SUPPLEMENTAL INFORMATION

Hypnotic prescription trends and patterns for the treatment of insomnia in Japan: analysis of a nationwide Japanese claims database

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Table S1 Profile of insomnia patients prescribed hypnotics in the JMDC Claims Database from 2010–2019 by fiscal year

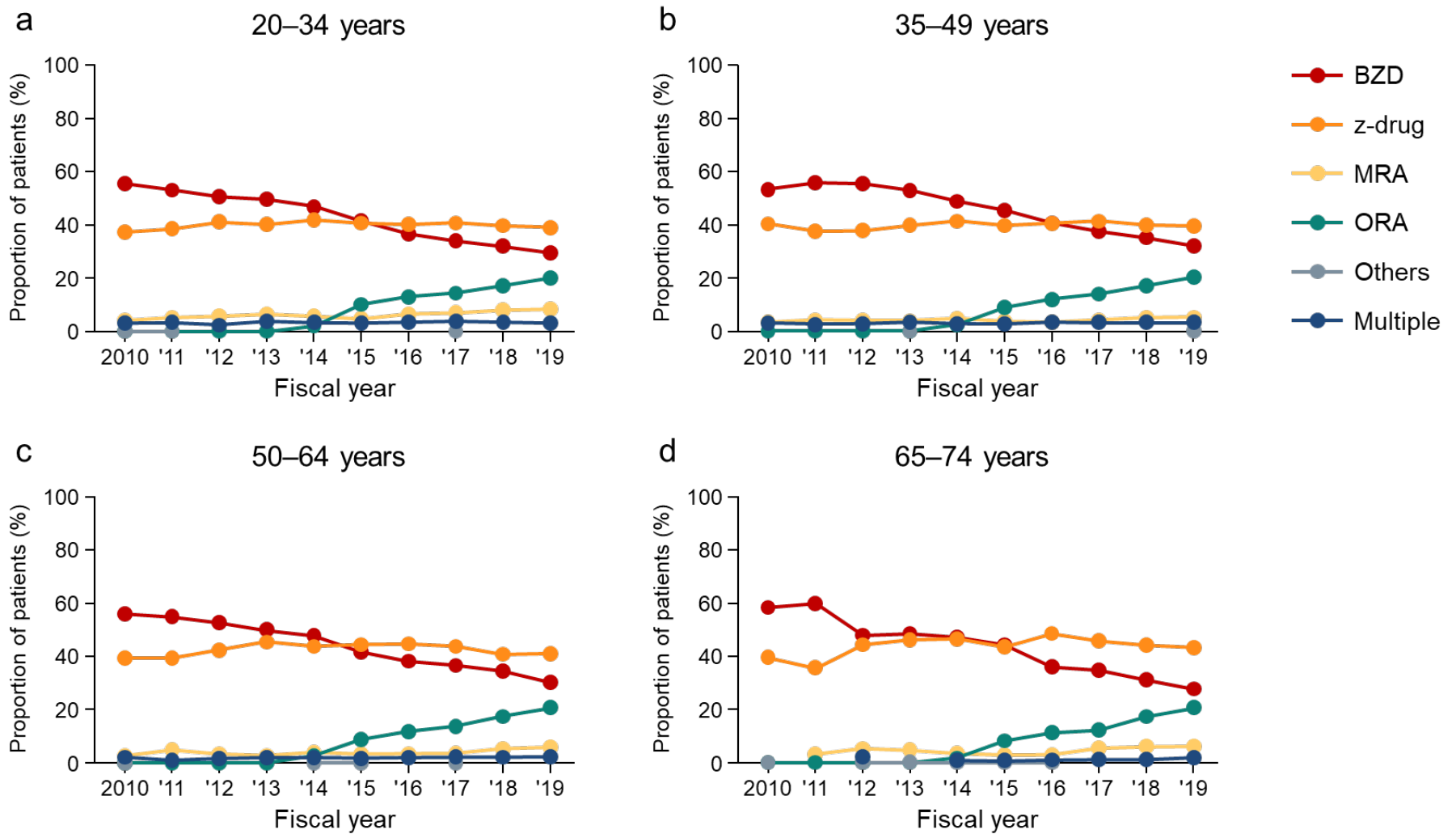| Year	Subjects registered in JMDC Claims Database	Patients with diagnosis of insomnia	Patients with diagnosis of insomnia and prescribed ≥1 hypnotic	Study cohort: All users	Study cohort: New users	Study cohort: Long-term users
	N	N (%)	N (%)	N	N	N
2010	932,265	36,817 (3.9)	14,739 (1.6)	5521	1880	795
2011	1,109,462	56,359 (5.1)	22,982 (2.1)	9591	3164	1500
2012	1,567,889	74,576 (4.8)	31,658 (2.0)	13,645	4482	1980
2013	2,448,338	107,898 (4.4)	47,192 (1.9)	21,516	5990	3524
2014	2,613,490	115,905 (4.4)	51,903 (2.0)	36,954	9858	6282
2015	3,720,120	175,091 (4.7)	81,182 (2.2)	40,997	10,598	6970
2016	4,597,101	221,555 (4.8)	105,089 (2.3)	67,090	16,720	12,015
2017	5,389,907	269,157 (5.0)	130,800 (2.4)	88,858	22,222	15,705
2018	6,148,904	317,112 (5.2)	156,062 (2.5)	108,317	26,575	19,231
2019	5,948,817	321,048 (5.4)	156,691 (2.6)	123,727	28,688	23,213

