Supplementary materials

Trends in Prevalence, Mortality, and Risk Factors of Dementia Among the Oldest-Old Adults in the United States: the Role of the Obesity Epidemic

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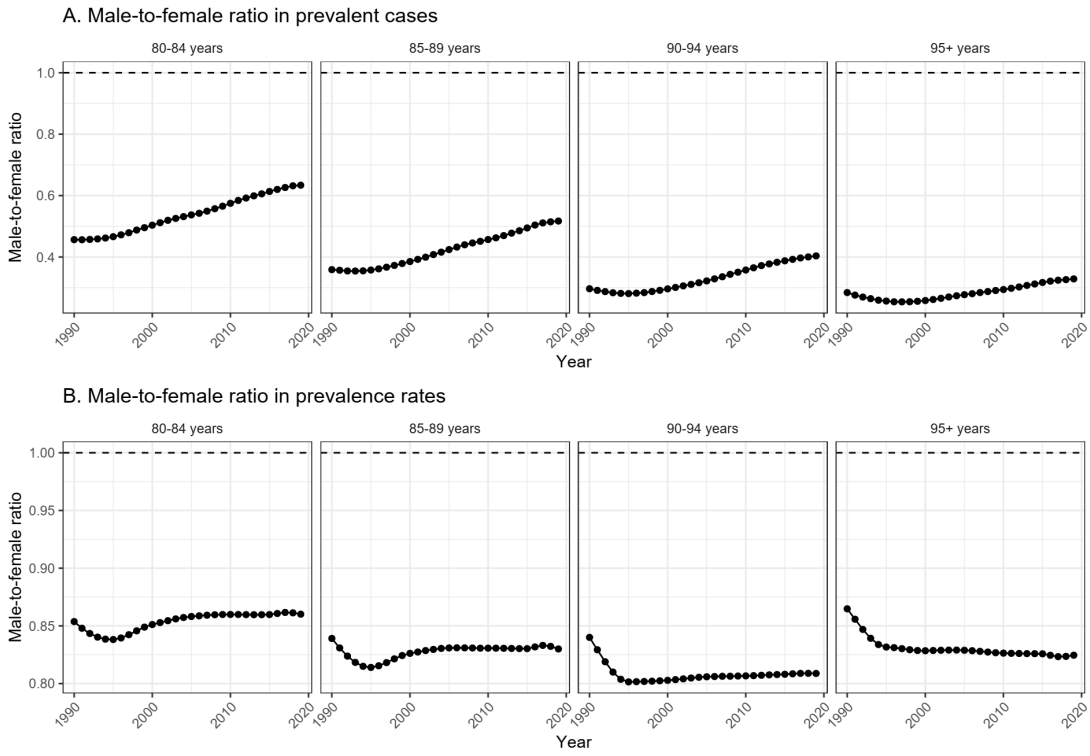
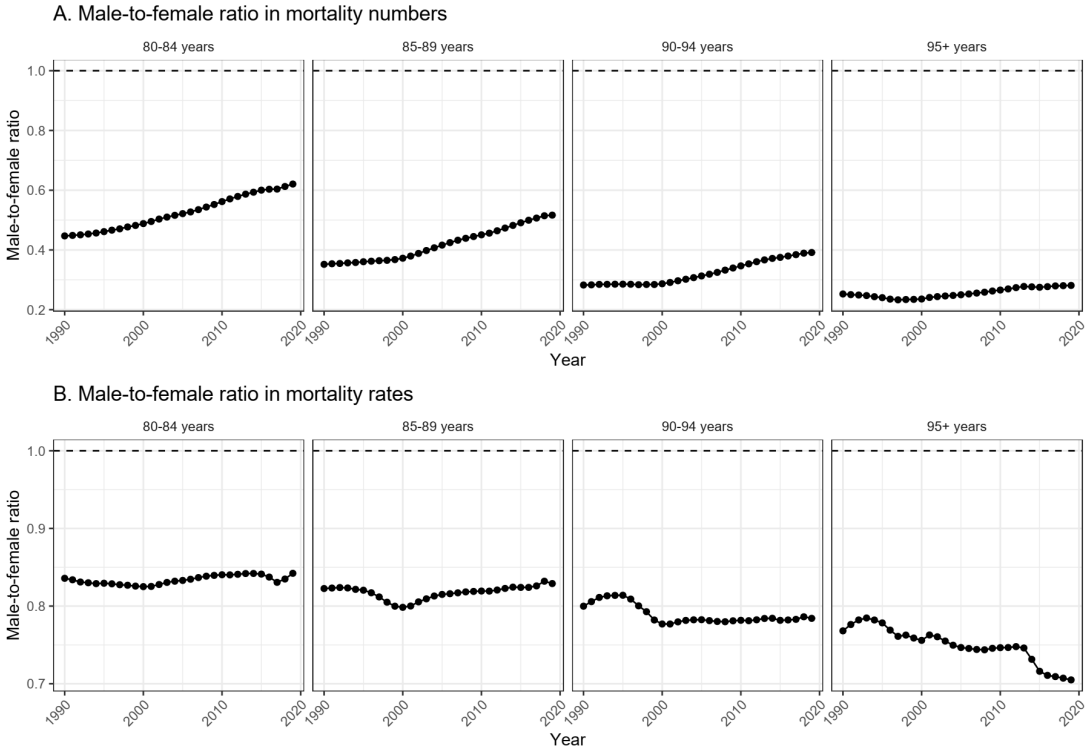
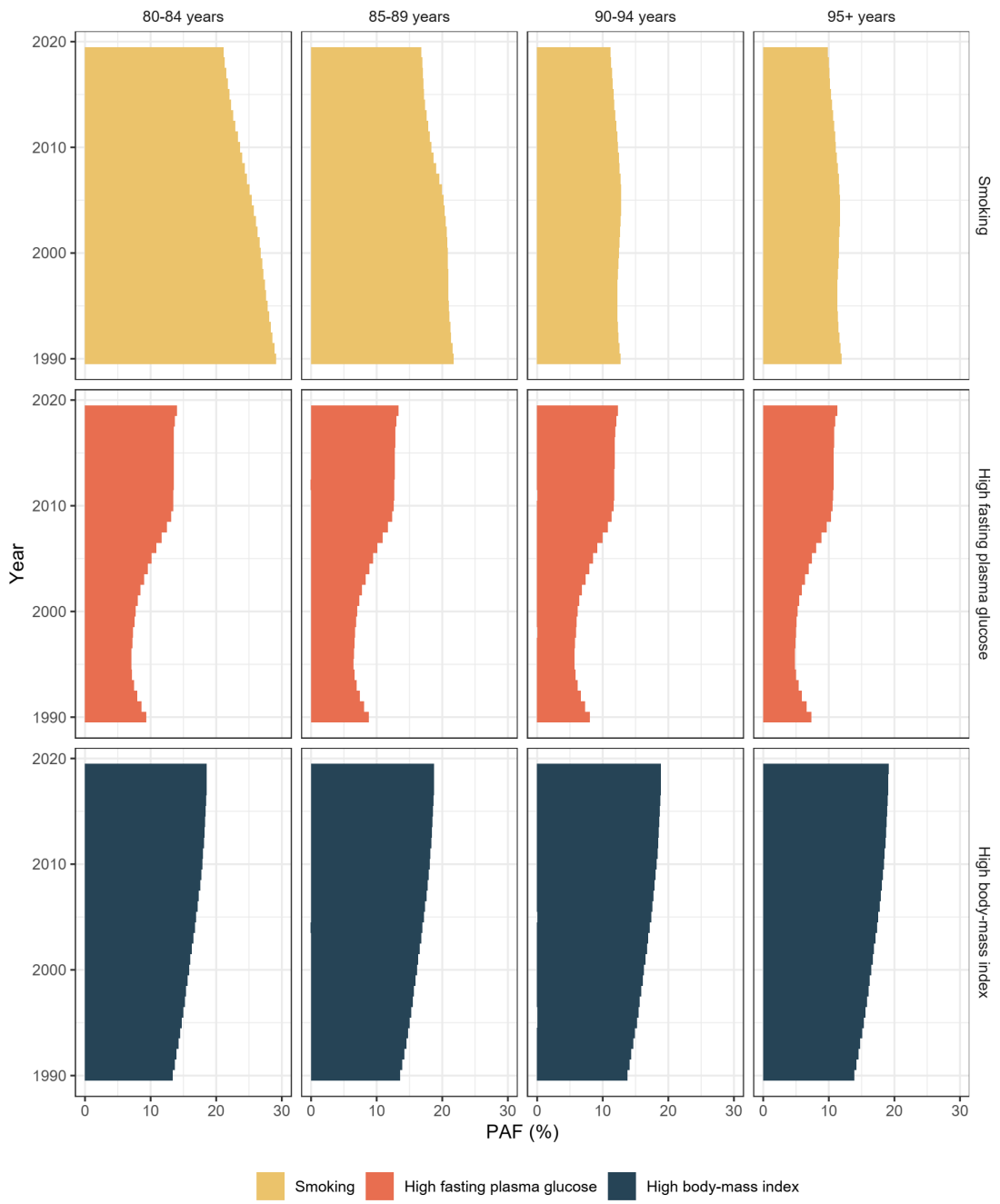


