

SUPPLEMENT

Suicide rates among physicians compared with the general population in studies from 20 countries: gender stratified systematic review and meta-analysis

Table S1: Example for database search strategy (PsycInfo)

1	suicide/
2	suicide*.ti,ab,id,tm,tc.
3	((smr or smrs) and mortal*).ti,ab,id,tm,tc.
4	(standard* adj2 mortal* adj2 (rate* or ratio*)).ti,ab,id,tm,tc.
5	1 or 2 or 3 or 4
6	exp physicians/
7	(physician* or doctor* or medical practitioner* or general practitioner* or gp or gps or consultant*).ti,id,tc.
8	(allergist* or anesthetist* or anaesthetist* or anesthesiologist* or anaesthesiologist* or cardiologist* or dermatologist* or dentist* or endocrinologist* or gastroenterologist* or geriatrician* or gynecologist* or gynaecologist* or obstetrician* or urogynecologist* or urogynaecologist* or nephrologist* or hospitalist* or neurologist* or neurosurgeon* or oncologist* or ophthalmologist* or otolaryngologist* or otorhinolaryngologist* or pathologist* or pediatrician* or paediatrician* or neonatologist* or orthopedist* or physiatrist* or psychiatrist* or pulmonologist* or radiologist* or rheumatologist* or surgeon* or urologist* or medical profession* or health professional*).ti,id,tc.
9	6 or 7 or 8
10	5 and 9
11	"Death and Dying"/
12	mortality rate/
13	11 or 12
14	exp *physicians/
15	13 and 14
16	((physician* or doctor* or medical practitioner* or general practitioner* or gp or gps or consultant*) and mortal*).ti,id,tc.
17	((allergist* or anesthetist* or anaesthetist* or anesthesiologist* or anaesthesiologist* or cardiologist* or dermatologist* or dentist* or endocrinologist* or gastroenterologist* or geriatrician* or gynecologist* or gynaecologist* or obstetrician* or urogynecologist* or urogynaecologist* or nephrologist* or hospitalist* or neurologist* or neurosurgeon* or oncologist* or ophthalmologist* or otolaryngologist* or otorhinolaryngologist* or pathologist* or pediatrician* or paediatrician* or neonatologist* or orthopedist* or physiatrist* or psychiatrist* or pulmonologist* or radiologist* or rheumatologist* or surgeon* or urologist* or medical profession* or health professional*) and mortal*).ti,id,tc.
18	((suicid* adj2 (rate* or ratio* or tendenc* or statistic* or incidenc* or prevalen* or praevalen* or study or studies)) and (physician* or doctor* or medical practitioner* or general practitioner* or gp or gps or consultant*)).ti,id,tc.
19	((suicid* adj2 (rate* or ratio* or tendenc* or statistic* or incidenc* or prevalen* or praevalen* or study or studies)) and (allergist* or anesthetist* or anaesthetist* or anesthesiologist* or anaesthesiologist* or cardiologist* or dermatologist* or dentist* or endocrinologist* or gastroenterologist* or geriatrician* or gynecologist* or gynaecologist* or obstetrician* or urogynecologist* or urogynaecologist* or nephrologist* or hospitalist* or neurologist* or neurosurgeon* or oncologist* or ophthalmologist* or otolaryngologist* or otorhinolaryngologist* or pathologist* or pediatrician* or paediatrician* or neonatologist* or orthopedist* or physiatrist* or psychiatrist* or pulmonologist* or radiologist* or rheumatologist* or surgeon* or urologist* or medical profession* or health professional*)).ti,id,tc.
20	(cause* of death* and (physician* or doctor* or medical practitioner* or general practitioner* or gp or gps or consultant*)).ti,id,tc.
21	(cause* of death* and (allergist* or anesthetist* or anaesthetist* or anesthesiologist* or anaesthesiologist* or cardiologist* or dermatologist* or dentist* or endocrinologist* or gastroenterologist* or geriatrician* or gynecologist* or gynaecologist* or obstetrician* or urogynecologist* or urogynaecologist* or nephrologist* or hospitalist* or neurologist* or neurosurgeon* or oncologist* or ophthalmologist* or otolaryngologist* or otorhinolaryngologist* or pathologist* or pediatrician* or paediatrician* or neonatologist* or orthopedist* or physiatrist* or psychiatrist* or pulmonologist* or radiologist* or rheumatologist* or surgeon* or urologist* or medical profession* or health professional*)).ti,id,tc.

22	10 or 15 or 16 or 17 or 18 or 19 or 20 or 21
23	assisted suicide/
24	((suicide* or death* or dying) adj1 assist*).ti,id.
25	(aid adj2 dying).ti,id.
26	euthanasia/
27	euthanasia.ti,id.
28	23 or 24 or 25 or 26 or 27
29	(non assist* suicide* or nonassist* suicide* or nonassist* death* or non assist* death* or nonassist* dying or non assist* dying or total suicide* or total deaths).ti,ab,id.
30	28 not 29
31	22 not 30
32	limit 31 to up=19600101-20231011

Table S2: List of studies excluded at full-text screening stage

	Study	Reason for exclusion	Comments
1	Alexander et al. (2000) ¹	Physician subgroup	Anesthesiologists
2	Andersen et al. (2001) ²	Physician subgroup	Physicians employed in hospitals
3	Andersen et al. (2009) ³	Physician subgroup	Physicians employed in hospitals
4	Arnetz et al. (1986) ⁴	Physician subgroup	Dentists
5	Arnetz et al. (1987) ⁵	Physician subgroup	Dentists
6	Bamayr & Feuerlein (1984) ⁶	Same data	Same data as used in Bamayr & Feuerlein 1986
7	Blachly (1963) ⁷	Overall estimate only	
8	Blachly et al. (1968) ⁸ , additional information in Sakinofsky (1980) ⁹	Overlap	Overlap with Craig & Pitts 1968, smaller sample size
9	Bruce et al. (1968) ¹⁰	Physician subgroup	Anesthesiologists
10	Borgan & Kristofersen (1986) ¹¹	Same data	Same data (shorter time period) as Aasland et al. 2011
11	Burnett et al. (1997) ¹²	PMR	
12	Carpenter et al. (1997) ¹³	Overlap	Overlap with ONS England & Wales (1970-72), ONS Great Britain (1979-82), and Hawton et al. 2001, smaller sample size
13	De Hart (1974) ¹⁴ , additional information in Sakinofsky (1980) ⁹	Overlap	Overlap with Craig & Pitts 1968, Rich & Pitts 1979, smaller sample size
14	Doll & Peto (1977) ¹⁵	Physician subgroup	Psychiatrists
15	Duarte et al. (2022) ¹⁶	PMR	
16	Everson & Fraumeni (1975) ¹⁷	Overall estimate only	
17	France & Ugarte (1977) ¹⁸	Overall estimate only	
18	Frank et al. (2000) ¹⁹	PMR	
19	Hall et al. (1991) ²⁰	Physician subgroup	Pathologists
20	Harrington & Oakes (1984) ²¹	Physician subgroup	Pathologists
21	Harrington & Shannon (1975) ²²	Physician subgroup	Pathologists