Fiscal year = April 1st–March 31st

Table S2 Proportions of new users of hypnotics by age and sex per analysis period

Analysis period		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
N		1880	3164	4482	5990	9858	10,598	16,720	22,222	26,575	28,688
Age	20–34 yr	480	787	1115	1418	2377	2530	3861	5070	6719	7858
		(25.5%)	(24.9%)	(24.9%)	(23.7%)	(24.1%)	(23.9%)	(23.1%)	(22.8%)	(25.3%)	(27.4%)
	35–49 yr	765	1315	1861	2385	3920	4246	6316	8158	9607	10,172
		(40.7%)	(41.6%)	(41.5%)	(39.8%)	(39.8%)	(40.1%)	(37.8%)	(36.7%)	(36.2%)	(35.5%)
	50–64 yr	534	905	1247	1765	2934	3155	5471	7423	8612	9145
		(28.4%)	(28.6%)	(27.8%)	(29.5%)	(29.8%)	(29.8%)	(32.7%)	(33.4%)	(32.4%)	(31.9%)
	65–74 yr	101	157	259	422	627	667	1072	1571	1637	1513
		(5.4%)	(5.0%)	(5.8%)	(7.0%)	(6.4%)	(6.3%)	(6.4%)	(7.1%)	(6.2%)	(5.3%)
Sex	Male	1064	1702	2487	3268	5551	5932	9232	12,207	14,426	15,466
		(56.6%)	(53.8%)	(55.5%)	(54.6%)	(56.3%)	(56.0%)	(55.2%)	(54.9%)	(54.3%)	(53.9%)
	Female	816	1462	1995	2722	4307	4666	7488	10,015	12,149	13,222
		(43.4%)	(46.2%)	(44.5%)	(45.4%)	(43.7%)	(44.0%)	(44.8%)	(45.1%)	(45.7%)	(46.1%)

Table S3 Proportions of long-term users of hypnotics by age and sex per analysis period

