Investigations on mechanical behaviour of dental composites

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The presentation of Table 2 was incorrect.
Under “Material type” the data in the columns ‘CS’, ‘Vol%’,
and Wt%, were interchanged.
The correct version is given below.

Table 2 Flexural strength (FS) and modulus (FM), diametral tensile strength (DTS) and compressive strength (CS)

Composites	FS [MPa]	FM [GPa]	DTS [MPa]	CS [MPa]
Hybrid composites				
Z250	160.8 ⁱ (22.2)	10.3 ^{lm} (0.6)	33.1 ^{abcde} (3.6)	282.9 ^k (25.6)
Synergy Duo Shade	143.5 ^{hi} (16.3)	8.7 ^{hijkl} (0.6)	28.2 ^{abc} (3.7)	272.5 ^{ijk} (27.8)
Ecusit Composite	140.7 ^{ghi} (15.5)	9.6 ^{ijkl} (0.5)	30.3 ^{abc} (5.1)	263.5 ^{hijk} (19.5)
Tetric	139.9 ^{ghi} (15.0)	9.9 ^{iklm} (0.7)	30.6 ^{abcd} (3.9)	261.2 ^{hijk} (27.8)
TPH Spectrum	138.6 ^{ghi} (15.6)	8.8 ^{hijkl} (0.3)	42.1 ^{def} (6.9)	261.2 ^{hijk} (28.0)
Enamel plus HFO	138.4 ^{ghi} (10.2)	8.5 ^{ghijk} (1.7)	33.2 ^{abcde} (4.0)	199.1 ^{efghi} (44.9)
Adamant Cavifil	135.9 ^{fghi} (18.0)	7.7 ^{efgh} (1.2)	47.7 ^f (15.9)	206.1 ^{efghij} (58.7)
Z100	134.5 ^{fghi} (18.0)	11.3 ^m (0.5)	33.5 ^{abcde} (4.8)	256.6 ^{hijk} (36.2)
Prodigy	126.6 ^{efgh} (20.9)	7.8 ^{fgh} (0.3)	38.5 ^{bcdef} (5.5)	253.6 ^{hijk} (26.9)
Arabesk Top	123.1 ^{defgh} (23.3)	8.1 ^{fghi} (0.6)	26.9 ^{ab} (4.7)	248.8 ^{ghijk} (48.4)
Herculite XRV	121.8 ^{cdefgh} (12.4)	8.5 ^{ghij} (0.6)	31.8 ^{abcd} (2.3)	251.4 ^{hijk} (33.0)
Ariston pHc	119.3 ^{bcdefgh} (11.1)	7.3 ^{efgh} (0.9)	44.2 ^{ef} (5.6)	179.3 ^{cdefg} (62.0)
Brilliant	119.2 ^{bcdefgh} (13.9)	7.7 ^{efgh} (0.6)	31.0 ^{abcd} (3.7)	218.0 ^{fghijk} (33.9)
Pertac II	117.5 ^{bcdefgh} (12.6)	8.7 ^{hijkl} (0.3)	30.4 ^{abcd} (3.3)	242.2 ^{ghijk} (38.0)
Tetric Ceram	116.9 ^{bcdefgh} (9.2)	8.1 ^{fghi} (0.4)	39.2 ^{cdef} (3.7)	248.0 ^{ghijk} (24.8)
Superlux Universalhybrid	113.9 ^{bcdefg} (9.2)	6.9 ^{efg} (0.7)	32.0 ^{abcd} (7.8)	267.7 ^{ijk} (53.4)
EcuSphere Carat	112.8 ^{bcdefg} (17.6)	6.6 ^{def} (0.8)	34.7 ^{bcde} (4.4)	252.3 ^{hijk} (27.6)
Venus	108.6 ^{bcdef} (14.7)	2.9 ^a (0.6)	31.0 ^{abcd} (5.0)	156.8 ^{bcdef} (35.6)
Hermes	108.5 ^{bcdef} (24.0)	7.5 ^{efgh} (1.4)	31.6 ^{abcd} (7.2)	129.1 ^{abcd} (43.3)