22	Hem et al. (2005) ²³	Same data	Same data as used in Aasland et al. 2011
23	Hill & Harvey (1972) ²⁴	Physician subgroup	Dentists
24	Juel et al. (1997) ²⁵	Same data	Same data as used in Juel et al. 1999
25	Kavaliauskas et al. (2023) ²⁶	Overall estimate only	
26	Kelly & Bunting (1998) ²⁷	PMR	
27	Kelly et al. (1995) ²⁸	PMR	
28	Kobo et al. (2023) ²⁹	PMR	
29	Kolves & De Leo (2013) ³⁰	Overlap	Overlap with Petrie et al. 2023, smaller sample size
30	Lee (1979) ³¹	Same data	Same data as used in ONS England & Wales (1949-53) and ONS England & Wales (1970-72)
31	Lee et al. (2020) ³²	Physician subgroup	Radiologists
32	Linde et al. (1981) ³³	Physician subgroup	Anesthesiologists
33	Lollis et al. (2010) ³⁴	Physician subgroup	Neurosurgeons
34	Milner et al. (2016) ³⁵	Same data	Same data (shorter time period) as Petrie et al. 2023
35	Naumovska (2015) ³⁶	Insufficient information	No values for O/E, unable to contact author
36	Neil et al. (1987) ³⁷	Physician subgroup	Anesthesiologists
37	Nordentoft (1988) ³⁸ citing Andersen (1985) ³⁹	Overlap	Overlap with Juel et al. 1999, smaller sample size
38	Olfson et al. (2023) ⁴⁰	Overlap	Overlap with Davis et al. 2021, Gold et al. 2021, and Ye et al. 2021, smaller sample size
39	ONS England, 2001-2010 ⁴¹	Insufficient information	Found in Duarte et al. 2020, referenced website of the Office for National Statistics (ONS) UK did not reveal data source. ONS was contacted via email and replied, but was unable to provide necessary data for this calculation. First/corresponding and last authors of Duarte et al. (2020) were contacted via two email addresses each, but there was no reply.
40	ONS England & Wales, 1991-2000 ⁴²	PMR	
41	OPCS England & Wales, 1970-1972 ⁴³	Physician subgroup	Unmarried female physicians
42	Roberts et al. (2013) ⁴⁴	Same data	Same data as OPCS (1986) and Meltzer et al. 2008
43	Rose & Rosow (1973) ⁴⁵	Overlap	Overlap with Enstrom 1983, smaller sample size
44	Samkoff et al. (1995) ⁴⁶	Overlap	Overlap with Petersen & Burnett 2008, smaller sample size
45	Shang et al. (2011) ⁴⁷	Overall estimate only	
46	Shang et al. (2012) ⁴⁸	Physician subgroup	Dentists
47	Shepherd et al. (2020) ⁴⁹	PMR	
48	Shimpo et al. (1998) ⁵⁰	Physician subgroup	Dentists
49	Simpson et al. (1983) ⁵¹	Physician subgroup	Dentists
50	Sonneck & Wagner (1996) ⁵²	Insufficient information	No numbers of observed suicides, authors were contacted via email and replied, but

			were unable to provide more information (due to retirement)
51	Sood et al. (2022) ⁵³	Overall estimate only	
52	Steppacher & Mausner (1974) ⁵⁴	Overlap	Overlap with Craig & Pitts 1968, Rich & Pitts 1979, Pitts et al. 1979, smaller sample size
53	Torre et al. (2005) ⁵⁵	Overlap	Overlap with most US studies, smaller sample size
54	Ullmann et al. (1991) ⁵⁶	Overlap	Overlap with most US studies, smaller sample size
55	Windsor-Shelland & Gunnell (2019) ⁵⁷	Same data	Same data (shorter time period) as calculation with ONS England data for 2011-2020
56	Yaghmour et al. (2017) ⁵⁸	Physician subgroup	Residents
57	Yatsu (1979) ⁵⁹	Physician subgroup	Dentists
58	Zaid & Diab (2021) ⁶⁰	Overall estimate only	

Table S3a: Item overview for the JBI Checklist for Prevalence Studies⁶¹

Nr.	Original question	Decision on use for risk of bias assessment
JBI 1	1. Was the sample frame appropriate to address the target population?	Item was used and answers specified (see Table S3b).
JBI 2	2. Were study participants sampled in an appropriate way?	Not applicable: Sampling strategies are not a likely source of bias since the included registry-based or cohort studies are usually not based on samples.
JBI 3	3. Was the sample size adequate?	Item was used and answers specified (see Table S3b).
JBI 4	4. Were the study subjects and the setting described in detail?	Item was used and answers specified (see Table S3b).
JBI 5	5. Was the data analysis conducted with sufficient coverage of the identified sample?	Not applicable: Registry-based or cohort studies of mortality typically achieve high coverage (90-100%) for known cause of death in the observed physician population.
JBI 6	6. Were valid methods used for the identification of the condition?	Item was used and answers specified (see Table S3b).
JBI 7	7. Was the condition measured in a standard, reliable way for all participants?	Item was used and answers specified (see Table S3b).
JBI 8	8. Was there appropriate statistical analysis?	Item was used and answers specified (see Table S3b).
JBI 9	9. Was the response rate adequate, and if not, was the low response rate managed appropriately?	Not applicable: While important for prevalence studies using surveys, response rate is not a point of concern for bias in studies of mortality. As mentioned for JBI 5, these studies are typically characterized by high coverage for cause of death in the observed physician populations.

Table S3b: Adapted JBI Checklist for Prevalence Studies⁶¹

Point	Original question	Specification
JBI 1	1. Was the sample frame appropriate to address the target population?	Yes: Data source for target population was an official registry with mandatory registration.
		No: Data source was not an official registry or did not have mandatory registration.
		Unclear: Insufficient information on data source.
JBI 2	2. Were study participants sampled in an appropriate way?	Not applicable.
JBI 3	3. Was the sample size adequate?	Yes: Sample size was large enough to detect the previously identified SMR of 1.41 for male and 2.27 for female physicians with a significance level of 5% and power of 80%. A sample size calculation for these parameters gave an expected number of suicides higher than 55.87 for male and 7.65 for female physicians.
		No: Expected number of suicides lower than 55.87 for male and lower than 7.65 for female physicians.
JBI 4	4. Were the study subjects and the setting described in detail?	Yes: Sufficient information on composition of target population (physicians only, physicians including dentists, single medical specialties).
		No: Insufficient information on target population.
JBI 5	5. Was the data analysis conducted with sufficient coverage of the identified sample?	Not applicable.
JBI 6	6. Were valid methods used for the identification of the condition?	Yes: Appropriate method of suicide identification was used and ICD classification (or similar) was applied.
		No: No appropriate method for suicide identification used or no ICD classification (or similar) applied.
		Unclear: Insufficient information to determine method of identification or classification.
JBI 7	7. Was the condition measured in a standard, reliable way for all participants?	Yes: Same approach to identify suicide as cause of death for all study subjects.
		No: Different methods used to identify suicide as cause of death for subgroups of study subjects.
		Unclear: Insufficient information on identification of suicides.
JBI 8	8. Was there appropriate statistical analysis?	Yes: Appropriate age-standardisation for the reported outcome measure and measures of uncertainty were reported.
		No: No appropriate age-standardisation for the reported outcome measure or no measures of uncertainty were used.
		Unclear: Insufficient information on statistical analysis.
JBI 9	9. Was the response rate adequate, and if not, was the low response rate managed appropriately?	Not applicable.

Table S4a: Risk of bias assessment based on the adapted JBI Checklist (studies on male physicians)*