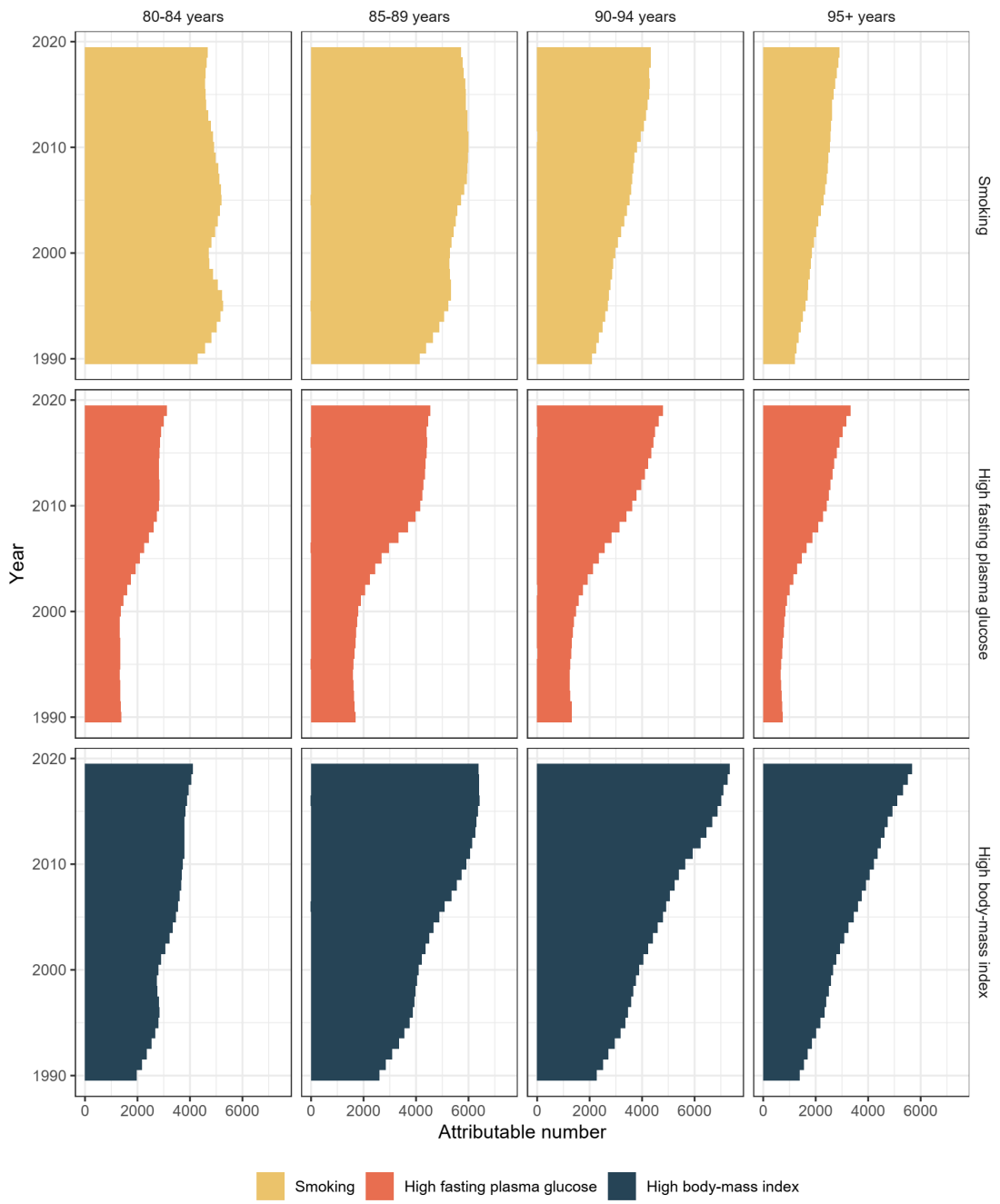
eFigure 1. Trends of male-to-female ratios in dementia prevalent cases and rates among US oldest-old adults in the four age groups from 1990 to 2019. A. Trends of male-to-female ratios in prevalent cases. B. Trends of male-to-female ratios in prevalence rates.