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Table 2 (continued)

Composites	FS [MPa]	FM [GPa]	DTS [MPa]	CS [MPa]
Esthet-X	106.8 ^{bcd} ef (13.6)	7.8 ^{figh} (0.6)	29.3 ^{abc} (3.7)	272.4 ^{jk} (13.2)
Point 4	104.2 ^{bcd} de (14.0)	5.7 ^{cd} (1.5)	27.0 ^{ab} (11.5)	150.2 ^{bcd} ef (35.2)
Reference	102.7 ^{abcde} (8.5)	10.1 ^{klm} (1.8)	37.5 ^{bcd} ef (6.7)	284.4 ^k (35.0)
Charisma	102.4 ^{abcde} (11.1)	7.1 ^{efg} (0.5)	27.3 ^{ab} (3.0)	263.3 ^{hijk} (15.3)
Beautiful	98.4 ^{abcde} (16.6)	5.2 ^{cd} (1.0)	29.0 ^{abc} (7.9)	121.6 ^{abc} (27.1)
Clearfil ST	97.5 ^{abcde} (16.8)	6.1 ^{cde} (1.0)	27.6 ^{abc} (5.0)	150.8 ^{bcd} ef (45.1)
Miris	94.9 ^{abcd} (16.6)	4.7 ^{bc} (1.2)	22.4 ^a (7.9)	70.8 ^a (23.5)
InTenS	93.1 ^{abc} (9.8)	4.8 ^{bc} (0.5)	35.9 ^{bcd} ef (6.3)	195.3 ^{defgh} (37.6)
CapoCom.4	91.8 ^{ab} (19.0)	3.4 ^{ab} (0.8)	30.3 ^{abc} (4.9)	100.4 ^{ab} (17.5)
ELS Extra low shrinkage	73.6 ^a (19.0)	2.4 ^a (0.8)	26.9 ^{ab} (6.5)	138.3 ^{abcde} (56.6)
Nano-hybrid composites				
Filtek Supreme Enamel	125.5 ^d (13.1)	5.4 ^{bc} (0.6)	39.2 ^{abc} (8.3)	267.4 ^b (38.3)
Filtek Supreme Dentin	122.1 ^{cd} (14.4)	5.2 ^{ab} (0.5)	41.8 ^{abc} (7.8)	103.7 ^a (20.9)
Filtek Supreme XT	108.6 ^{bcd} (19.0)	6.1 ^c (1.1)	35.8 ^{ab} (7.6)	134.3 ^a (46.7)
CeramX Duo	100.9 ^{abc} (17.9)	4.5 ^{ab} (0.5)	32.0 ^a (4.9)	214.9 ^b (25.6)
Tetric Evo Ceram	96.0 ^{ab} (14.3)	5.3 ^{bc} (0.5)	38.5 ^{abc} (5.2)	219.7 ^b (46.9)
CeramX Mono	95.0 ^{ab} (13.3)	4.3 ^a (0.4)	39.6 ^{abc} (7.9)	240.7 ^b (25.8)
Premise Enamel	82.2 ^a (8.1)	5.0 ^{ab} (0.5)	45.1 ^{bc} (4.5)	242.8 ^b (36.1)
Micro-filled composites				
Heliomolar radiopaque	87.6 ^c (3.0)	4.1 ^b (0.2)	25.1 ^{ab} (2.4)	231.3 ^a (22.9)