Study	JBI 1	JBI 2	JBI 3	JBI 4	JBI 5	JBI 6	JBI 7	JBI 8	JBI 9	Bias risk
Lindhardt et al. (1963) ⁶²	Y	NA	N	N	NA	Y	Y	N	NA	moderate/high
Craig & Pitts (1968) ⁶³	U	NA	Y	N	NA	U	N	N	NA	moderate/high
Dean (1969) ⁶⁴	U	NA	N	Y	NA	Y	Y	N	NA	moderate/high
Rich & Pitts (1979) ⁶⁵	U	NA	Y	N	NA	N	N	N	NA	moderate/high
Balogh (1981) ⁶⁶	Y	NA	N	N	NA	U	U	N	NA	moderate/high
Enstrom (1983) ⁶⁷	U	NA	N	Y	NA	Y	Y	N	NA	moderate/high
Revicki & May (1985) ⁶⁸	Y	NA	N	Y	NA	U	Y	N	NA	moderate/high
Bämayr & Feuerlein (1986) ⁶⁹	Y	NA	N	Y	NA	U	N	Y	NA	moderate/high
OPCS England & Wales A (1986) ⁷⁰	Y	NA	N	Y	NA	Y	Y	N	NA	moderate/high
OPCS England & Wales B (1986) ⁷⁰	Y	NA	N	Y	NA	Y	Y	N	NA	moderate/high
OPCS England & Wales C (1986) ⁷⁰	Y	NA	N	Y	NA	Y	Y	N	NA	moderate/high
OPCS Great Britain (1986) ⁷⁰	Y	NA	N	Y	NA	Y	Y	N	NA	moderate/high
Richings et al. (1986) ⁷¹	Y	NA	N	Y	NA	Y	Y	Y	NA	moderate/high
Arnetz et al. (1987) ⁷²	Y	NA	N	Y	NA	Y	Y	Y	NA	moderate/high
Rimpelä et al. (1987) ⁷³	Y	NA	N	Y	NA	Y	Y	U	NA	moderate/high
Kono et al. (1988) ⁷⁴	N	NA	N	Y	NA	Y	Y	Y	NA	moderate/high
Schlicht et al. (1990) ⁷⁵	U	NA	N	N	NA	Y	Y	Y	NA	moderate/high
Stefansson & Wicks (1991) ⁷⁶	Y	NA	N	Y	NA	Y	Y	N	NA	moderate/high
Shima et al. (1992) ⁷⁷	Y	NA	N	Y	NA	Y	Y	Y	NA	moderate/high
Herner (1993) ⁷⁸	N	NA	N	N	NA	N	N	N	NA	moderate/high
Lindeman et al. (1997) ⁷⁹	Y	NA	N	Y	NA	Y	Y	Y	NA	moderate/high
Rafnsson & Gunnarsdottir (1998) ⁸⁰	Y	NA	N	N	NA	Y	Y	Y	NA	moderate/high
Juel et al. (1999) ⁸¹	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Hawton et al. (2001) ⁸²	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Hostettler & Minder (2002) ⁸³	U	NA	N	Y	NA	U	U	Y	NA	moderate/high
Innos et al. (2002) ⁸⁴	N	NA	N	Y	NA	Y	Y	Y	NA	moderate/high
Shin et al. (2005) ⁸⁵	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Meltzer et al. (2008) ⁸⁶	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Petersen & Burnett (2008) ⁸⁷	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Skegg et al. (2010) ⁸⁸	Y	NA	N	Y	NA	Y	Y	Y	NA	moderate/high
Aasland et al. (2011) ^{23,89}	Y	NA	N	Y	NA	Y	Y	Y	NA	moderate/high
Palhares-Alves et al. (2015) ⁹⁰	Y	NA	Y	Y	NA	Y	Y	N	NA	moderate/high
Claessens (2016) ⁹¹	Y	NA	N	N	NA	Y	Y	Y	NA	moderate/high
Davis et al. A (2021) ⁹²	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Davis et al. B (2021) ⁹²	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Gold et al. (2021) ⁹³	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Ye et al. (2021) ⁹⁴	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Herrero-Huertas et al. (2022) ⁹⁵	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
FSO Switzerland, 2008-2020 ^{96,97}	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
ONS England, 2011-2020 ⁹⁸	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Petrie et al. (2023) ⁹⁹	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Zimmermann et al. (2023) ¹⁰⁰	Y	NA	Y	Y	NA	Y	Y	Y	NA	low

* JBI 1-9 refers to the respective questions of the JBI Critical Appraisal Checklist for Studies Reporting Prevalence Data (as specified in Table S3a/b), answer categories: Yes (Y), No (N), Unclear (U), Not applicable (NA). Bias risk was assessed as low when all applicable JBI questions were answered with Yes.

Table S4b: Risk of bias assessment based on the adapted JBI Checklist (studies on female physicians)*

Study	JBI 1	JBI 2	JBI 3	JBI 4	JBI 5	JBI 6	JBI 7	JBI 8	JBI 9	Bias risk
Craig & Pitts (1968) ⁶³	U	NA	N	N	NA	U	N	N	NA	moderate/high
Pitts et al. (1979) ¹⁰¹	U	NA	Y	N	NA	N	N	N	NA	moderate/high
Bämayer & Feuerlein (1986) ⁶⁹	Y	NA	Y	Y	NA	U	N	Y	NA	moderate/high
OPCS England & Wales (1986) ⁷⁰	Y	NA	N	Y	NA	Y	Y	N	NA	moderate/high
Arnetz et al. (1987) ⁷²	Y	NA	N	Y	NA	Y	Y	Y	NA	moderate/high
Stefansson & Wicks (1991) ⁷⁶	Y	NA	Y	Y	NA	Y	Y	N	NA	moderate/high
Herner (1993) ⁷⁸	N	NA	N	N	NA	N	N	N	NA	moderate/high
Lindeman et al. (1997) ⁷⁹	Y	NA	N	Y	NA	Y	Y	Y	NA	moderate/high
Juel et al. (1999) ⁸¹	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Hawton et al. (2001) ⁸²	Y	NA	N	Y	NA	Y	Y	Y	NA	moderate/high
Innos et al. (2002) ⁸⁴	N	NA	Y	Y	NA	Y	Y	Y	NA	moderate/high
Shin et al. (2005) ⁸⁵	Y	NA	N	Y	NA	Y	Y	Y	NA	moderate/high
Meltzer et al. (2008) ⁸⁶	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Petersen & Burnett (2008) ⁸⁷	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Skegg et al. (2010) ⁸⁸	Y	NA	N	Y	NA	Y	Y	Y	NA	moderate/high
Aasland et al. (2011) ^{23,89}	Y	NA	N	Y	NA	Y	Y	Y	NA	moderate/high
Palhares-Alves et al. (2015) ⁹⁰	Y	NA	Y	Y	NA	Y	Y	N	NA	moderate/high
Claessens (2016) ⁹¹	Y	NA	N	N	NA	Y	Y	Y	NA	moderate/high
Davis et al. A (2021) ⁹²	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Davis et al. B (2021) ⁹²	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Gold et al. (2021) ⁹³	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Ye et al. (2021) ⁹⁴	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Herrero-Huertas et al. (2022) ⁹⁵	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
FSO Switzerland, 2008-2020 ^{96,97}	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
ONS England, 2011-2020 ⁹⁸	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Petrie et al. (2023) ⁹⁹	Y	NA	Y	Y	NA	Y	Y	Y	NA	low
Zimmermann et al. (2023) ¹⁰⁰	Y	NA	Y	Y	NA	Y	Y	Y	NA	low

* JBI 1-9 refers to the respective questions of the JBI Critical Appraisal Checklist for Studies Reporting Prevalence Data (as specified in Table S3a/b), answer categories: Yes (Y), No (N), Unclear (U), Not applicable (NA). Bias risk was assessed as low when all applicable JBI questions were answered with Yes.

Table S5a: Additional study characteristics used for sensitivity analysis (male physicians)

Study	Study design*	Outcome measure†	Level of age standardisation§	Suicide classification¶	Upper age cut-off	Reference group
Lindhardt et al. (1963) ⁶²	registry	SMR‡	detailed	unclear	no	gen pop
Craig & Pitts (1968) ⁶³	registry	RR‡	other	unclear	no	other
Dean (1969) ⁶⁴	registry	SMR‡	detailed	narrow	no	other
Rich & Pitts (1979) ⁶⁵	registry	RR‡	other	unclear	no	other
Balogh (1981) ⁶⁶	registry	SRR‡	detailed	unclear	no	gen pop
Enstrom (1983) ⁶⁷	RB cohort	SMR	detailed	narrow	no	other
Revicki & May (1985) ⁶⁸	registry	SMR‡	detailed	unclear	no	other
Bämayer & Feuerlein (1986) ⁶⁹	registry	SMR‡	detailed	narrow	no	gen pop
OPCS England & Wales A (1986) ⁷⁰	registry	SMR	detailed	wide	yes	gen pop