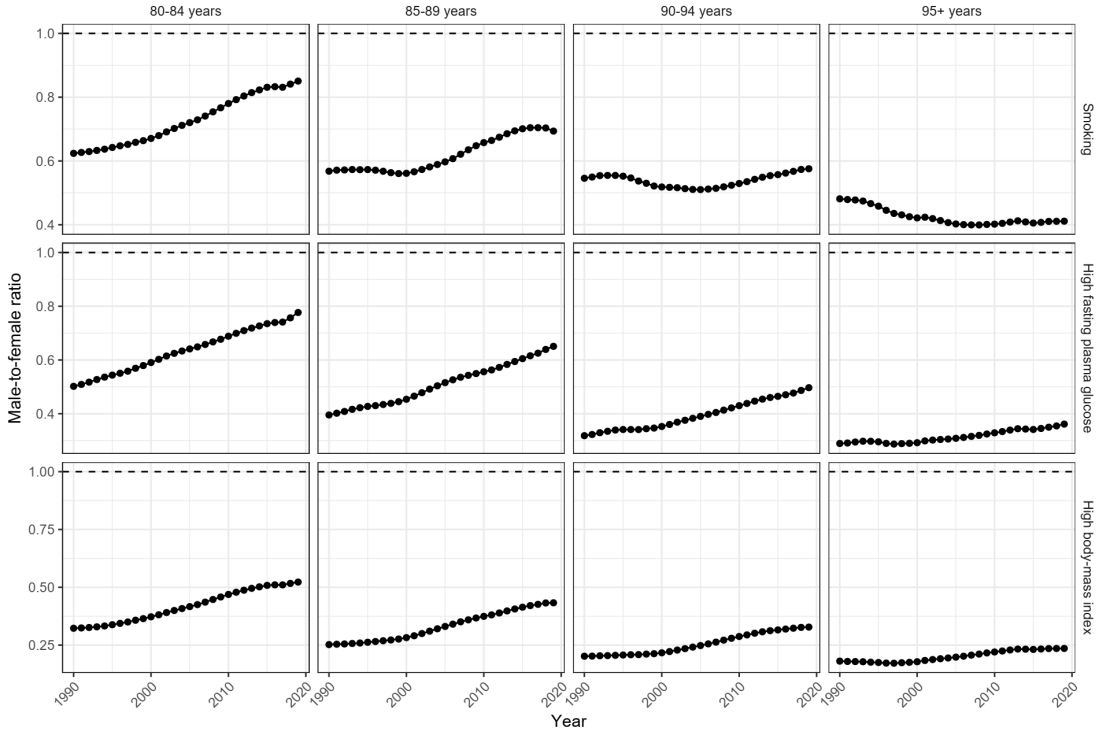
eFigure 2. Trends of male-to-female ratios in dementia mortality numbers and rates among US oldest-old adults in the four age groups from 1990 to 2019. A. Trends of male-to-female ratios in mortality numbers. B. Trends of male-to-female ratios in mortality rates.



eFigure 3. PAFs of dementia mortality due to risk factors among US oldest-old adults in the four age groups from 1990 to 2019. The enrolled risk factors in the present study: smoking, high fasting plasma glucose, and high body mass index (BMI). The PAF refers to the proportion of dementia that would be reduced if the risk factor's historical exposure level had been reduced to the counterfactual level of the theoretical minimum risk exposure level. PAF = population-attributable fractions.



eFigure 4. Attributable numbers of dementia mortality due to risk factors among US oldest-old adults in the four age groups from 1990 to 2019. The enrolled risk factors in the present study: smoking, high fasting plasma glucose, and high body-mass index (BMI). The attributable number refers to the absolute number of dementia cases attributable to the risk factor.



eFigure 5. Trends of male-to-female ratios in attributable number of dementia mortality due to risk factors among US oldest-old adults in the four age groups from 1990 to 2019. The enrolled risk factors in the present study: smoking, high fasting plasma glucose, and high body mass index (BMI). The attributable number refers to the absolute number of dementia cases attributable to the risk factor.

eTable 1. Decomposition analysis on changes in dementia prevalence among US oldest-old adults from 1990 to 2019

	Overall changes	Absolute changes due to individual factors (contribution proportions)		
		Aging	Population growth	Epidemiological change
Male	539476	53417 (9.9%)	506450 (93.88%)	-20391 (-3.78%)
Female	829859	151232 (18.22%)	708896 (85.42%)	-30269 (-3.65%)

The decomposition analysis used the Das Gupta's decomposition method to understand the underlying factors (i.e., aging of population, population growth, and epidemiological change) that contribute to the alterations of prevalence and their contribution proportion. The contribution of each factor to the total changes in prevalence was defined by the effect of one factor changing while the other factors were held constant. The proportions of each factor contributed to the total changes were calculated using the following formula: the absolute value of proportion = absolute value of change driven by the factor / absolute value of the overall change. The proportion was positive when the change driven by the factor was positive; otherwise, the proportion was negative.

eTable 2. Decomposition analysis on changes in dementia mortality among US oldest-old adults from 1990 to 2019

	Overall changes	Absolute changes due to individual factors (contribution proportions)		
		Aging	Population growth	Epidemiological change
Male	22289	3658 (16.41%)	18761 (84.17%)	-130 (-0.58%)
Female	41894	11563 (27.6%)	29404 (70.19%)	927 (2.21%)

The decomposition analysis used the Das Gupta's decomposition method to understand the underlying factors (i.e., aging of population, population growth, and epidemiological change) that contribute to the alterations of mortality and their contribution proportion. The contribution of each factor to the total changes in mortality was defined by the effect of one factor changing while the other factors were held constant. The proportions of each factor contributed to the total changes were calculated using the following formula: the absolute value of proportion = absolute value of change driven by the factor / absolute value of the overall change. The proportion was positive when the change driven by the factor was positive; otherwise, the proportion was negative.

eTable 3. Predicted dementia prevalent cases among US oldest-old adults in the four age groups from 2020 to 2030

