Table 1 Main characteristics of the studies included

First author (Reference)	Year	Country	Mean age of students (SD), years	Sample size	Reported prevalence of self-medication %	Study quality score
Lau (21)	1995	China, Hong Kong SAR	20.5 (SD 2.2)	563	94.0	7–15
Burak (22)	2000	USA	NA	471	89.0	16–22
Cabrita (23)	2004	Portugal	NA	1145	7.9	16–22
Aguado (24)	2005	Argentina	NA	216	85.0	7–15
McCabe (25)	2005	USA	NA	9161	NA	16–22
James (26)	2006	Bahrain	18.01 (SD 0.78)	134	44.8	7–15
Awad (27)	2007	Sudan	NA	1121	79.5	1–6
Castronuovo (28)	2007	Argentina	NA	462	95.0	16–22
Hussain (29)	2008	Pakistan	NA	200	42.0	7–15
Sawalha (30)	2008	Palestine	20 (SD 1.7)	1581	66.1	7–15
Zafar (31)	2008	Pakistan	21 (SD 1.8)	572	76.0	1–6
Sawalha (32)	2008	Palestine	19.9 (SD 1.7)	1581	98.0	7–15
Sarahroodi (33)	2009	Iran (IR)	NA	160	53.0	1–6
Abay (34)	2010	Ethiopia	NA	213	38.5	7–15
de Aquino (35)	2010	Brazil	NA	223	65.5	16–22
Marine (36)	2010	Argentina	NA	5170	50.1	16–22
Sapkota (37)	2010	Nigeria	NA	706	24.0	7–15
Sarahroodi (38)	2010	Iran (IR)	21.5 (SD 0.25)	195	NA	16–22
Verma (39)	2010	India	20.13 (SD 2.32)	1022	87.0	7–15
Chowdhury (40)	2011	Bangladesh	NA	1107	16.0	7–15
El Ezz (41)	2011	Egypt	19.1 (SD 1.5)	300	55.0	7–15
Gutema (42)	2011	Ethiopia	21.5	148	43.2	7–15
Klemenc-Ketis (43)	2011	Slovenia	NA	410	94.9	16–22
Klemenc-Ketis (44)	2011	Slovenia	22.4 (SD 3.24)	1294	NA	16–22
Mumtaz (45)	2011	Pakistan	22	207	80.4	1–6
Souza (46)	2011	Brazil	21 (SD 1.95)	196	38.8	16–22
Auta (47)	2012	Nigeria	NA	188	53.2	1–6
Banerjee (48)	2012	India	21.03 (SD 4.82)	468	57.1	7–15
da Silva (49)	2012	Brazil	22 (SD 6.17)	789	86.4	16–22
da Silva (50)	2012	Brazil	21.5	200	92.0	16–22
Donkor (51)	2012	Ghana	NA	600	70.0	7–15
Galato (52)	2012	Brazil	22.9 (SD 4.2)	342	37.0	7–15
Ibrahim (53)	2012	United Arab Emirates	19.5 (SD 2.4)	169	86.0	16–22
Murtaza (54)	2012	Pakistan	NA	450	78.7	16–22
Osemene (55)	2012	Nigeria	NA	2000	NA	7–15
Pan (56)	2012	China	NA	1300	47.8	16–22
Suaifan (57)	2012	Jordan	NA	570	NA	16–22
Tabiei (58)	2012	Iran (IR)	NA	1048	86.7	16–22
Angamo (59)	2012	Ethiopia	18–24	403	45.9	16–22
Betancourt (60)	2013	Puerto Rico	NA	275	27.6	1–6
Imtiaz (61)	2013	Pakistan	NA	300	83.0	7–15
Kumar (62)	2013	India	20.3 (SD 61.5)	440	78.6	16–22
Purreza (63)	2013	Iran (IR)	NA	600	35.7	16–22
Ullah (64)	2013	Pakistan	NA	256	95.5	16–22
Al Hussaini (65)	2014	Kuwait	NA	837	97.8	1–6
Brlic (66)	2014	Croatia	NA	389	NA	16–22
Damian (67)	2014	Romania	NA	281	41.0	16–22
Flaiti (68)	2014	Oman	22.3	450	36.7	16–22
Ghafouri (69)	2014	Iran (IR)	22.84 (SD 4.19	590	41.9	7–15
Lukovic (70)	2014	Serbia	NA	1295	79.9	16–22