OPCS England & Wales B (1986) ⁷⁰	registry	SMR	detailed	wide	yes	gen pop
OPCS England & Wales C (1986) ⁷⁰	registry	SMR	detailed	wide	yes	gen pop
OPCS Great Britain (1986) ⁷⁰	registry	SMR	detailed	wide	yes	gen pop
Richings et al. (1986) ⁷¹	registry	SMR	detailed	narrow	no	gen pop
Arnetz et al. (1987) ⁷²	RB cohort	SMR	detailed	narrow	yes	gen pop
Rimpelä et al. (1987) ⁷³	RB cohort	SRR‡	detailed	wide	yes	other
Kono et al. (1988) ⁷⁴	cohort	SMR	detailed	narrow	no	gen pop
Schlicht et al. (1990) ⁷⁵	cohort	SMR	detailed	unclear	no	gen pop
Stefansson & Wicks (1991) ⁷⁶	RB cohort	SRR‡	detailed	wide	yes	other
Shima et al. (1992) ⁷⁷	RB cohort	SMR	detailed	unclear	no	other
Herner (1993) ⁷⁸	registry	RR‡	other	wide	no	gen pop
Lindeman et al. (1997) ⁷⁹	registry	SMR	detailed	narrow	no	gen pop
Rafnsson & Gunnarsdottir (1998) ⁸⁰	RB cohort	SMR‡	detailed	narrow	no	gen pop
Juel et al. (1999) ⁸¹	registry	SMR	detailed	narrow	no	gen pop
Hawton et al. (2001) ⁸²	registry	SMR	detailed	wide	yes	gen pop
Hostettler & Minder (2002) ⁸³	registry	SMR	detailed	unclear	yes	gen pop
Innos et al. (2002) ⁸⁴	cohort	SMR	detailed	narrow	no	gen pop
Shin et al. (2005) ⁸⁵	registry	SMR	detailed	unclear	yes	other
Meltzer et al. (2008) ⁸⁶	registry	SMR	detailed	wide	yes	gen pop
Petersen & Burnett (2008) ⁸⁷	registry	SRR	detailed	unclear	yes	other
Skegg et al. (2010) ⁸⁸	registry	SMR	detailed	wide	yes	other
Aasland et al. (2011) ^{23,89}	registry	SRR	detailed	narrow	no	gen pop
Palhares-Alves et al. (2015) ⁹⁰	registry	RR‡	other	narrow	no	gen pop
Claessens (2016) ⁹¹	registry	RR‡	other	wide	no	gen pop
Davis et al. A (2021) ⁹²	registry	RR‡	other	narrow	no	gen pop
Davis et al. B (2021) ⁹²	registry	RR‡	other	narrow	no	gen pop
Gold et al. (2021) ⁹³	registry	SMR‡	detailed	narrow	no	other
Ye et al. (2021) ⁹⁴	registry	SRR‡	detailed	narrow	no	other
Herrero-Huertas et al. (2022) ⁹⁵	RB cohort	SRR‡	detailed	narrow	no	other
FSO Switzerland, 2008-2020 ^{96,97}	registry	SMR‡	detailed	narrow	no	gen pop
ONS England, 2011-2020 ⁹⁸	registry	SRR‡	detailed	wide	yes	gen pop
Petrie et al. (2023) ⁹⁹	registry	SRR‡	detailed	narrow	yes	other
Zimmermann et al. (2023) ¹⁰⁰	registry	SMR	detailed	narrow	yes	gen pop

* Categories: registry study, registry-based cohort study, cohort study.

† Categories: rate ratio (RR), standardised mortality ratio (SMR), standardised rate ratio (SRR).

‡ Effect estimate calculated by the reviewers.

§ Categories: detailed (several age groups used for standardisation), other (one age group or age-cut off used for standardisation).

¶ Categories: narrow (suicides without deaths of undetermined intent), wide (suicides and deaths of undetermined intent), unclear (not specified).

|| Categories: general population, other (white, economically active, working, or employed population).

Table S5b: Additional study characteristics used for sensitivity analysis (female physicians)

Study	Study design*	Outcome measure†	Level of age standardisation§	Suicide classification¶	Upper age cut-off	Reference group
Craig & Pitts (1968) ⁶³	registry	RR‡	other	unclear	no	other
Pitts et al. (1979) ¹⁰¹	registry	RR‡	other	unclear	no	other
Bämayr & Feuerlein (1986) ⁶⁹	registry	SMR‡	detailed	narrow	no	gen pop
OPCS England & Wales (1986) ⁷⁰	registry	SMR	detailed	wide	no	gen pop
Arnetz et al. (1987) ⁷²	RB cohort	SMR	detailed	narrow	yes	gen pop
Stefansson & Wicks (1991) ⁷⁶	RB cohort	SRR‡	detailed	wide	yes	other
Herner (1993) ⁷⁸	registry	RR‡	other	wide	no	gen pop
Lindeman et al. (1997) ⁷⁹	registry	SMR	detailed	narrow	no	gen pop
Juel et al. (1999) ⁸¹	registry	SMR	detailed	narrow	no	gen pop
Hawton et al. (2001) ⁸²	registry	SMR	detailed	wide	yes	gen pop
Innos et al. (2002) ⁸⁴	cohort	SMR	detailed	narrow	no	gen pop
Shin et al. (2005) ⁸⁵	registry	SMR	detailed	unclear	yes	other
Meltzer et al. (2008) ⁸⁶	registry	SMR	detailed	wide	yes	gen pop
Petersen & Burnett (2008) ⁸⁷	registry	SRR	detailed	unclear	yes	other
Skegg et al. (2010) ⁸⁸	registry	SMR	detailed	wide	yes	other
Aasland et al. (2011) ^{23,89}	registry	SRR	detailed	narrow	no	gen pop
Palhares-Alves et al. (2015) ⁹⁰	registry	RR‡	other	narrow	no	gen pop
Claessens (2016) ⁹¹	registry	RR‡	other	wide	no	gen pop
Davis et al. A (2021) ⁹²	registry	RR‡	other	narrow	no	gen pop
Davis et al. B (2021) ⁹²	registry	RR‡	other	narrow	no	gen pop
Gold et al. (2021) ⁹³	registry	SMR‡	detailed	narrow	no	other
Ye et al. (2021) ⁹⁴	registry	SRR‡	detailed	narrow	no	other
Herrero-Huertas et al. (2022) ⁹⁵	RB cohort	SRR‡	detailed	narrow	no	other
FSO Switzerland, 2008-2020 ^{96,97}	registry	SMR‡	detailed	narrow	no	gen pop
ONS England, 2011-2020 ⁹⁸	registry	SRR‡	detailed	wide	yes	gen pop
Petrie et al. (2023) ⁹⁹	registry	SRR‡	detailed	narrow	yes	other
Zimmermann et al. (2023) ¹⁰⁰	registry	SMR	detailed	narrow	yes	gen pop

* Categories: registry study, registry-based cohort study, cohort study.

† Categories: rate ratio (RR), standardised mortality ratio (SMR), standardised rate ratio (SRR).

‡ Effect estimate calculated by the reviewers.

§ Categories: detailed (several age groups used for standardisation), other (one age group or age-cut off used for standardisation).

¶ Categories: narrow (suicides without deaths of undetermined intent), wide (suicides and deaths of undetermined intent), unclear (not specified).

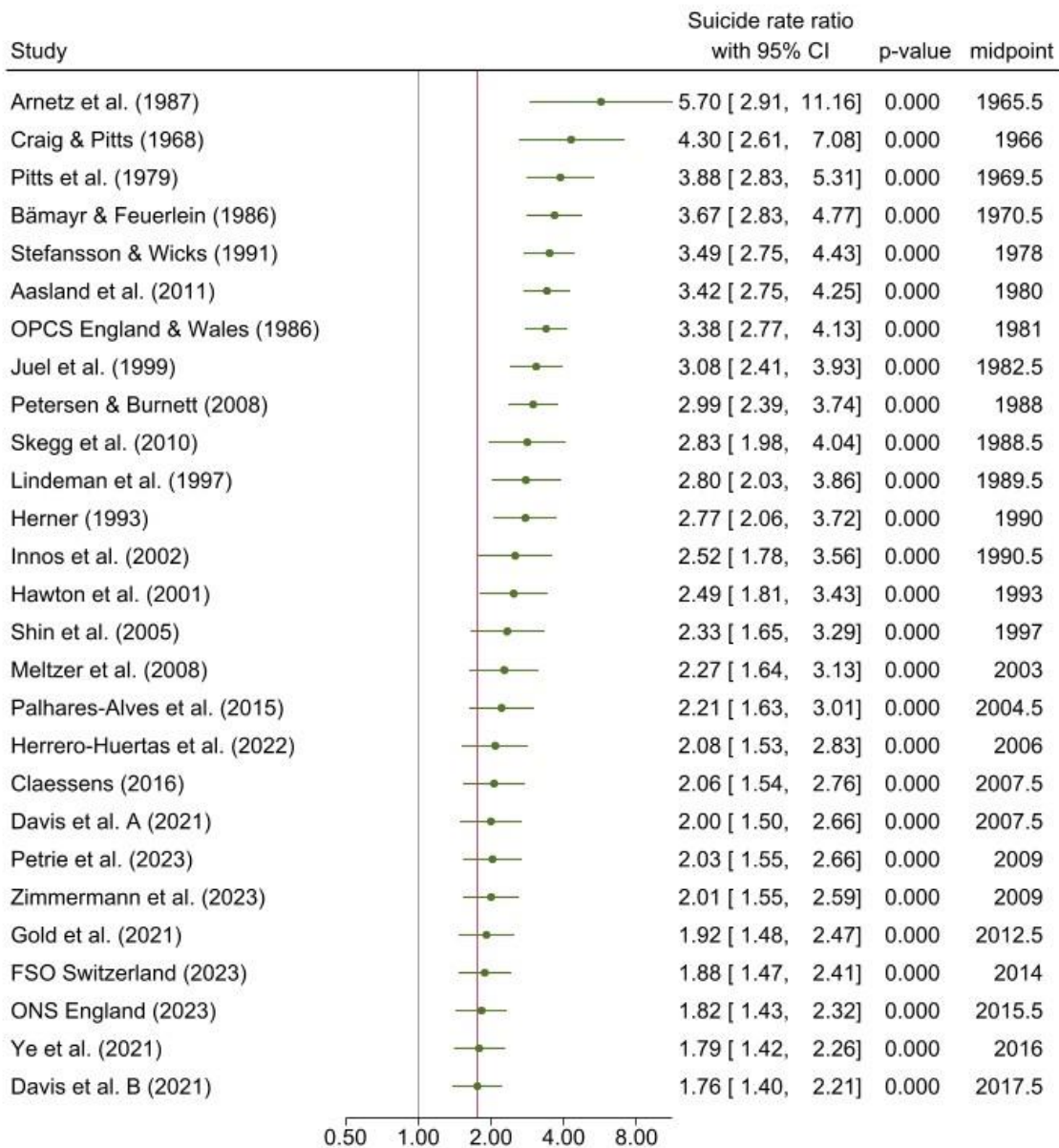
|| Categories: general population, other (white, economically active, working, or employed population).

