-3-6	6
D1	4	Past medical history screening	Asks allergy, systemic disease, bleeding tendency.	0-2-4	4
D1	5	Feeding and oral-hygiene habits	Night feeding, sugary snacks, brushing and fluoride use.	0-1-3	3
D1	6	Parent emotional support	Acknowledges and empathises with parental anxiety.	0-2-4	4
D2	7	Child-friendly language	Avoids fear-provoking words; uses child-appropriate terms.	0-3-6	6
D2	8	Tell-Show-Do	Explains, demonstrates on hand, proceeds after acceptance.	0-4-8	8
D2	9	Positive reinforcement	Praises specific cooperative behaviours.	0-3-6	6
D2	10	Sense of control	Hand-raise to pause; stops when child signals.	0-3-6	6
D2	11	Non-verbal communication	Calm tone, eye contact, appropriate touch.	0-2-4	4
D3	13	Painless examination technique	Gentle sequence; non-painful areas before chief complaint tooth.	0-2-4	4
D3	14	Radiographic interpretation	Caries depth, pulp, periapical status, succedaneous tooth.	0-3-6	6
D3	15	Verbal diagnosis	Clear diagnosis stated aloud.	0-2-4	4
D3	16	CoT reasoning aloud	Links history, radiographs, and diagnosis.	0-3-6	6
D4	17	Evidence-based treatment plan	Plan aligns with current paediatric guidance.	0-3-6	6
D4	18	Plain-language explanation	Explains treatment and	0-3-6	6

			crown to parent.		
D4	19	Anaesthesia concerns addressed	Reassuring, evidence-based response to parent fears.	0-3-6	6
D4	20	Prognosis and risk disclosure	Risks discussed; informed agreement sought.	0-4-7	7

Domain subtotals: D1 max 25; D2 max 30; D3 max 20; D4 max 25. Checklist total max 100. The checklist comprises 19 scored items (D1: 6; D2: 5; D3: 4; D4: 4; numbered 1–11 and 13–20; item 12 not used).

Part 2. Global rating scale (10 points)

Holistic ratings of overall performance. Circle one descriptor per dimension (1 = poor to 5 = excellent). GRS-A and GRS-B each contribute 0–5 points.

Dimension	Criterion	1 (Fail)	2 (Borderline)	3 (Pass)	4 (Good)	5 (Excellent)
GRS-A	Overall clinical logic and fluency	No logical flow; chaotic examination and history; major omissions.	Completes steps mechanically with frequent hesitation.	Completes standard workflow without major errors.	Coherent, reasonable decisions; clear clinical reasoning.	Highly fluent, precise examination and seamless reasoning.
GRS-B	Patient communication and empathy	Cold or impatient; upsets child; parent very dissatisfied.	Recites scripts without empathy; child remains resistant.	Basic calming; completes minimal informed discussion.	Warm manner; effective behaviour guidance; parent reassured.	Rapid rapport with child; skilfully reduces parental anxiety.

Score summary and examiner comments

Component	Score (/ max)
D1 History taking and rapport	/ 25
D2 Behaviour management	/ 30
D3 Examination and diagnostic reasoning	/ 20
D4 Treatment planning and consent	/ 25
Checklist total	/ 100
GRS-A Clinical logic	/ 5
GRS-B Communication and empathy	/ 5
GRS total	/ 10
Final OSCE total	/ 110

Strengths (at least one required):

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Weaknesses / critical safety issues (if any):

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Examiner signature: _____ Date: _____