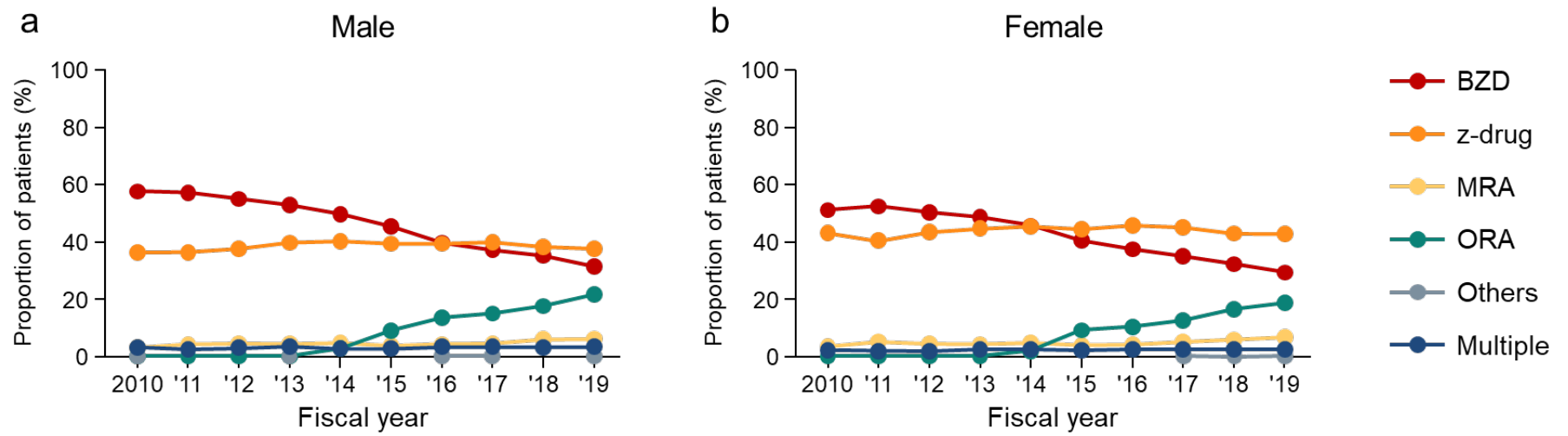| Analysis period		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
N		795	1500	1980	3524	6282	6970	12,015	15,705	19,231	23,213
Age	20–34 yr	89	207	243	399	674	786	1283	1580	1976	2511
		(11.2%)	(13.8%)	(12.3%)	(11.3%)	(10.7%)	(11.3%)	(10.7%)	(10.1%)	(10.3%)	(10.8%)
	35–49 yr	346	609	824	1384	2452	2655	4271	5726	6937	8271
		(43.5%)	(40.6%)	(41.6%)	(39.3%)	(39.0%)	(38.1%)	(35.5%)	(36.5%)	(36.1%)	(35.6%)
	50–64 yr	278	542	717	1246	2369	2737	5206	6772	8453	10,341
		(35.0%)	(36.1%)	(36.2%)	(35.4%)	(37.7%)	(39.3%)	(43.3%)	(43.1%)	(44.0%)	(44.5%)
	65–74 yr	82	142	196	495	787	792	1255	1627	1865	2090
		(10.3%)	(9.5%)	(9.9%)	(14.0%)	(12.5%)	(11.4%)	(10.4%)	(10.4%)	(9.7%)	(9.0%)
Sex	Male	425	822	1093	1901	3332	3775	6584	8634	10,443	12,457
		(53.5%)	(54.8%)	(55.2%)	(53.9%)	(53.0%)	(54.2%)	(54.8%)	(55.0%)	(54.3%)	(53.7%)
	Female	370	678	887	1623	2950	3195	5431	7071	8788	10,756
		(46.5%)	(45.2%)	(44.8%)	(46.1%)	(47.0%)	(45.8%)	(45.2%)	(45.0%)	(45.7%)	(46.3%)