Figure S1a: Cumulative meta-analysis based on midpoint of observation period (male physicians)



Random-effects Sidik-Jonkman model

Figure S1b: Cumulative meta-analysis based on midpoint of observation period (female physicians)



Random-effects Sidik-Jonkman model

Figure S2a: Funnel plot (male physicians)

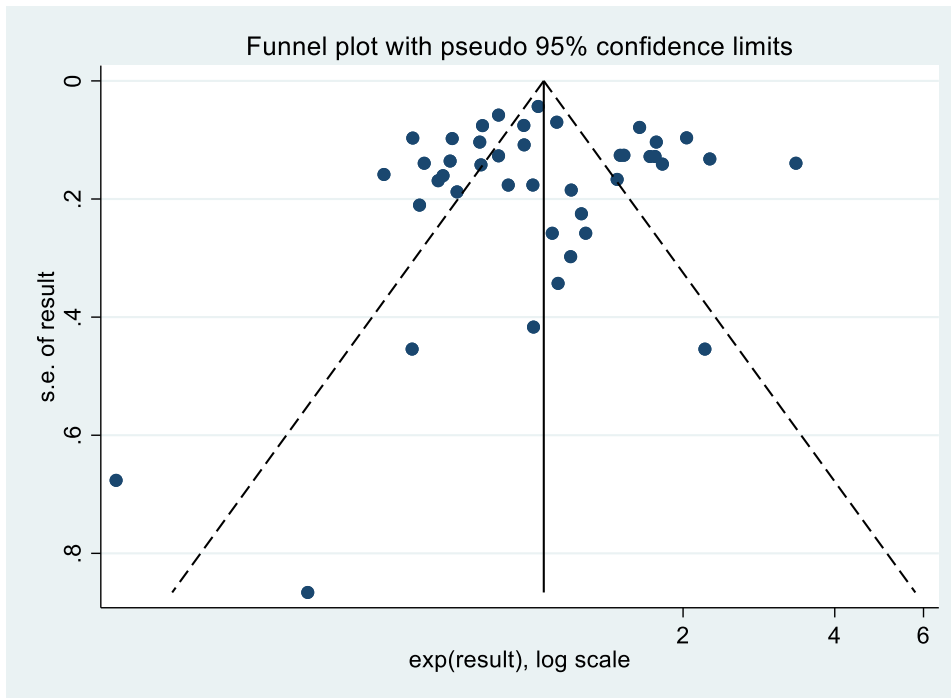


Figure S2b: Funnel plot (female physicians)

