

Table 2 Reported orthodontic treatment needs in different countries using the Dental Aesthetic Index (DAI)

Author	Year	Sample			DAI scores				Mean DAI score
		Country	Size	Age (years)	13–25 %	26–30 %	31–35 %	≥ 36 %	
Jenny et al. [16]	1991	America (whites)	1337	15–18	46	26	15	13	26.5
		America (native)	485	12–17	19	26	25	30	31.8
Spencer et al. [19]	1992	Australia	5000	13	–	–	–	–	28.1
Jenny et al. [14]	1993	America	1306	15–18	45.7	23.6	15.5	15.2	–
Ansai et al. [20]	1993	Japan	409	15–18	32	21	25	22	30.5
Jenny & Cons [6]	1996	America	7500	12–17	45.8	25.2	15.0	14.0	–
Kato et al. [21]	1998	China (Taiwan)	176	18–24	–	–	–	–	22.3
		Australia	268	12–16	–	–	–	–	24.1
Otuyemi et al. [22]	1999	Nigeria	703	12–18	77.4	13.4	9.2	–	22.3
Johnson & Harkness [23]	2000	New Zealand	–	10	23	22	22	33	–
Esa et al. [28]	2001	Malaysia	1519	12–13	62.6	–	30.4	7.0	–
Abdullah & Rock [25]	2001	Malaysia	5112	12–13	–	–	–	24.1	24.6
Al-Huwaizi [18]	2002	Iraq	6957	13	65.8	16.8	10.2	7.2	24.3
Baca-Garcia et al. [22]	2004	Spain	744	14–20	58.6	20.3	11.2	9.9	25.6
Van Wyk & Drummond [23]	2005	South Africa	6142	12	47.7	21.2	14.1	16.9	–
Foster et al. [24]	2006	New Zealand	430	12–13	39.5	–	43.5	17.0	28.3
Bernabe & Flores-Mir [25]	2006	Peru	267	16–25	41.9	25.5	15.0	17.6	28.9
Danaei et al. [30]	2007	Iran	900	12–15	70.1	17.8	7.9	4.2	23.5
Present study	2005	Iraq, Sulaimaniya	998	13	58.6	18.5	12.5	10.3	25.4

– indicates data not available.