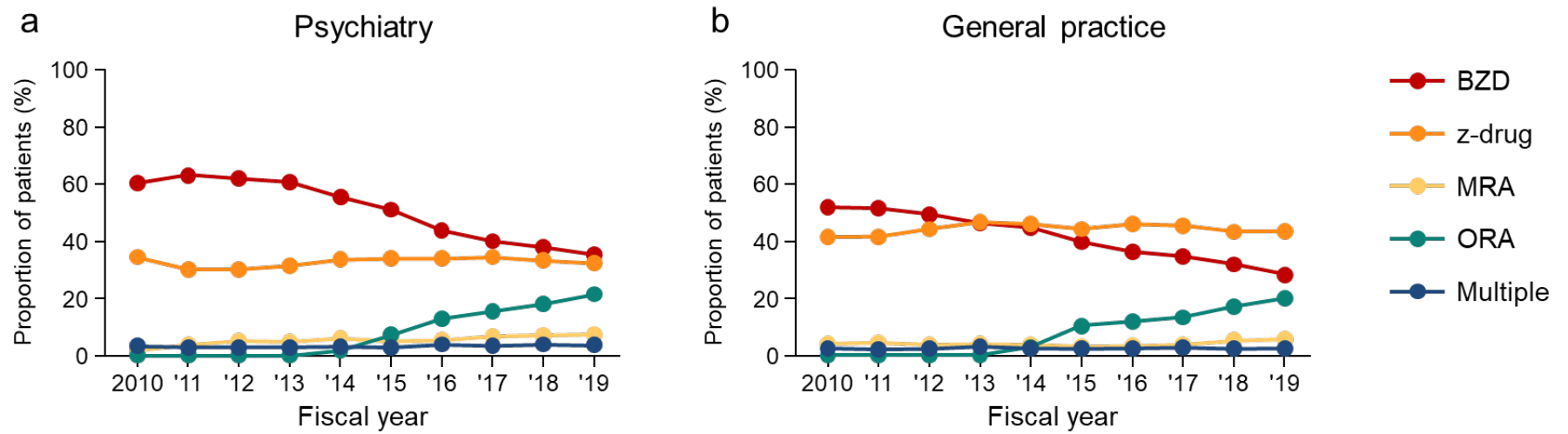**Figure S1** Trends in prescriptions of