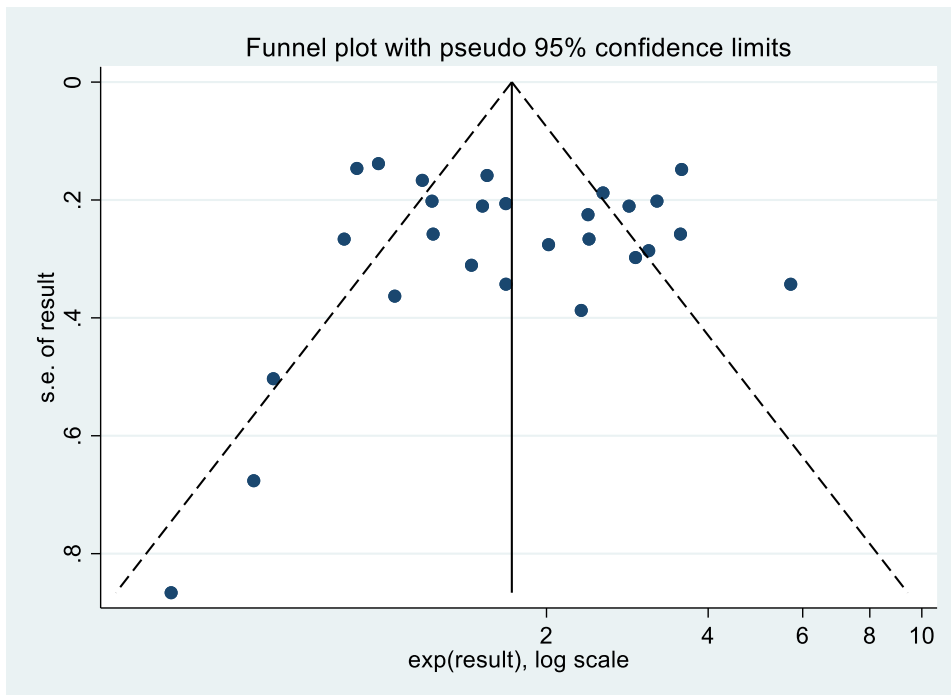
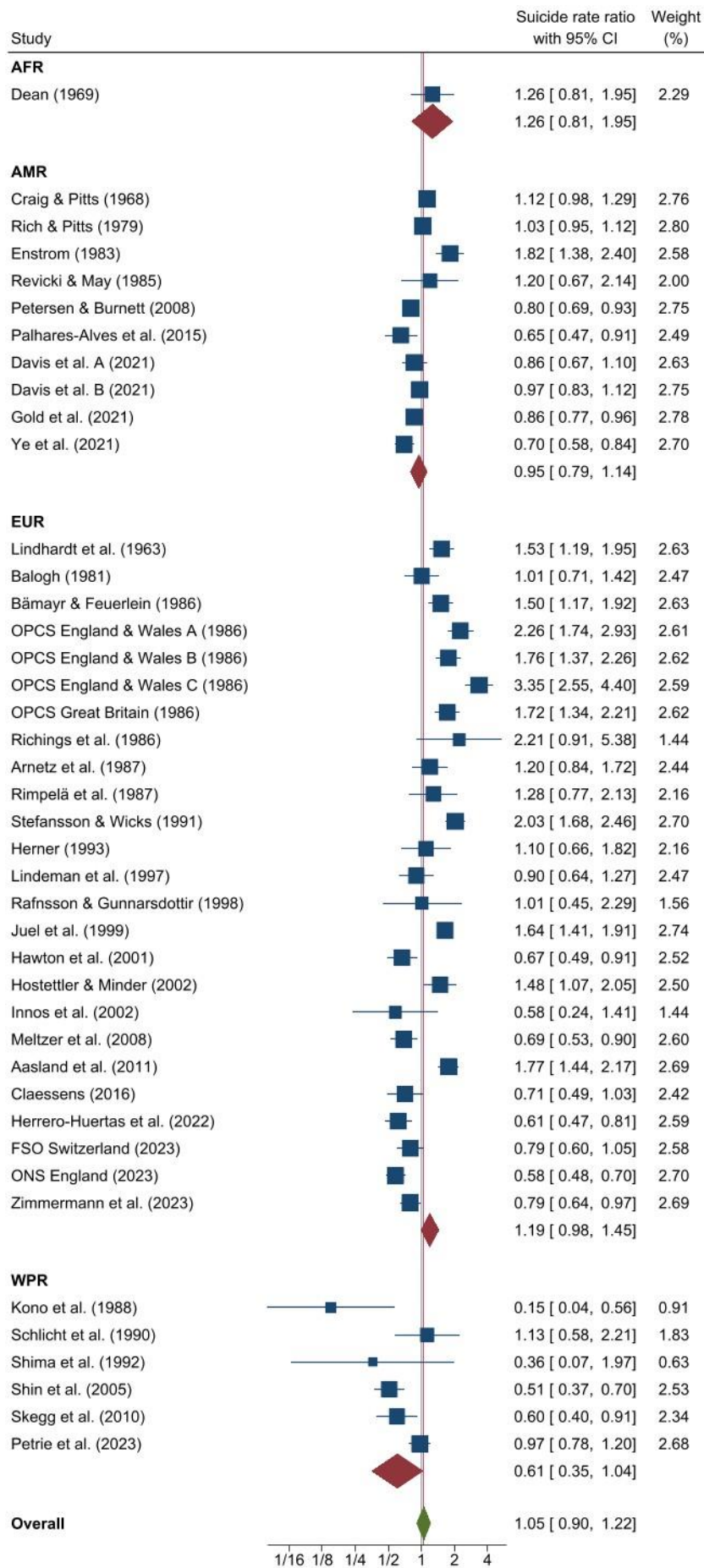
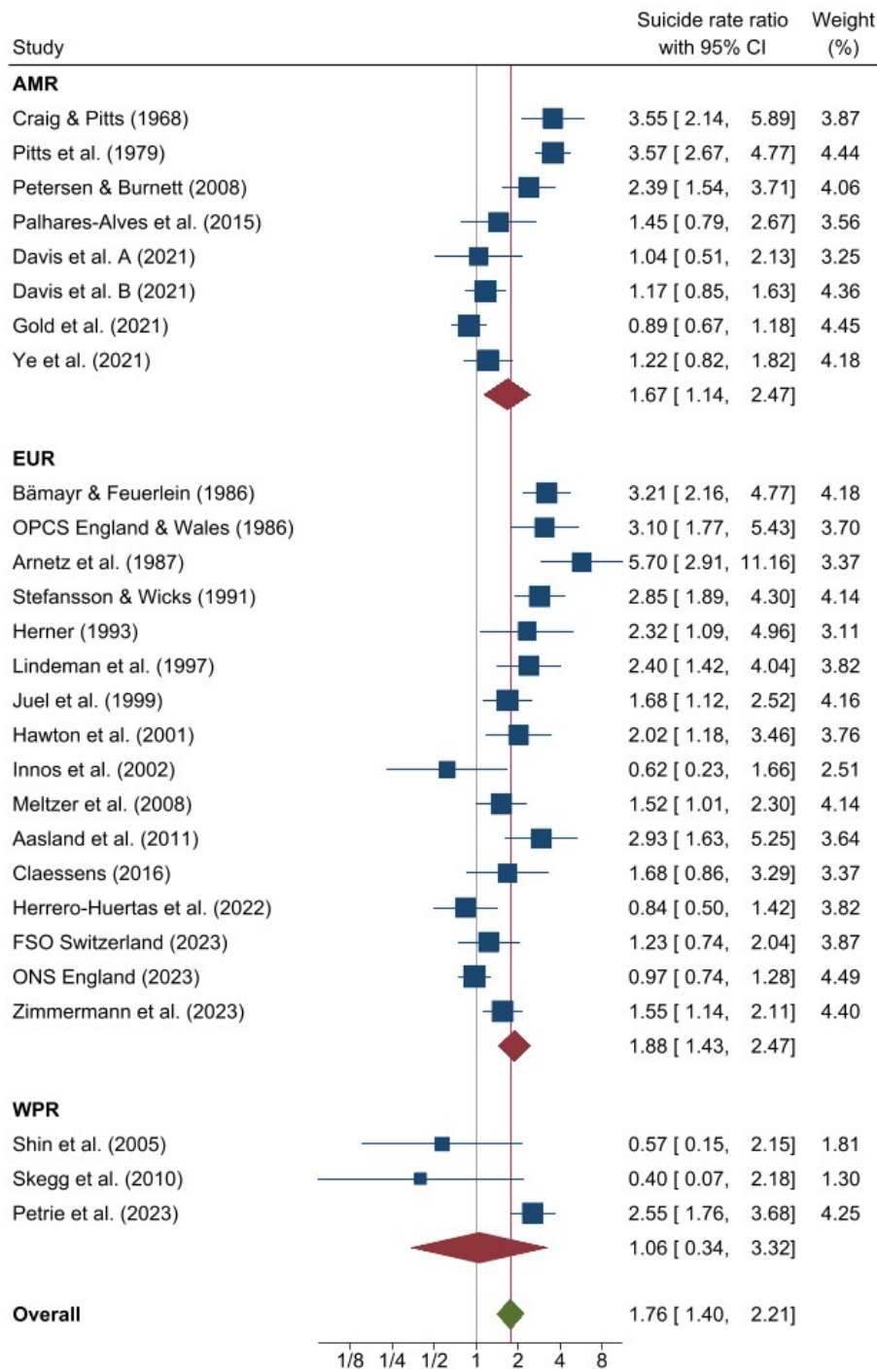


Figure S3a: Subgroup analysis for geographic region, WHO regions (male physicians)



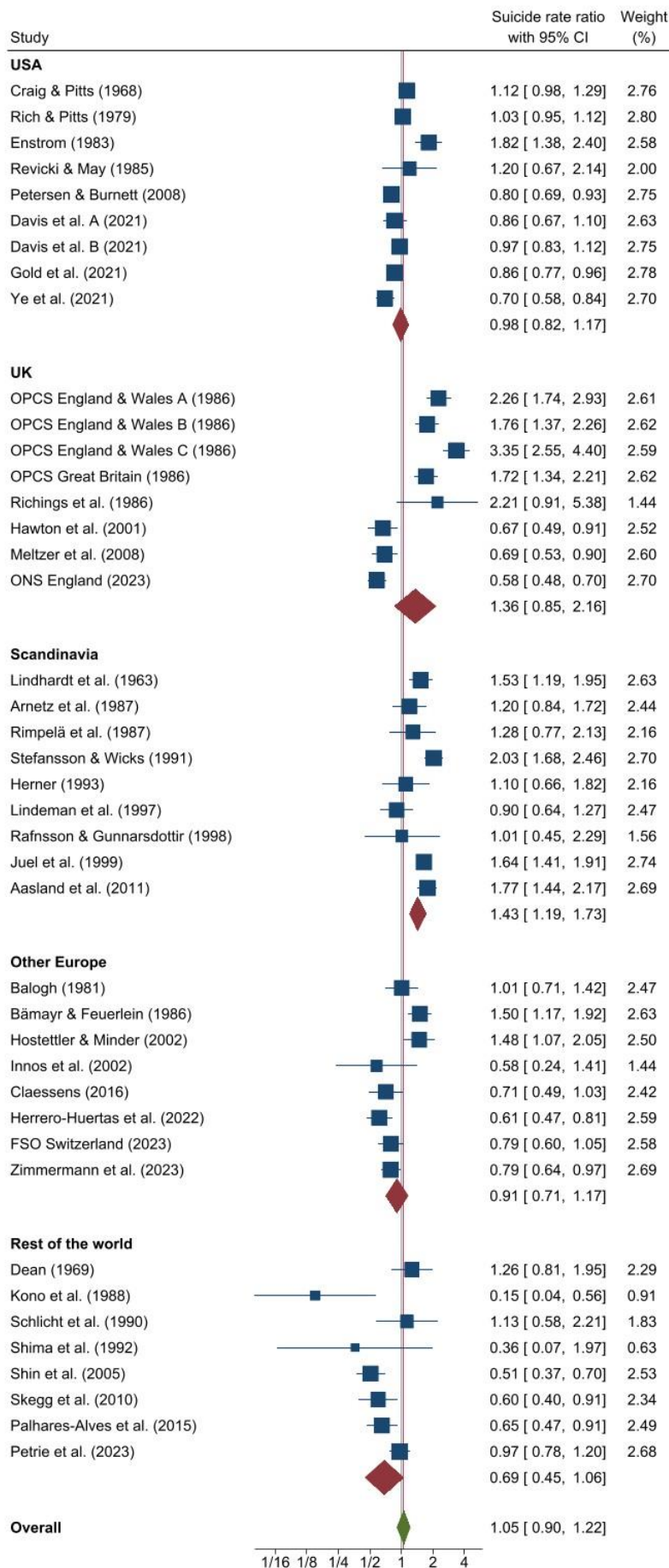
Random-effects Sidik-Jonkman model

Figure S3b: Subgroup analysis for geographic region, WHO regions (female physicians)