Age groups	Sex	Year	Predicted values (95% CI)
80-84 years	Both	2020	918135 (880450-955820)
80-84 years	Both	2021	949557 (895782-1003333)
80-84 years	Both	2022	986693 (910418-1062968)
80-84 years	Both	2023	1032503 (927345-1137662)
80-84 years	Both	2024	1087329 (946453-1228206)
80-84 years	Both	2025	1147706 (964038-1331374)
80-84 years	Both	2026	1210535 (976907-1444163)
80-84 years	Both	2027	1273024 (982408-1563639)
80-84 years	Both	2028	1337905 (982298-1693512)
80-84 years	Both	2029	1407513 (977591-1837435)
80-84 years	Both	2030	1478688 (965262-1992114)
80-84 years	Female	2020	559877 (537643-582111)
80-84 years	Female	2021	577380 (545925-608836)
80-84 years	Female	2022	598331 (554029-642633)
80-84 years	Female	2023	624330 (563608-685052)
80-84 years	Female	2024	655495 (574567-736423)
80-84 years	Female	2025	689906 (584868-794945)
80-84 years	Female	2026	725830 (592727-858933)
80-84 years	Female	2027	761712 (596658-926766)
80-84 years	Female	2028	799255 (597791-1000720)
80-84 years	Female	2029	839748 (596691-1082805)
80-84 years	Female	2030	881148 (591451-1170845)
80-84 years	Male	2020	358257 (342807-373708)
80-84 years	Male	2021	372177 (349857-394496)
80-84 years	Male	2022	388362 (356389-420335)
80-84 years	Male	2023	408173 (363737-452610)
80-84 years	Male	2024	431834 (371886-491783)
80-84 years	Male	2025	457800 (379170-536430)
80-84 years	Male	2026	484705 (384179-585230)
80-84 years	Male	2027	511312 (385750-636873)
80-84 years	Male	2028	538650 (384507-692792)
80-84 years	Male	2029	567765 (380900-754630)
80-84 years	Male	2030	597540 (373811-821269)
85-89 years	Both	2020	895649 (863564-927735)
85-89 years	Both	2021	902936 (859681-946190)
85-89 years	Both	2022	917121 (857867-976375)
85-89 years	Both	2023	937271 (857673-1016869)
85-89 years	Both	2024	962616 (858222-1067010)

85-89 years	Both	2025	993827 (859577-1128077)
85-89 years	Both	2026	1031154 (861513-1200796)
85-89 years	Both	2027	1074659 (863472-1285845)
85-89 years	Both	2028	1128338 (867775-1388902)
85-89 years	Both	2029	1192972 (873676-1512268)
85-89 years	Both	2030	1264192 (876598-1651786)
85-89 years	Female	2020	584658 (564395-604922)
85-89 years	Female	2021	586450 (559509-613390)
85-89 years	Female	2022	593145 (556638-629652)
85-89 years	Female	2023	603911 (555258-652563)
85-89 years	Female	2024	617811 (554418-681205)
85-89 years	Female	2025	635313 (554235-716392)
85-89 years	Female	2026	656657 (554688-758626)
85-89 years	Female	2027	681988 (555561-808415)
85-89 years	Female	2028	713468 (558115-868821)
85-89 years	Female	2029	751375 (561835-940915)
85-89 years	Female	2030	793246 (564123-1022370)
85-89 years	Male	2020	310991 (299169-322813)
85-89 years	Male	2021	316486 (300173-332800)
85-89 years	Male	2022	323976 (301229-346722)
85-89 years	Male	2023	333360 (302414-364306)
85-89 years	Male	2024	344805 (303805-385805)
85-89 years	Male	2025	358514 (305343-411685)
85-89 years	Male	2026	374497 (306824-442170)
85-89 years	Male	2027	392671 (307912-477430)
85-89 years	Male	2028	414870 (309660-520081)
85-89 years	Male	2029	441597 (311841-571353)
85-89 years	Male	2030	470946 (312475-629417)
90-94 years	Both	2020	691585 (666985-716185)
90-94 years	Both	2021	690041 (657103-722978)
90-94 years	Both	2022	690631 (646041-735222)
90-94 years	Both	2023	691094 (632399-749789)
90-94 years	Both	2024	691698 (616834-766563)
90-94 years	Both	2025	695506 (602214-788797)
90-94 years	Both	2026	703759 (589629-817889)
90-94 years	Both	2027	716783 (579098-854468)
90-94 years	Both	2028	734619 (570190-899048)
90-94 years	Both	2029	757489 (562410-952568)
90-94 years	Both	2030	785566 (555072-1016059)
90-94 years	Female	2020	488188 (471318-505057)
90-94 years	Female	2021	483587 (461328-505847)
90-94 years	Female	2022	481694 (451866-511523)

90-94 years	Female	2023	480044 (441079-519009)
90-94 years	Female	2024	477916 (428605-527228)
90-94 years	Female	2025	477756 (416780-538731)
90-94 years	Female	2026	480764 (406696-554833)
90-94 years	Female	2027	487477 (398637-576316)
90-94 years	Female	2028	497557 (392019-603095)
90-94 years	Female	2029	510717 (386211-635223)
90-94 years	Female	2030	527182 (380901-673463)
90-94 years	Male	2020	203398 (195667-211128)
90-94 years	Male	2021	206453 (195775-217131)
90-94 years	Male	2022	208937 (194175-223699)
90-94 years	Male	2023	211050 (191319-230780)
90-94 years	Male	2024	213782 (188229-239335)
90-94 years	Male	2025	217750 (185434-250066)
90-94 years	Male	2026	222995 (182933-263057)
90-94 years	Male	2027	229306 (180461-278151)
90-94 years	Male	2028	237062 (178171-295953)
90-94 years	Male	2029	246772 (176199-317346)
90-94 years	Male	2030	258383 (174170-342597)
95+ years	Both	2020	379905 (366420-393391)
95+ years	Both	2021	402636 (383523-421749)
95+ years	Both	2022	406221 (380178-432263)
95+ years	Both	2023	407446 (373096-441796)
95+ years	Both	2024	416140 (371420-460860)
95+ years	Both	2025	424752 (368154-481349)
95+ years	Both	2026	429696 (360421-498970)
95+ years	Both	2027	429684 (347562-511805)
95+ years	Both	2028	429893 (334068-525718)
95+ years	Both	2029	434115 (322722-545508)
95+ years	Both	2030	440742 (311955-569529)
95+ years	Female	2020	285591 (275713-295468)
95+ years	Female	2021	301563 (287690-315436)
95+ years	Female	2022	303426 (284651-322200)
95+ years	Female	2023	302606 (278060-327152)
95+ years	Female	2024	306662 (275031-338293)
95+ years	Female	2025	310841 (271159-350524)
95+ years	Female	2026	312767 (264526-361009)
95+ years	Female	2027	311537 (254634-368439)
95+ years	Female	2028	310198 (244192-376204)
95+ years	Female	2029	311271 (235119-387423)
95+ years	Female	2030	314029 (226646-401412)
95+ years	Male	2020	94315 (90706-97923)