hypnotics among new users of hypnotics by age
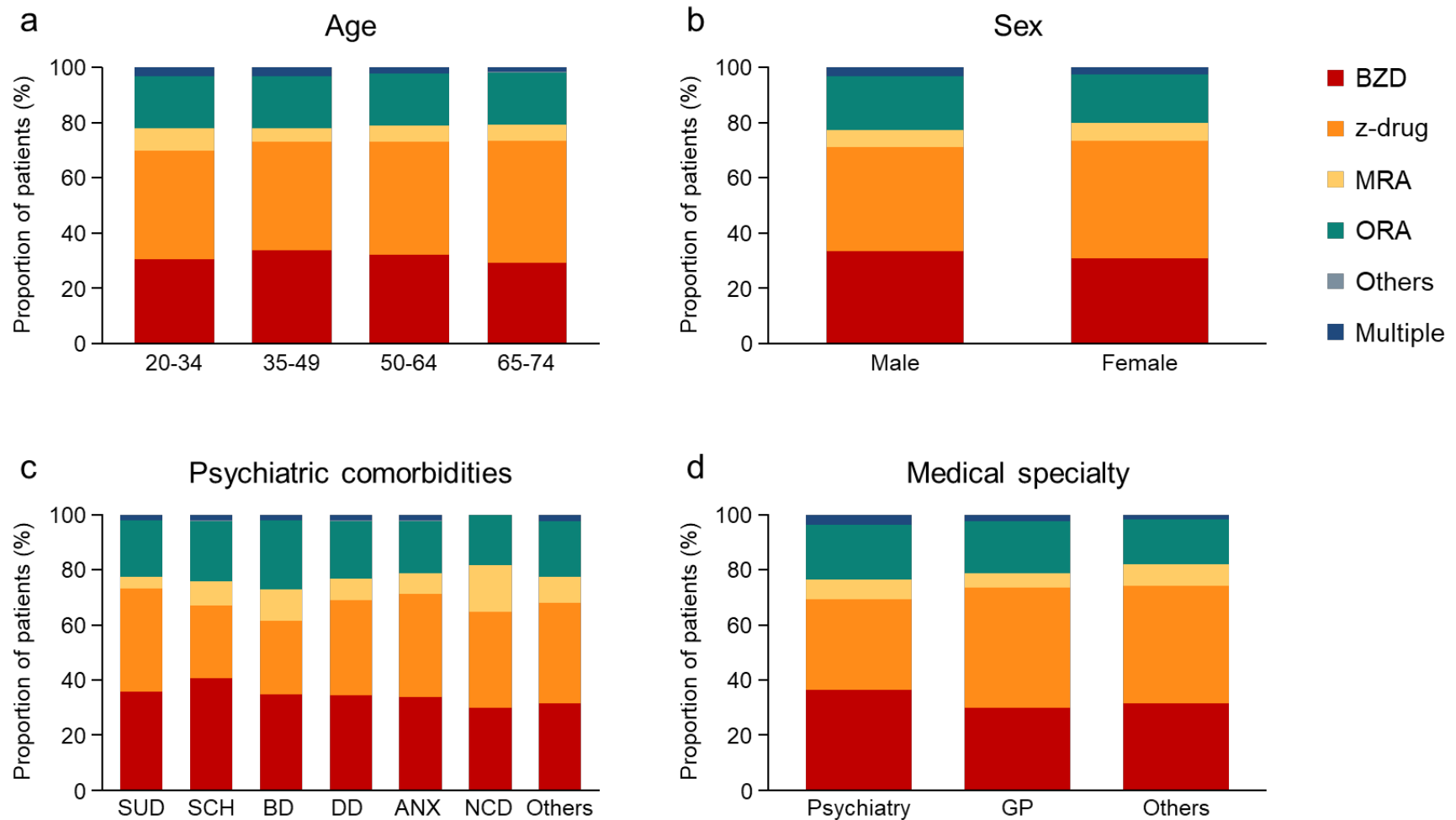