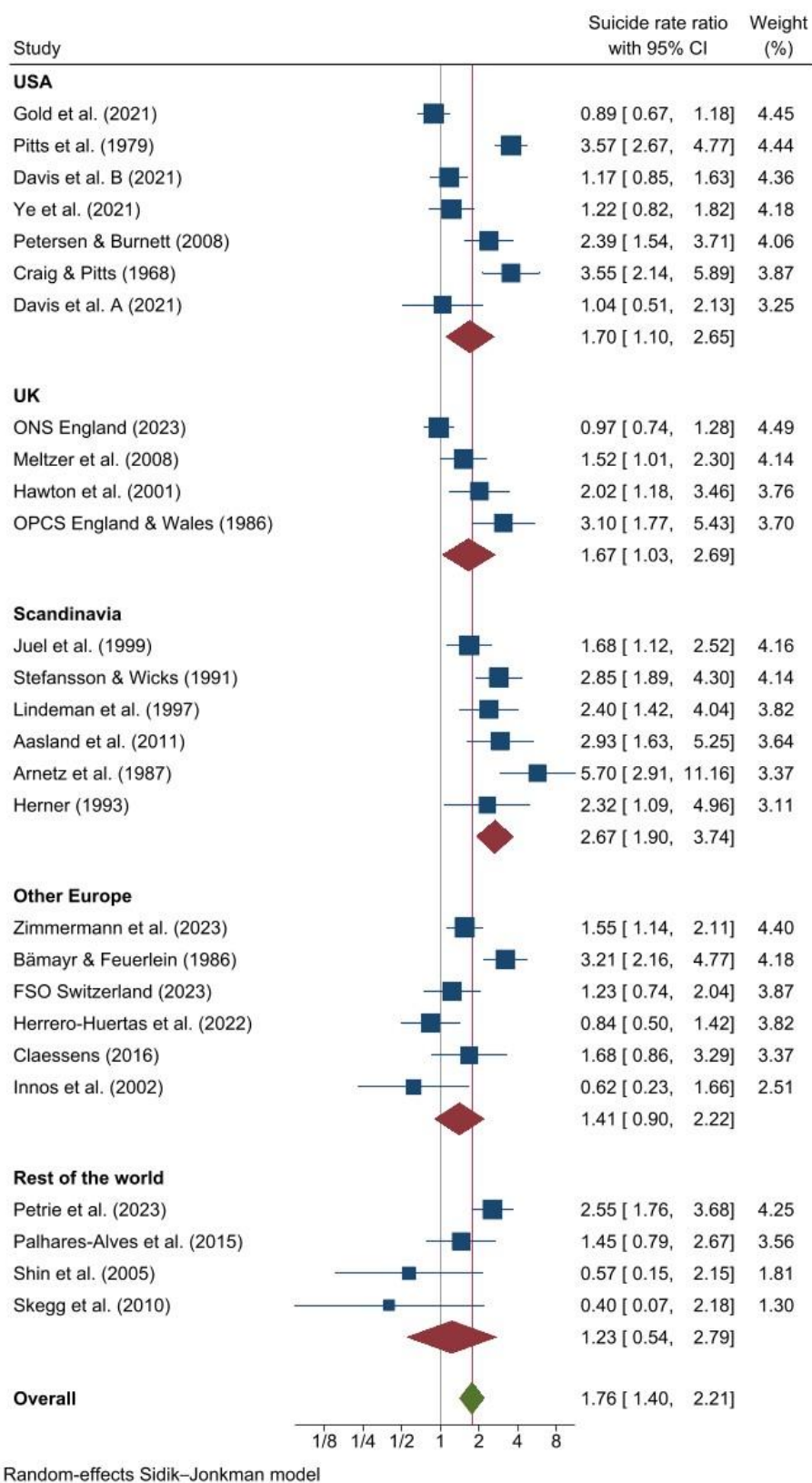
Random-effects Sidik-Jonkman model

Figure S4a: Subgroup analysis for geographic region, most common study origin regions (male physicians)



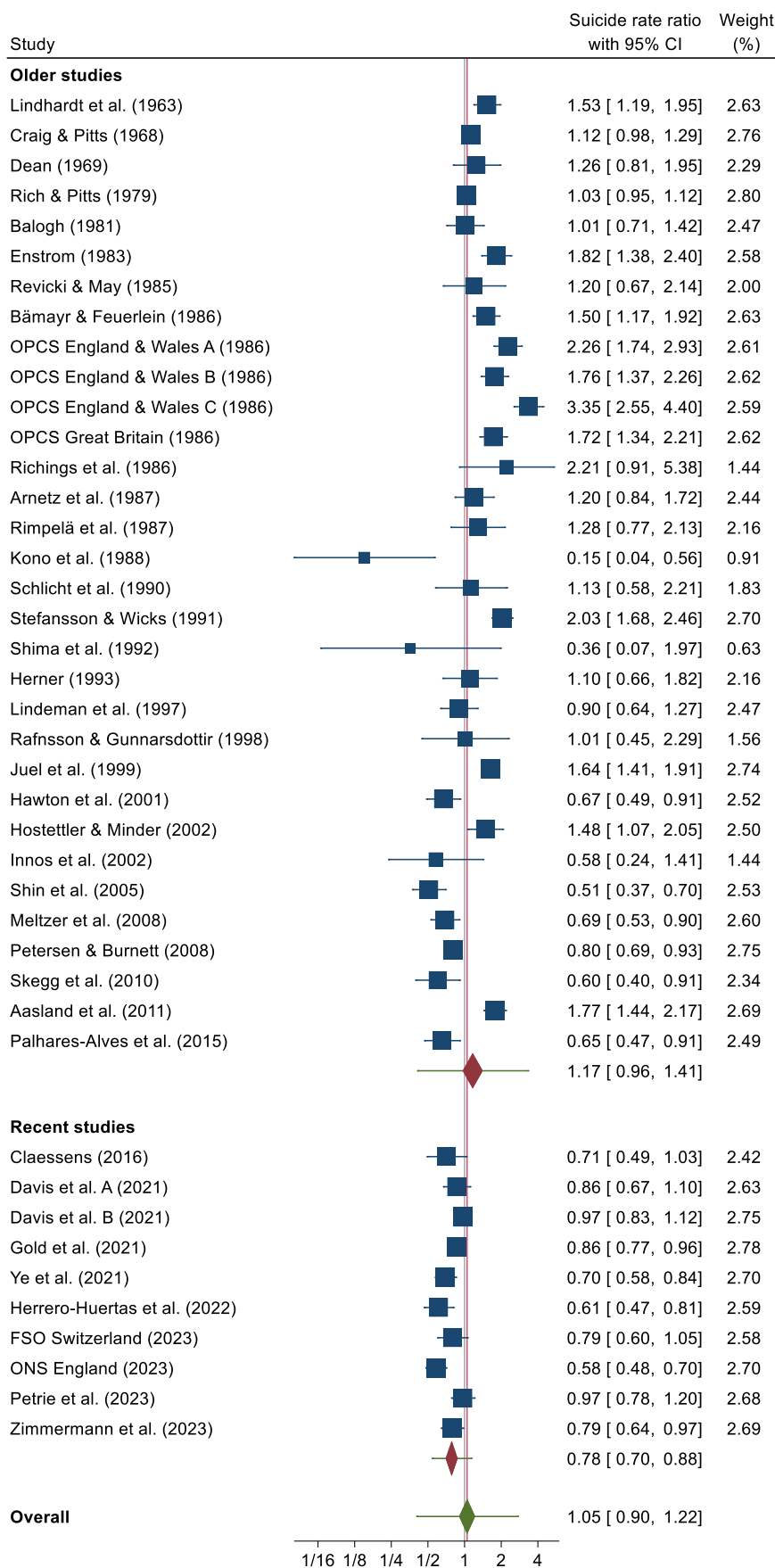
Random-effects Sidik-Jonkman model

Figure S4b: Subgroup analysis for geographic region, most common study origin regions (female physicians)



Random-effects Sidik-Jonkman model

Figure S5a: Forest plot with subgroup analysis for older and recent studies (male physicians)



Random-effects Sidik-Jonkman model
95% prediction intervals

Figure S5b: Forest plot with subgroup analysis for older and recent studies (female physicians)