95+ years	Male	2021	101073 (95833-106313)
95+ years	Male	2022	102795 (95526-110063)
95+ years	Male	2023	104840 (95036-114643)
95+ years	Male	2024	109478 (96389-122567)
95+ years	Male	2025	113910 (96996-130825)
95+ years	Male	2026	116928 (95896-137961)
95+ years	Male	2027	118147 (92928-143366)
95+ years	Male	2028	119696 (89877-149515)
95+ years	Male	2029	122844 (87603-158085)
95+ years	Male	2030	126713 (85309-168117)

The Bayesian age-period cohort (BAPC) model was used to predict the values of number of prevalent cases from 2020 to 2030. CI = confidence interval.

eTable 4. Predicted dementia prevalence rates among US oldest-old adults in the four age groups from 2020 to 2030

Age groups	Sex	Year	Predicted values (95% CI, per 100,000)
80-84 years	Both	2020	14657 (14055-15258)
80-84 years	Both	2021	14639 (13810-15468)
80-84 years	Both	2022	14624 (13493-15754)
80-84 years	Both	2023	14611 (13123-16099)
80-84 years	Both	2024	14603 (12711-16495)
80-84 years	Both	2025	14599 (12263-16935)
80-84 years	Both	2026	14601 (11783-17419)
80-84 years	Both	2027	14609 (11274-17945)
80-84 years	Both	2028	14625 (10738-18513)
80-84 years	Both	2029	14649 (10175-19124)
80-84 years	Both	2030	14682 (9584-19780)
80-84 years	Female	2020	15584 (14974-16211)
80-84 years	Female	2021	15571 (14737-16435)
80-84 years	Female	2022	15559 (14433-16743)
80-84 years	Female	2023	15551 (14084-17120)
80-84 years	Female	2024	15547 (13702-17557)
80-84 years	Female	2025	15546 (13296-18052)
80-84 years	Female	2026	15551 (12873-18603)
80-84 years	Female	2027	15562 (12437-19211)
80-84 years	Female	2028	15578 (11993-19877)
80-84 years	Female	2029	15602 (11543-20604)
80-84 years	Female	2030	15634 (11091-21394)
80-84 years	Male	2020	13410 (12841-13996)
80-84 years	Male	2021	13395 (12607-14215)
80-84 years	Male	2022	13384 (12309-14519)
80-84 years	Male	2023	13375 (11967-14891)
80-84 years	Male	2024	13370 (11595-15325)
80-84 years	Male	2025	13371 (11202-15817)
80-84 years	Male	2026	13377 (10794-16369)
80-84 years	Male	2027	13389 (10376-16980)
80-84 years	Male	2028	13408 (9951-17653)
80-84 years	Male	2029	13436 (9524-18391)
80-84 years	Male	2030	13472 (9098-19198)
85-89 years	Both	2020	23477 (22636-24318)
85-89 years	Both	2021	23448 (22325-24571)
85-89 years	Both	2022	23421 (21908-24934)
85-89 years	Both	2023	23395 (21408-25382)
85-89 years	Both	2024	23371 (20837-25906)

85-89 years	Both	2025	23353 (20199-26508)
85-89 years	Both	2026	23343 (19503-27183)
85-89 years	Both	2027	23342 (18755-27929)
85-89 years	Both	2028	23350 (17958-28742)
85-89 years	Both	2029	23367 (17113-29622)
85-89 years	Both	2030	23397 (16224-30571)
85-89 years	Female	2020	25126 (24266-26006)
85-89 years	Female	2021	25112 (23973-26284)
85-89 years	Female	2022	25097 (23576-26679)
85-89 years	Female	2023	25082 (23101-27170)
85-89 years	Female	2024	25069 (22565-27752)
85-89 years	Female	2025	25062 (21977-28430)
85-89 years	Female	2026	25061 (21349-29201)
85-89 years	Female	2027	25068 (20690-30063)
85-89 years	Female	2028	25084 (20007-31017)
85-89 years	Female	2029	25110 (19309-32066)
85-89 years	Female	2030	25147 (18600-33213)
85-89 years	Male	2020	20898 (20116-21700)
85-89 years	Male	2021	20883 (19823-21978)
85-89 years	Male	2022	20869 (19429-22373)
85-89 years	Male	2023	20854 (18963-22862)
85-89 years	Male	2024	20842 (18443-23440)
85-89 years	Male	2025	20836 (17878-24111)
85-89 years	Male	2026	20838 (17280-24875)
85-89 years	Male	2027	20848 (16657-25730)
85-89 years	Male	2028	20868 (16019-26679)
85-89 years	Male	2029	20900 (15370-27726)
85-89 years	Male	2030	20944 (14716-28876)
90-94 years	Both	2020	35125 (33875-36374)
90-94 years	Both	2021	35078 (33403-36752)
90-94 years	Both	2022	35043 (32780-37305)
90-94 years	Both	2023	35012 (32038-37985)
90-94 years	Both	2024	34979 (31193-38765)
90-94 years	Both	2025	34952 (30264-39640)
90-94 years	Both	2026	34934 (29269-40600)
90-94 years	Both	2027	34929 (28219-41638)
90-94 years	Both	2028	34931 (27113-42750)
90-94 years	Both	2029	34941 (25943-43940)
90-94 years	Both	2030	34967 (24707-45226)
90-94 years	Female	2020	37590 (36308-38902)
90-94 years	Female	2021	37587 (35881-39345)
90-94 years	Female	2022	37583 (35292-39966)

90-94 years	Female	2023	37578 (34589-40730)
90-94 years	Female	2024	37576 (33804-41621)
90-94 years	Female	2025	37581 (32955-42633)
90-94 years	Female	2026	37592 (32061-43752)
90-94 years	Female	2027	37607 (31135-44972)
90-94 years	Female	2028	37628 (30182-46294)
90-94 years	Female	2029	37658 (29207-47730)
90-94 years	Female	2030	37703 (28210-49303)
90-94 years	Male	2020	30348 (29215-31511)
90-94 years	Male	2021	30334 (28790-31928)
90-94 years	Male	2022	30319 (28216-32516)
90-94 years	Male	2023	30305 (27540-33242)
90-94 years	Male	2024	30297 (26793-34092)
90-94 years	Male	2025	30301 (25996-35066)
90-94 years	Male	2026	30315 (25164-36152)
90-94 years	Male	2027	30336 (24306-37342)
90-94 years	Male	2028	30364 (23428-38639)
90-94 years	Male	2029	30402 (22535-40054)
90-94 years	Male	2030	30456 (21631-41608)
95+ years	Both	2020	56892 (54873-58912)
95+ years	Both	2021	56798 (54102-59495)
95+ years	Both	2022	56735 (53098-60372)
95+ years	Both	2023	56668 (51891-61446)
95+ years	Both	2024	56609 (50526-62693)
95+ years	Both	2025	56582 (49043-64122)
95+ years	Both	2026	56579 (47458-65701)
95+ years	Both	2027	56597 (45780-67414)
95+ years	Both	2028	56618 (43998-69239)
95+ years	Both	2029	56645 (42110-71179)
95+ years	Both	2030	56696 (40129-73262)
95+ years	Female	2020	59920 (57879-62007)
95+ years	Female	2021	59862 (57148-62656)
95+ years	Female	2022	59825 (56184-63614)
95+ years	Female	2023	59813 (55061-64826)
95+ years	Female	2024	59827 (53824-66263)
95+ years	Female	2025	59865 (52495-67913)
95+ years	Female	2026	59912 (51089-69741)
95+ years	Female	2027	59965 (49625-71734)
95+ years	Female	2028	60027 (48117-73896)
95+ years	Female	2029	60105 (46575-76239)
95+ years	Female	2030	60203 (45009-78780)
95+ years	Male	2020	49343 (47501-51230)