Durafill	76.4 ^b (9.2)	3.0 ^a (0.2)	21.5 ^a (2.4)	289.8 ^b (33.1)
EcuSphere Shine	68.4 ^a (6.1)	3.3 ^a (0.3)	27.2 ^b (4.5)	219.2 ^a (22.2)
Silux Plus	62.8 ^a (3.4)	5.0 ^c (0.3)	22.4 ^a (2.1)	254.3 ^{ab} (30.4)
Packable composites				
Filtek P60	136.2 ^d (9.9)	10.2 ^c (0.5)	37.3 ^{cd} (6.4)	273.7 ^c (43.8)
Alert	124.7 ^{cd} (22.1)	12.5 ^d (2.1)	46.8 ^c (3.1)	275.6 ^c (22.9)
Synergy Compact	124.1 ^{cd} (11.8)	8.2 ^{bc} (0.6)	22.9 ^a (4.5)	195.4 ^{ab} (34.8)
Surefil	110.5 ^{bcd} (24.3)	7.4 ^b (2.0)	31.9 ^{bc} (7.8)	180.9 ^a (82.2)
Prodigy Condensable	102.4 ^{bc} (32.3)	9.1 ^{bc} (1.4)	32.2 ^{bc} (5.7)	141.5 ^a (25.7)
Solitaire 2	100.2 ^{bc} (9.4)	7.7 ^b (0.5)	32.0 ^{bc} (2.9)	285.0 ^c (26.7)
Quix Fil	99.5 ^{bc} (29.4)	7.6 ^b (1.2)	42.7 ^{de} (7.8)	212.7 ^{abc} (30.3)
Solitaire 1	82.3 ^{ab} (9.9)	4.3 ^a (0.3)	26.4 ^{ab} (2.3)	257.2 ^{bc} (25.6)
Tetric Condensable	65.4 ^a (17.3)	8.7 ^{bc} (2.0)	38.9 ^{cde} (4.7)	171.0 ^a (39.7)
Ormocer-based composites				
Definite	120.5 (3.2)	7.1 (0.6)	26.9 (3.5)	223.7 (32.2)
Admira	88.2 (19.7)	7.9 (3.5)	43.4 (5.2)	208.4 (31.0)
Compomers				
Luxat	131.6 ^d (24.2)	12.4 ^d (0.6)	48.9 ^d (5.4)	256.6 ^b (19.4)
Hytac	123.5 ^{cd} (16.7)	11.7 ^d (0.7)	45.2 ^d (5.4)	227.7 ^b (14.5)
Compoglass F	104.0 ^{bcd} (21.7)	8.8 ^{bc} (0.6)	29.7 ^{abc} (3.3)	201.4 ^a (48.3)
Dyract	101.0 ^{bc} (22.9)	7.3 ^a (0.8)	33.1 ^{bc} (4.1)	247.8 ^{ab} (22.7)
Glasiosite	100.1 ^{bc} (15.5)	9.0 ^c (0.5)	36.4 ^c (5.7)	237.6 ^{ab} (32.6)
Dyract AP	84.9 ^b (16.0)	7.7 ^{ab} (0.6)	25.4 ^a (2.2)	201.5 ^a (19.4)
Elan	81.5 ^b (18.2)	7.9 ^{abc} (1.0)	25.5 ^a (4.1)	256.4 ^{ab} (45.2)
F2000 Rasant	31.0 ^a (9.5)	8.4 ^{bc} (0.8)	26.8 ^{ab} (2.8)	218.5 ^{ab} (15.4)