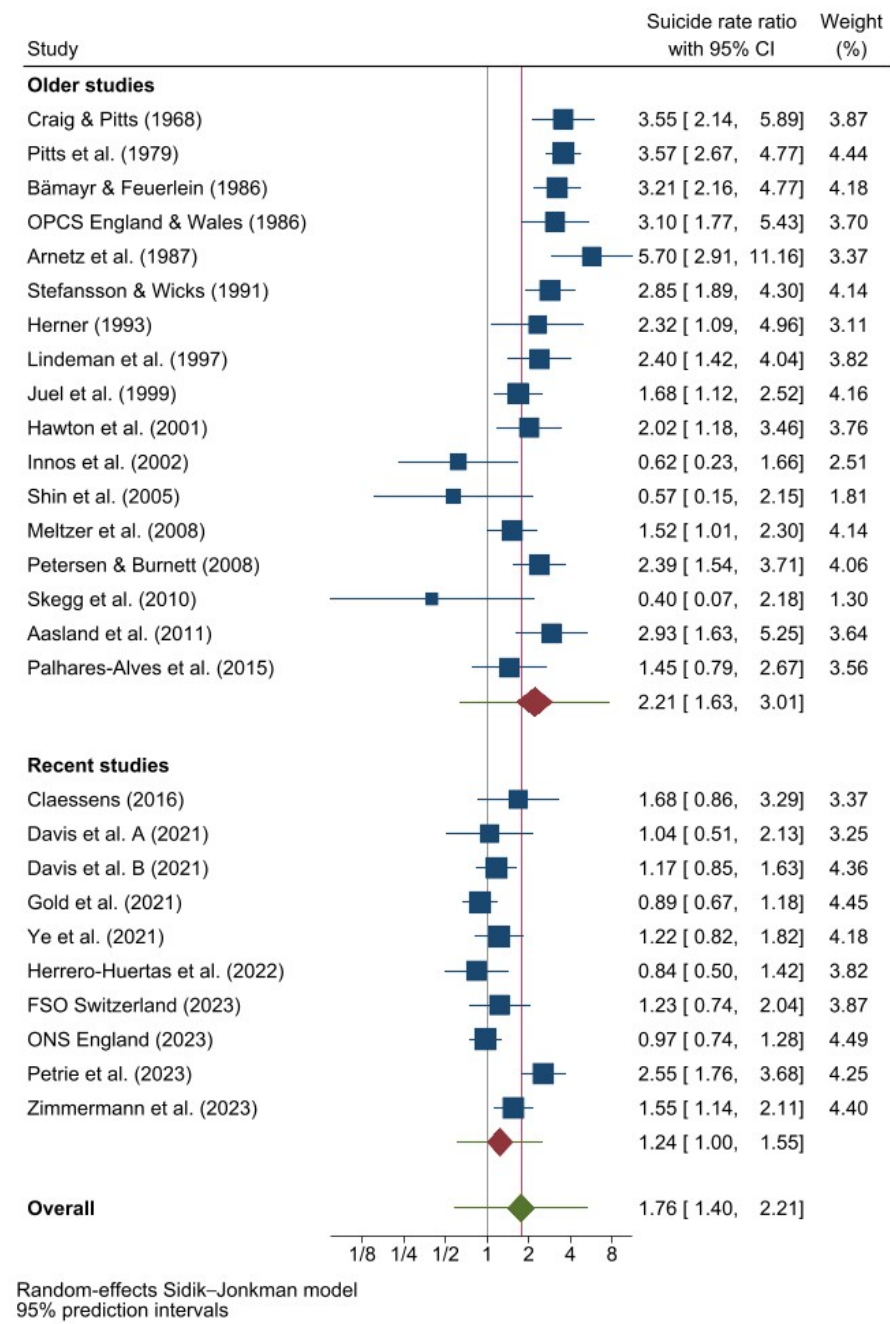
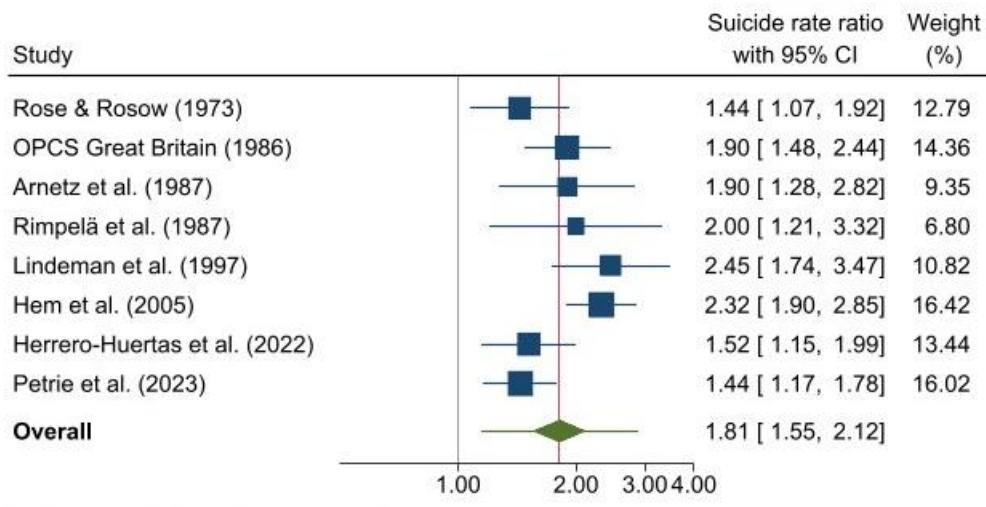


Figure S6: Forest plot with suicide rate ratios of male physicians (reference: group of other professions of similar socioeconomic/educational level)



Random-effects Sidik-Jonkman model
95% prediction interval

Table S6: Characteristics of included studies for secondary meta-analysis

Studies on male physicians

Study	Location	Time period	Suicides	Effect	95% CI*	Measure	R1	R2	O	E	SE†	Reference group
Rose & Rosow (1973) ⁴⁵	California, USA	1959-1961	49	1.44	1.06-1.90	SRR‡	79	55	49	34.1	0.148	other professionals
OPCS Great Britain (1986) ⁷⁰	UK	1979-1983 (ex. 1981)	65	1.90	1.47-2.42	SMR			65	34.2	0.128	social class I
Arnetz et al. (1987) ⁷²	Sweden	1961-1970	32	1.90	1.30-2.86	SMR			32	16.8	0.201	other academics
Rimpelä et al. (1987) ⁷³	Finland	1971-1980	17	2.00	1.17-3.20	SRR‡			17	8.5	0.258	other professionals
Lindeman et al. (1997) ⁷⁹	Finland	1986-1993	35	2.45	1.71-3.41	RR‡	54	22	35	14.3	0.176	other professionals
Hem et al. (2005) ^{23,89}	Norway	1960-2000	98	2.32	1.89-2.83	RR‡	43	18.5	98	42.2	0.104	other graduates
Herrero-Huertas et al. (2022) ⁹⁵	Spain	2001-2011	55	1.52	1.14-1.97	SRR‡	1	0.66	55	36.3	0.140	other higher professions
Petrie et al. (2023) ⁹⁹	Australia	2001-2017	90	1.44	1.16-1.77	SRR‡	15.0	10.4	90	62.4	0.108	other health professionals

Studies on female physicians

Study	Location	Time period	Suicides	Effect	95% CI*	Measure	R1	R2	O	E	SE†	Reference group
Arnetz et al. (1987) ⁷²	Sweden	1961-1970	10	4.50	2.16-8.18	SMR			10	2.2	0.340	other academics
Lindeman et al. (1997) ⁷⁹	Finland	1986-1993	16	3.50	2.00-5.68	RR‡	35	10	16	4.6	0.266	other professionals
Hem et al. (2005) ^{23,89}	Norway	1960-2000	13	2.25	1.20-3.85	RR‡	26.1	11.6	13	5.8	0.298	other graduates
Herrero-Huertas et al. (2022) ⁹⁵	Spain	2001-2011	16	1.16	0.66-1.89	SRR‡	1	0.86	16	13.8	0.266	other higher professions
Petrie et al. (2023) ⁹⁹	Australia	2001-2017	31	2.26	1.53-3.20	SRR‡	7.9	3.5	31	13.7	0.188	other health professionals

* Confidence intervals calculated by the reviewers based on Fisher's exact test¹⁰²

† Standard error calculated by the reviewers with the formula recommended by the Cochrane handbook¹⁰³

‡ Effect estimate calculated by the reviewers

Abbreviations: R1 = rate of physician target population, R2 = rate of reference population, O = observed number of suicides, E = expected numbers of suicide

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