BZD benzodiazepine, *MRA* melatonin receptor agonist, *ORA* orexin receptor antagonist, *z-drug* non-benzodiazepine

Figure S2 Trends in prescriptions of hypnotics among new users of hypnotics by sex

BZD benzodiazepine, *MRA* melatonin receptor agonist, *ORA* orexin receptor antagonist, *z-drug* non-benzodiazepine

Figure S3 Trends in prescriptions of hypnotics among new users of hypnotics by medical specialty

BZD benzodiazepine, *MRA* melatonin receptor agonist, *ORA* orexin receptor antagonist, *z-drug* non-benzodiazepine
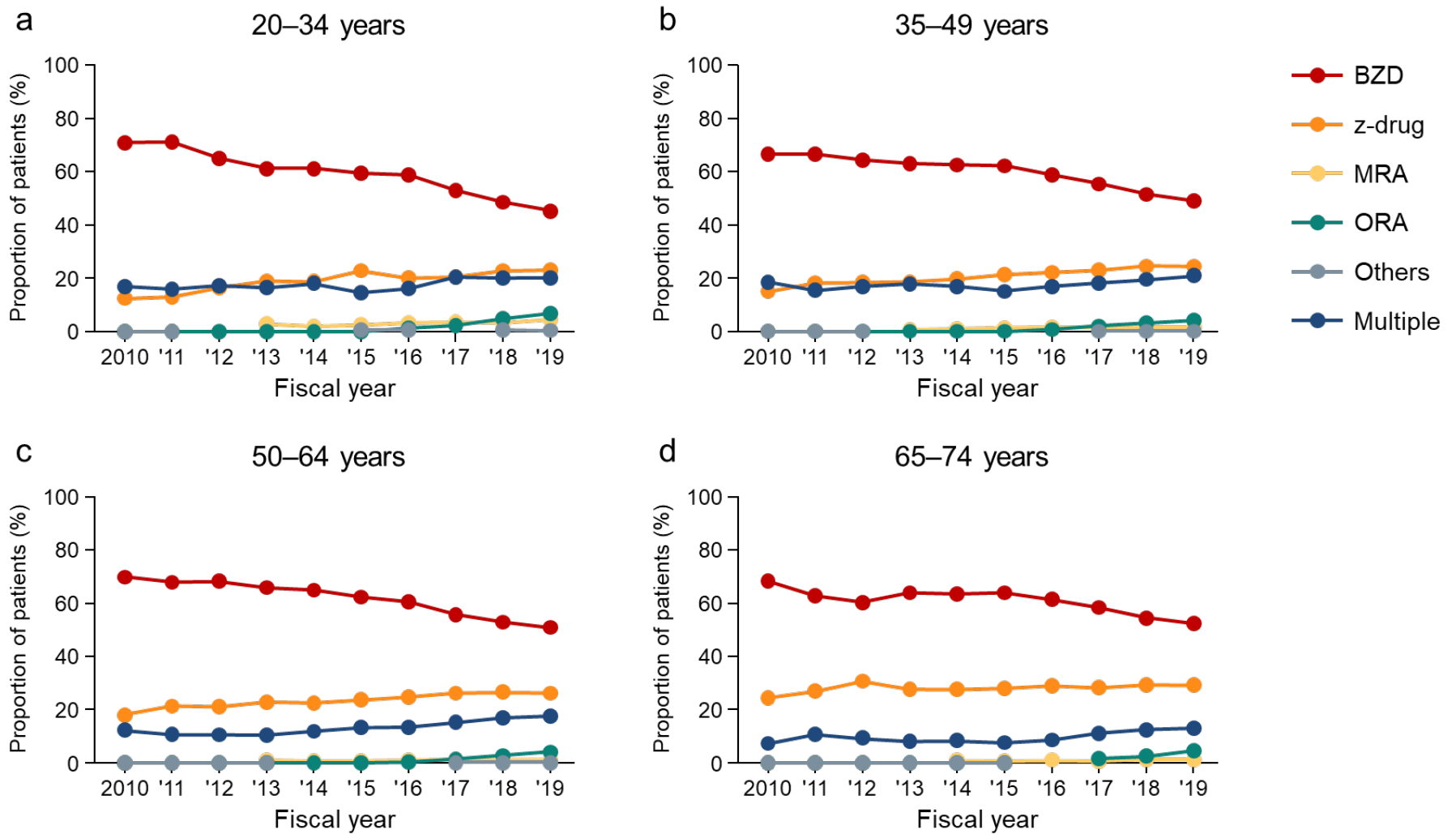
Figure S4 Distribution of MOAs among new users by age (a), sex (b), psychiatric comorbidities (c), and medical specialty (d)