Table 2 (continued)

Composites	FS [MPa]	FM [GPa]	DTS [MPa]	CS [MPa]		
Flowable composites						
FLOWline	133.0 ^g (13.9)	5.1 ^{bcd} (0.4)	53.6 ^d (6.5)	286.3 ^{bc} (29.4)		
Arabesko Flow	131.7 ^g (22.0)	6.4 ^c (0.7)	38.4 ^{abc} (7.0)	266.8 ^{bc} (36.0)		
Tetric Flow	114.7 ^{cfig} (13.1)	4.8 ^{bcd} (1.4)	38.6 ^{abc} (4.9)	257.3 ^{abc} (48.6)		
Palfique Estelite Low Flow	105.1 ^{def} (15.3)	2.3 ^a (0.3)	35.8 ^{abc} (12.0)	239.2 ^{abc} (60.7)		
Reference Flow	103.8 ^{cdef} (10.1)	5.8 ^{de} (0.3)	40.1 ^{bc} (9.1)	299.0 ^c (23.0)		
Revolution	92.0 ^{bcd} (5.0)	4.0 ^b (0.4)	28.4 ^{ab} (6.0)	253.9 ^{abc} (14.3)		
Grandio Flow	85.2 ^{abcd} (23.1)	4.1 ^b (0.6)	44.6 ^{cd} (4.4)	233.1 ^{ab} (16.3)		
Definite Flow	81.7 ^{abcd} (31.4)	4.3 ^{bc} (0.7)	33.4 ^{abc} (9.1)	250.3 ^{abc} (49.3)		
Palfique Estelite High Flow	69.3 ^{ab} (10.3)	1.6 ^a (0.4)	38.7 ^{abc} (12.1)	285.5 ^{bc} (42.9)		
Admira Flow	62.8 ^a (11.0)	5.4 ^{cde} (1.4)	31.2 ^{ab} (7.2)	277.3 ^{bc} (19.2)		
Flowable compomers						
Compoglass Flow	120.4 ^{fg} (10.0)	5.5 ^{cde} (0.3)	39.6 ^{bc} (7.2)	262.2 ^{bc} (38.4)		
PrimaFlow	95.7 ^{bcd} (11.8)	4.5 ^{bc} (0.2)	38.9 ^{abc} (7.2)	195.1 ^a (10.5)		
Estelite Flow Quick	77.5 ^{abc} (16.0)	2.5 ^a (0.3)	26.8 ^a (5.0)	261.7 ^{bc} (45.2)		
Dyract Flow	62.9 ^a (14.7)	4.3 ^{bc} (0.3)	28.7 ^{ab} (4.7)	232.2 ^{ab} (29.9)		
Material type					Vol. %	Wt. %
Hybrid Composites	116.6 ^d (23.9)	7.3 ^b (2.3)	32.5 ^b (8.0)	211.5 ^a (71.1)	60.5 ^{de} (5.7)	79.0 ^{ef} (3.2)
Packable Composites	105.9 ^{cd} (28.1)	8.4 ^{bc} (2.5)	34.3 ^{bc} (8.8)	217.4 ^a (66.5)	63.0 ^c (3.2)	80.3 ^f (3.5)
Ormocer-based Composites	104.3 ^{bcd} (21.6)	7.5 ^b (2.4)	35.2 ^{bc} (9.5)	216.0 ^a (31.5)	60.6 ^{de} (0.4)	77.0 ^d (0)
Nano-hybrid Composites	103.1 ^{bcd} (19)	5.0 ^a (0.8)	40.5 ^d (8.3)	210.8 ^a (63.3)	59.7 ^d (3.9)	78.4 ^{de} (2.5)
Compomers	94.7 ^{bc} (34)	9.2 ^c (1.9)	33.9 ^{bc} (9.4)	230.9 ^{ab} (35.3)	56.0 ^c (6.8)	74.9 ^c (5.6)
Flowable Compomers	89.1 ^{ab} (25.2)	4.2 ^a (1.1)	33.5 ^{bc} (8.3)	237.8 ^{ab} (42.4)	43.3 ^a (4.3)	64.4 ^b (4.1)
Flowable Composites	99.8 ^{bc} (27.4)	4.4 ^a (1.6)	38.3 ^{cd} (10)	264.2 ^b (41.5)	48.4 ^b (6.5)	66.1 ^b (4.3)
Microfilled Composites	73.5 ^a (10.9)	3.8 ^a (0.8)	24.2 ^a (3.8)	246.9 ^{ab} (37.8)	42.7 ^a (3.0)	60.7 ^a (4.0)

Data are arranged in descending order of the flexural strength value

Superscript letters indicate statistically homogeneous subgroups within a material category (Tukey's HSD test, $\alpha=0.05$)