95+ years	Male	2021	49276 (46771-51861)
95+ years	Male	2022	49228 (45817-52792)
95+ years	Male	2023	49202 (44716-53966)
95+ years	Male	2024	49198 (43510-55359)
95+ years	Male	2025	49218 (42224-56959)
95+ years	Male	2026	49252 (40876-58745)
95+ years	Male	2027	49296 (39482-60704)
95+ years	Male	2028	49354 (38055-62843)
95+ years	Male	2029	49433 (36610-65178)
95+ years	Male	2030	49543 (35157-67732)

The Bayesian age-period cohort (BAPC) model was used to predict the values of prevalence rate from 2020 to 2030. CI = confidence interval.

eTable 5. Predicted dementia mortality numbers among US oldest-old adults in the four age groups from 2020 to 2030

Age groups	Sex	Year	Predicted values (95% CI)
80-84 years	Both	2020	22782 (21596-23969)
80-84 years	Both	2021	23560 (21852-25267)
80-84 years	Both	2022	24482 (22038-26927)
80-84 years	Both	2023	25624 (22228-29019)
80-84 years	Both	2024	26995 (22419-31571)
80-84 years	Both	2025	28512 (22515-34510)
80-84 years	Both	2026	30101 (22435-37767)
80-84 years	Both	2027	31695 (22113-41277)
80-84 years	Both	2028	33365 (21581-45148)
80-84 years	Both	2029	35173 (20849-49496)
80-84 years	Both	2030	37044 (19835-54252)
80-84 years	Female	2020	14039 (13353-14726)
80-84 years	Female	2021	14475 (13492-15459)
80-84 years	Female	2022	14999 (13597-16400)
80-84 years	Female	2023	15651 (13713-17589)
80-84 years	Female	2024	16435 (13835-19036)
80-84 years	Female	2025	17305 (13912-20698)
80-84 years	Female	2026	18217 (13897-22537)
80-84 years	Female	2027	19135 (13754-24516)
80-84 years	Female	2028	20101 (13504-26698)
80-84 years	Female	2029	21152 (13156-29147)
80-84 years	Female	2030	22236 (12659-31813)
80-84 years	Male	2020	8743 (8243-9243)
80-84 years	Male	2021	9085 (8361-9808)
80-84 years	Male	2022	9483 (8440-10526)
80-84 years	Male	2023	9973 (8515-11430)
80-84 years	Male	2024	10559 (8583-12536)
80-84 years	Male	2025	11207 (8603-13812)
80-84 years	Male	2026	11884 (8538-15230)
80-84 years	Male	2027	12560 (8359-16761)
80-84 years	Male	2028	13263 (8077-18450)
80-84 years	Male	2029	14021 (7693-20349)
80-84 years	Male	2030	14808 (7177-22439)
85-89 years	Both	2020	33842 (32331-35353)
85-89 years	Both	2021	34103 (31983-36223)
85-89 years	Both	2022	34636 (31648-37625)
85-89 years	Both	2023	35403 (31317-39490)
85-89 years	Both	2024	36372 (30957-41788)

85-89 years	Both	2025	37573 (30568-44578)
85-89 years	Both	2026	39017 (30133-47900)
85-89 years	Both	2027	40709 (29620-51799)
85-89 years	Both	2028	42807 (29089-56525)
85-89 years	Both	2029	45345 (28484-62206)
85-89 years	Both	2030	48165 (27623-68707)
85-89 years	Female	2020	22207 (21278-23135)
85-89 years	Female	2021	22270 (20979-23561)
85-89 years	Female	2022	22526 (20718-24334)
85-89 years	Female	2023	22938 (20479-25396)
85-89 years	Female	2024	23469 (20228-26710)
85-89 years	Female	2025	24142 (19970-28314)
85-89 years	Female	2026	24967 (19701-30233)
85-89 years	Female	2027	25951 (19406-32496)
85-89 years	Female	2028	27178 (19119-35238)
85-89 years	Female	2029	28663 (18808-38517)
85-89 years	Female	2030	30313 (18370-42257)
85-89 years	Male	2020	11636 (11053-12218)
85-89 years	Male	2021	11833 (11004-12661)
85-89 years	Male	2022	12110 (10930-13291)
85-89 years	Male	2023	12465 (10837-14093)
85-89 years	Male	2024	12903 (10729-15078)
85-89 years	Male	2025	13431 (10597-16264)
85-89 years	Male	2026	14050 (10432-17667)
85-89 years	Male	2027	14759 (10214-19303)
85-89 years	Male	2028	15629 (9970-21288)
85-89 years	Male	2029	16683 (9676-23689)
85-89 years	Male	2030	17851 (9253-26450)
90-94 years	Both	2020	37499 (35851-39146)
90-94 years	Both	2021	37287 (34991-39582)
90-94 years	Both	2022	37216 (34027-40406)
90-94 years	Both	2023	37173 (32909-41436)
90-94 years	Both	2024	37170 (31680-42661)
90-94 years	Both	2025	37367 (30478-44255)
90-94 years	Both	2026	37827 (29350-46305)
90-94 years	Both	2027	38566 (28279-48853)
90-94 years	Both	2028	39581 (27224-51938)
90-94 years	Both	2029	40884 (26138-55630)
90-94 years	Both	2030	42491 (24969-60013)
90-94 years	Female	2020	26718 (25614-27822)
90-94 years	Female	2021	26363 (24838-27887)
90-94 years	Female	2022	26175 (24069-28280)