ANX anxiety disorders, *BD* bipolar disorders, *BZD* benzodiazepine, *DD* depressive disorders, *GP* general practice, *MOA*, mechanisms of action, *MRA* melatonin receptor agonist, *NCD* neurocognitive disorders (Alzheimer's disease), *ORA* orexin receptor antagonist, *SCH* schizophrenia spectrum disorders, *SUD* substance use disorders, *z-drug* non-benzodiazepine
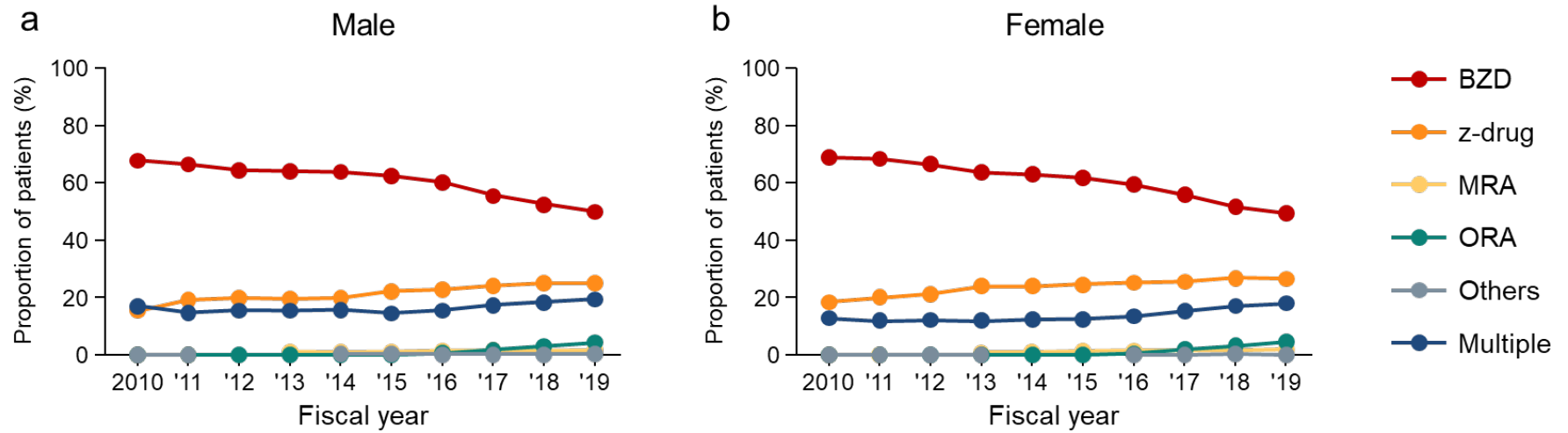
Figure S5 Trends in prescriptions of hypnotics among long-term users of hypnotics by age
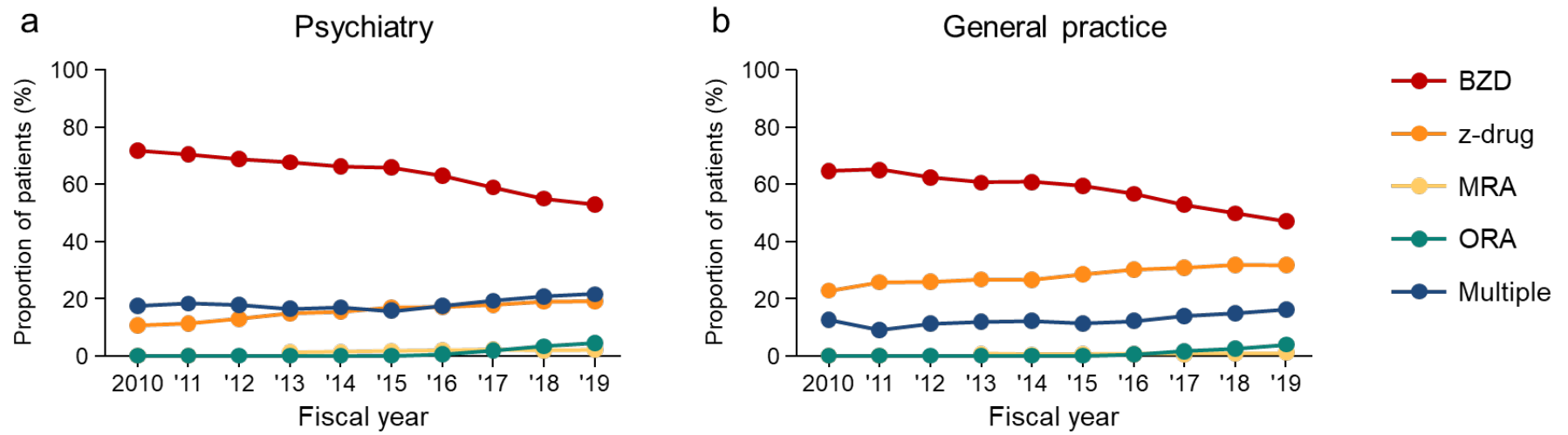