Table 1 Main characteristics of the studies included *(concluded)*

First author (Reference)	Year	Country	Mean age of students (SD), years	Sample size	Reported prevalence of self-medication %	Study quality score
Lv (71)	2014	China	NA	731	40.2	16–22
Martinez (72)	2014	Brazil	22.09 (SD 9.94)	498	NA	16–22
Pirzadeh (73)	2014	Iran (IR)	22.00 (SD 2.77)	197	85.0	16–22
Saeed (74)	2014	Saudi Arabia	21.95 (SD 3.43)	354	86.2	16–22
Shah (75)	2014	Pakistan	20.04 (SD 1.74)	431	47.6	7–15
Sharif (76)	2014	United Arab Emirates	20.4 (SD 2.6)	200	59.0	7–15
Patil (77)	2014	India	20.4 (SD 1.22	440	88.2	16–22
Alam (78)	2015	Bangladesh	NA	500	NA	7–15
Chiribagula (79)	2015	Democratic Republic of the Congo	23	510	99.0	16–22
Ghaieth (80)	2015	Libya	NA	363	NA	7–15
Gholipour (81)	2015	Iran (IR)	NA	320	48.0	16–22
Gunawardhana (82)	2015	Sri Lanka	NA	175	85.1	1–6
Ibrahim (83)	2015	Saudi Arabia	NA	504	NA	16–22
Sharma (84)	2015	India	NA	624	NA	7–15
Aashi (85)	2016	Saudi Arabia	NA	507	74.0	16–22
Ahamdi (86)	2016	Iran (IR)	21.63 (SD 1.92)	364	33.7	16–22
Albasheer (87)	2016	Saudi Arabia	NA	300	87.0	16–22
Ali (88)	2016	Pakistan	23.5 (SD 3.6)	150	52.7	16–22
Alkhatatbeh (89)	2016	Jordan	NA	1317	78.5	16–22
Banerjee (90)	2016	Nepal	NA	488	81.4	16–22
Birru (91)	2016	Ethiopia	21 (SD 1.61)	464	77.6	16–22
Ibrahim (92)	2016	Malaysia	22 (SD 1.7)	363	46.6	7–15
Iuras (93)	2016	Brazil	NA	180	89.0	1–6
Jamshed (94)	2016	Malaysia	19.55 (SD 1.761	461	57.2	16–22
Jimenez-Nunez (95)	2016	Spain	NA	249	72.7	16–22
Johnson (96)	2016	India	17–26	736	NA	16–22
Juibari (97)	2016	Iran (IR)	21.01 (SD 1.46)	175	45.7	16–22
Kumar (98)	2016	India	NA	664	NA	16–22
Morowatisharifabad (99)	2016	Iran (IR)	21.9 (SD 2.41)	237	45.1	16–22
Noor (100)	2016	Pakistan	20.64 (SD 1.68)	413	96.9	7–15
Saleem (101)	2016	Pakistan	21.2 (SD 2.2)	380	NA	16–22
Williams (102)	2016	Australia	NA	120	91.7	16–22
Yadav (103)	2016	Nepal	NA	570	90.1	7–15
Zhu (104)	2016	China	21	660	47.9	16–22
Al-Ameri (105)	2017	Iraq	19.8 (SD 1.6)	1435	92.4	16–22
Gelayee (106)	2017	Ethiopia	21.26 (SD 1.76)	385	32.7	7–15
Haroun (107)	2017	Syrian Arab Republic	NA	436	NA	16–22
Helal (108)	2017	Egypt	20 (SD 0.7)	800	62.9	16–22
Jakaria (109)	2017	Bangladesh	NA	439	52.2	7–15

SD: standard deviation, SAR: Special Administrative, Region, USA: United States of America, NA: not available, IR: Islamic Republic of

Results of the subgroup analysis based on income level, geographical region, sample size, study quality, year of publication, type of students (medical or non-medical) and sex are shown in Table 2. Heterogeneity as assessed by the I^2 statistic was high, statistically significant for all these subgroup analyses and ranging from 87.77% to 99.89%. Stratifying according to the income level of the country in which the study was conducted, the prevalence of self-medication was 65% (95% CI: 44.8–80.9%), 71.8% (95% CI: 66.8–76.3%) and 67.2% (95% CI: 46.5–82.9%) in high-, middle- and low-income countries, respectively. Based on region, the highest prevalence of self-medication was 91.7% (95% CI: 85.2–95.5%) in Oceania and the lowest was 55.8% (95% CI: 28–80.4) in Europe. The prevalence of self-medication was higher in female students (76.6% (95% CI: 65.0–85.2%)) than male students (66.9% (95% CI: 56.4–75.9%)), and in medical students (97.2% (95% CI: 95.4–98.3%)) than non-medical students