90-94 years	Female	2023	26028 (23228-28827)
90-94 years	Female	2024	25884 (22302-29465)
90-94 years	Female	2025	25871 (21408-30334)
90-94 years	Female	2026	26049 (20592-31505)
90-94 years	Female	2027	26439 (19854-33024)
90-94 years	Female	2028	27018 (19150-34885)
90-94 years	Female	2029	27770 (18440-37100)
90-94 years	Female	2030	28714 (17700-39729)
90-94 years	Male	2020	10781 (10237-11325)
90-94 years	Male	2021	10924 (10153-11695)
90-94 years	Male	2022	11041 (9957-12125)
90-94 years	Male	2023	11145 (9681-12610)
90-94 years	Male	2024	11286 (9377-13195)
90-94 years	Male	2025	11496 (9070-13921)
90-94 years	Male	2026	11779 (8758-14799)
90-94 years	Male	2027	12127 (8425-15829)
90-94 years	Male	2028	12563 (8073-17053)
90-94 years	Male	2029	13114 (7698-18530)
90-94 years	Male	2030	13777 (7269-20284)
95+ years	Both	2020	24699 (23596-25802)
95+ years	Both	2021	26129 (24522-27736)
95+ years	Both	2022	26300 (24063-28536)
95+ years	Both	2023	26298 (23312-29284)
95+ years	Both	2024	26764 (22854-30675)
95+ years	Both	2025	27221 (22258-32184)
95+ years	Both	2026	27458 (21370-33545)
95+ years	Both	2027	27403 (20170-34635)
95+ years	Both	2028	27390 (18925-35854)
95+ years	Both	2029	27661 (17785-37537)
95+ years	Both	2030	28112 (16642-39582)
95+ years	Female	2020	19140 (18336-19943)
95+ years	Female	2021	20167 (18994-21340)
95+ years	Female	2022	20234 (18602-21866)
95+ years	Female	2023	20114 (17948-22280)
95+ years	Female	2024	20311 (17498-23124)
95+ years	Female	2025	20513 (16970-24055)
95+ years	Female	2026	20575 (16258-24891)
95+ years	Female	2027	20446 (15344-25549)
95+ years	Female	2028	20335 (14400-26271)
95+ years	Female	2029	20408 (13536-27281)
95+ years	Female	2030	20615 (12693-28536)
95+ years	Male	2020	5559 (5260-5858)

95+ years	Male	2021	5962 (5529-6396)
95+ years	Male	2022	6065 (5461-6670)
95+ years	Male	2023	6184 (5365-7004)
95+ years	Male	2024	6453 (5356-7550)
95+ years	Male	2025	6708 (5288-8129)
95+ years	Male	2026	6883 (5112-8654)
95+ years	Male	2027	6956 (4826-9086)
95+ years	Male	2028	7055 (4526-9584)
95+ years	Male	2029	7252 (4249-10256)
95+ years	Male	2030	7497 (3948-11046)

The Bayesian age-period cohort (BAPC) model was used to predict the values of number of mortality numbers from 2020 to 2030. CI = confidence interval.

eTable 6. Predicted dementia mortality rates among US oldest-old adults in the four age groups from 2020 to 2030

Age groups	Sex	Year	Predicted values (95% CI, per 100,000)
80-84 years	Both	2020	364 (345-383)
80-84 years	Both	2021	363 (337-390)
80-84 years	Both	2022	363 (327-399)
80-84 years	Both	2023	363 (315-411)
80-84 years	Both	2024	363 (301-424)
80-84 years	Both	2025	363 (286-439)
80-84 years	Both	2026	363 (271-456)
80-84 years	Both	2027	364 (254-474)
80-84 years	Both	2028	365 (236-494)
80-84 years	Both	2029	366 (217-515)
80-84 years	Both	2030	368 (197-539)
80-84 years	Female	2020	391 (373-409)
80-84 years	Female	2021	390 (365-417)
80-84 years	Female	2022	390 (355-427)
80-84 years	Female	2023	390 (344-440)
80-84 years	Female	2024	390 (332-455)
80-84 years	Female	2025	390 (319-472)
80-84 years	Female	2026	390 (306-491)
80-84 years	Female	2027	391 (292-512)
80-84 years	Female	2028	392 (278-536)
80-84 years	Female	2029	393 (265-562)
80-84 years	Female	2030	395 (251-591)
80-84 years	Male	2020	327 (310-345)
80-84 years	Male	2021	327 (302-353)
80-84 years	Male	2022	327 (293-364)
80-84 years	Male	2023	327 (282-377)
80-84 years	Male	2024	327 (270-392)
80-84 years	Male	2025	327 (258-410)
80-84 years	Male	2026	328 (245-430)
80-84 years	Male	2027	329 (232-453)
80-84 years	Male	2028	330 (220-478)
80-84 years	Male	2029	332 (207-506)
80-84 years	Male	2030	334 (194-537)
85-89 years	Both	2020	887 (847-927)
85-89 years	Both	2021	886 (831-941)
85-89 years	Both	2022	885 (808-961)
85-89 years	Both	2023	884 (782-986)
85-89 years	Both	2024	883 (752-1015)

85-89 years	Both	2025	883 (718-1048)
85-89 years	Both	2026	883 (682-1084)
85-89 years	Both	2027	884 (643-1125)
85-89 years	Both	2028	886 (602-1170)
85-89 years	Both	2029	888 (558-1218)
85-89 years	Both	2030	891 (511-1272)
85-89 years	Female	2020	954 (917-993)
85-89 years	Female	2021	954 (901-1009)
85-89 years	Female	2022	953 (879-1031)
85-89 years	Female	2023	953 (855-1059)
85-89 years	Female	2024	952 (827-1091)
85-89 years	Female	2025	952 (797-1128)
85-89 years	Female	2026	953 (766-1171)
85-89 years	Female	2027	954 (734-1219)
85-89 years	Female	2028	956 (702-1272)
85-89 years	Female	2029	958 (669-1330)
85-89 years	Female	2030	961 (636-1395)
85-89 years	Male	2020	782 (746-819)
85-89 years	Male	2021	781 (729-835)
85-89 years	Male	2022	780 (708-858)
85-89 years	Male	2023	780 (683-887)
85-89 years	Male	2024	780 (657-920)
85-89 years	Male	2025	781 (628-959)
85-89 years	Male	2026	782 (599-1004)
85-89 years	Male	2027	784 (569-1054)
85-89 years	Male	2028	786 (539-1110)
85-89 years	Male	2029	790 (509-1173)
85-89 years	Male	2030	794 (479-1243)
90-94 years	Both	2020	1905 (1821-1988)
90-94 years	Both	2021	1895 (1779-2012)
90-94 years	Both	2022	1888 (1727-2050)
90-94 years	Both	2023	1883 (1667-2099)
90-94 years	Both	2024	1880 (1602-2157)
90-94 years	Both	2025	1878 (1532-2224)
90-94 years	Both	2026	1878 (1457-2299)
90-94 years	Both	2027	1879 (1378-2381)
90-94 years	Both	2028	1882 (1294-2470)
90-94 years	Both	2029	1886 (1206-2566)
90-94 years	Both	2030	1891 (1111-2671)
90-94 years	Female	2020	2057 (1977-2140)
90-94 years	Female	2021	2049 (1935-2168)
90-94 years	Female	2022	2042 (1884-2210)