BZD benzodiazepine, *MRA* melatonin receptor agonist, *ORA* orexin receptor antagonist, *z-drug* non-benzodiazepine

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Figure S6 Trends in prescriptions of hypnotics among long-term users of hypnotics by sex
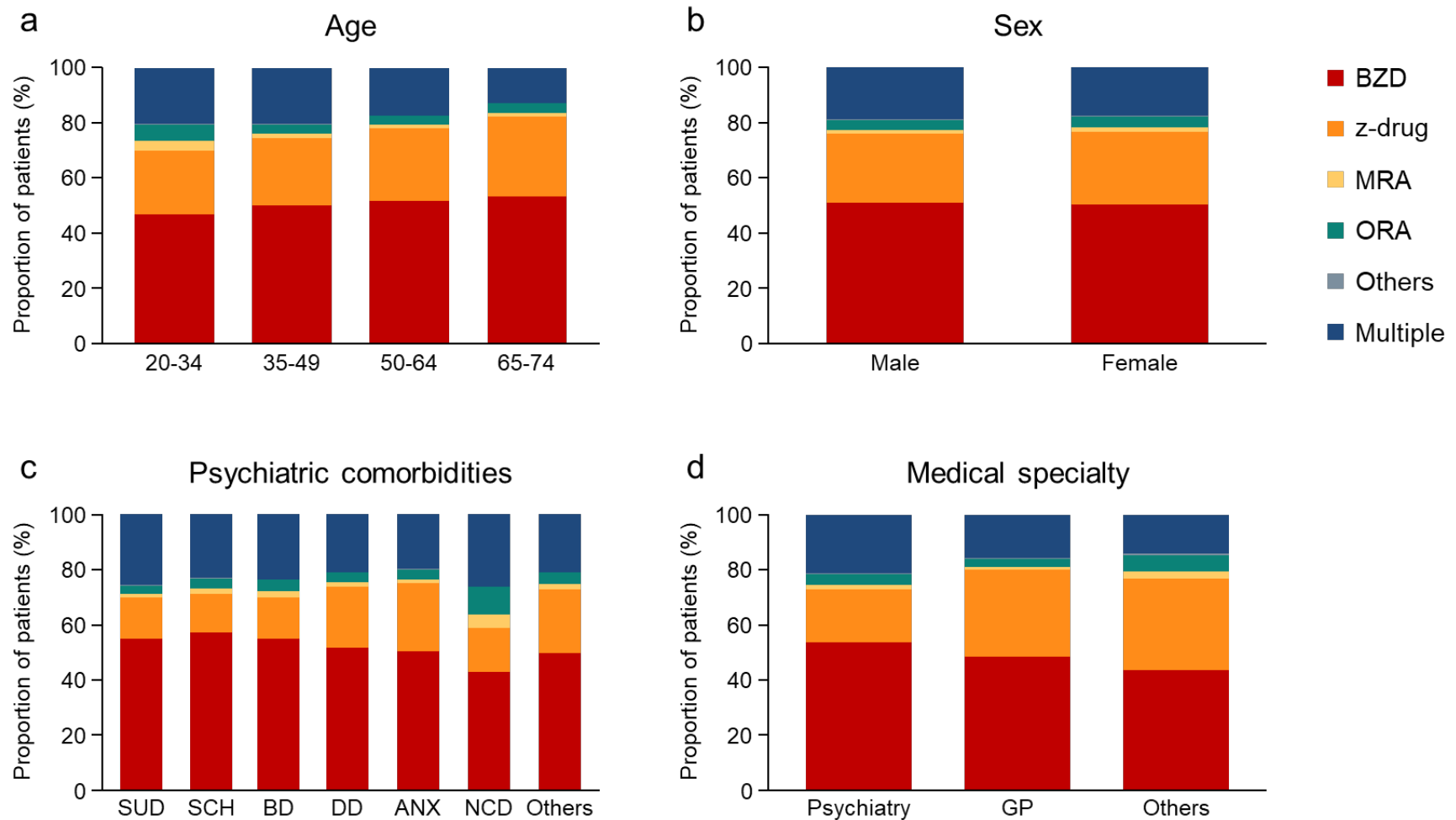

BZD benzodiazepine, *MRA* melatonin receptor agonist, *ORA* orexin receptor antagonist, *z-drug* non-benzodiazepine

Figure S7 Trends in prescriptions of hypnotics among long-term users of hypnotics by medical specialty

BZD benzodiazepine, *MRA* melatonin receptor agonist, *ORA* orexin receptor antagonist, *z-drug* non-benzodiazepine

Figure S8 Distribution of MOAs among long-term users by age (a), sex (b), psychiatric comorbidities (c), and medical specialty (d)

ANX anxiety disorders, *BD* bipolar disorders, *BZD* benzodiazepine, *DD* depressive disorders, *GP* general practice, *MOA*, mechanisms of action, *MRA* melatonin receptor agonist, *NCD* neurocognitive disorders (Alzheimer's disease), *ORA* orexin receptor antagonist, *SCH* schizophrenia spectrum disorders, *SUD* substance use disorders, *z-drug* non-benzodiazepine