90-94 years	Female	2023	2037 (1827-2265)
90-94 years	Female	2024	2035 (1767-2332)
90-94 years	Female	2025	2035 (1704-2411)
90-94 years	Female	2026	2037 (1641-2500)
90-94 years	Female	2027	2040 (1575-2598)
90-94 years	Female	2028	2043 (1509-2706)
90-94 years	Female	2029	2048 (1442-2825)
90-94 years	Female	2030	2054 (1374-2955)
90-94 years	Male	2020	1609 (1534-1685)
90-94 years	Male	2021	1605 (1498-1717)
90-94 years	Male	2022	1602 (1453-1763)
90-94 years	Male	2023	1600 (1401-1821)
90-94 years	Male	2024	1600 (1346-1888)
90-94 years	Male	2025	1600 (1288-1966)
90-94 years	Male	2026	1601 (1228-2054)
90-94 years	Male	2027	1604 (1168-2153)
90-94 years	Male	2028	1609 (1108-2264)
90-94 years	Male	2029	1616 (1049-2386)
90-94 years	Male	2030	1624 (990-2523)
95+ years	Both	2020	3699 (3534-3864)
95+ years	Both	2021	3686 (3459-3913)
95+ years	Both	2022	3673 (3361-3985)
95+ years	Both	2023	3658 (3242-4073)
95+ years	Both	2024	3641 (3109-4173)
95+ years	Both	2025	3626 (2965-4287)
95+ years	Both	2026	3615 (2814-4417)
95+ years	Both	2027	3609 (2657-4562)
95+ years	Both	2028	3607 (2493-4722)
95+ years	Both	2029	3609 (2321-4898)
95+ years	Both	2030	3616 (2141-5092)
95+ years	Female	2020	4016 (3859-4177)
95+ years	Female	2021	4003 (3781-4235)
95+ years	Female	2022	3990 (3680-4318)
95+ years	Female	2023	3976 (3565-4420)
95+ years	Female	2024	3962 (3440-4541)
95+ years	Female	2025	3951 (3308-4680)
95+ years	Female	2026	3941 (3174-4838)
95+ years	Female	2027	3936 (3038-5015)
95+ years	Female	2028	3935 (2904-5215)
95+ years	Female	2029	3941 (2773-5439)
95+ years	Female	2030	3952 (2643-5690)
95+ years	Male	2020	2908 (2774-3048)

95+ years	Male	2021	2907 (2713-3111)
95+ years	Male	2022	2905 (2633-3197)
95+ years	Male	2023	2902 (2541-3302)
95+ years	Male	2024	2900 (2440-3424)
95+ years	Male	2025	2899 (2333-3563)
95+ years	Male	2026	2899 (2223-3720)
95+ years	Male	2027	2902 (2112-3897)
95+ years	Male	2028	2909 (2002-4094)
95+ years	Male	2029	2918 (1893-4314)
95+ years	Male	2030	2931 (1785-4557)

The Bayesian age-period cohort (BAPC) model was used to predict the values of mortality rate from 2020 to 2030. CI = confidence interval.

Supplementary method

Decomposition Analysis

The aging of population, population growth, and epidemiological change are commonly used population-level factors in decomposition analysis to gain their net contribution to the changes of prevalence and mortality at the population level. The aging of the population is typically approximated as changes in age structure. The population growth refers to the increase of the total population number. For the decomposition analysis for prevalence, the epidemiological change refers to change in prevalence rate; for the decomposition analysis for mortality, the epidemiological change refers to change in mortality rate.

In the decomposition analysis, here, taking prevalence as an example, the number of prevalence was obtained from the following equation:

$$\text{Prevalence}_{ay, py, ey} = \sum_{i=1}^{4}(a_{i, y} * p_{y} * e_{i, y}).$$

Where $\text{Prevalence}_{ay, py, ey}$ represented prevalence based on the factors of aging of population, population growth, and prevalence rate of dementia for specific year y. Specifically, $a_{i\ y}$ represents the proportion of population for the age category i of the 4 age categories (80-84 years, 85-89 years, 90-94 years, and 95+ years) in given year y; p_{y} represents the total population in given year y; and $e_{i, y}$ represents dementia prevalence rate of given age category i in year y. The net contribution of each factor to the total changes in prevalence was defined by the effect of one factor changing while the other factors were held constant. The proportions of each factor contributed to the

total changes were calculated using the following formula: the absolute value of proportion = absolute value of change driven by the factor / absolute value of the overall change. The proportion was positive when the change driven by the factor was positive; otherwise, the proportion was negative.

The net contribution of aging of population was calculated as:

$$[(\text{Prevalence}_{a2019, p1990, e1990} + \text{Prevalence}_{a2019, p2019, e2019})/3 + (\text{Prevalence}_{a2019, p1990, e2019} + \text{Prevalence}_{a2019, p2019, e1990})/6] - [(\text{Prevalence}_{a1990, p2019, e2019} + \text{Prevalence}_{a1990, p1990, e1990})/3 + (\text{Prevalence}_{a1990, p2019, e1990} + \text{Prevalence}_{a1990, p1990, e2019})/6]$$

The net contribution of population growth was calculated as:

$$[(\text{Prevalence}_{a1990, p2019, e1990} + \text{Prevalence}_{a2019, p2019, e2019})/3 + (\text{Prevalence}_{a1990, p2019, e2019} + \text{Prevalence}_{a2019, p2019, e1990})/6] - [(\text{Prevalence}_{a1990, p1990, e1990} + \text{Prevalence}_{a2019, p1990, e2019})/3 + (\text{Prevalence}_{a1990, p1990, e2019} + \text{Prevalence}_{a2019, p1990, e1990})/6]$$

The net contribution of prevalence rate was calculated as:

$$[(\text{Prevalence}_{a1990, p1990, e2019} + \text{Prevalence}_{a2019, p2019, e2019})/3 + (\text{Prevalence}_{a1990, p2019, e2019} + \text{Prevalence}_{a2019, p1990, e1990})/6] - [(\text{Prevalence}_{a1990, p1990, e1990} + \text{Prevalence}_{a2019, p2019, e1990})/3 + (\text{Prevalence}_{a1990, p2019, e1990} + \text{Prevalence}_{a2019, p1990, e1990})/6]$$

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