

Online supplementary material

Figure 1

PRISMA Flow diagram of the systematic search for studies reporting on contact with mental health services before suicide.

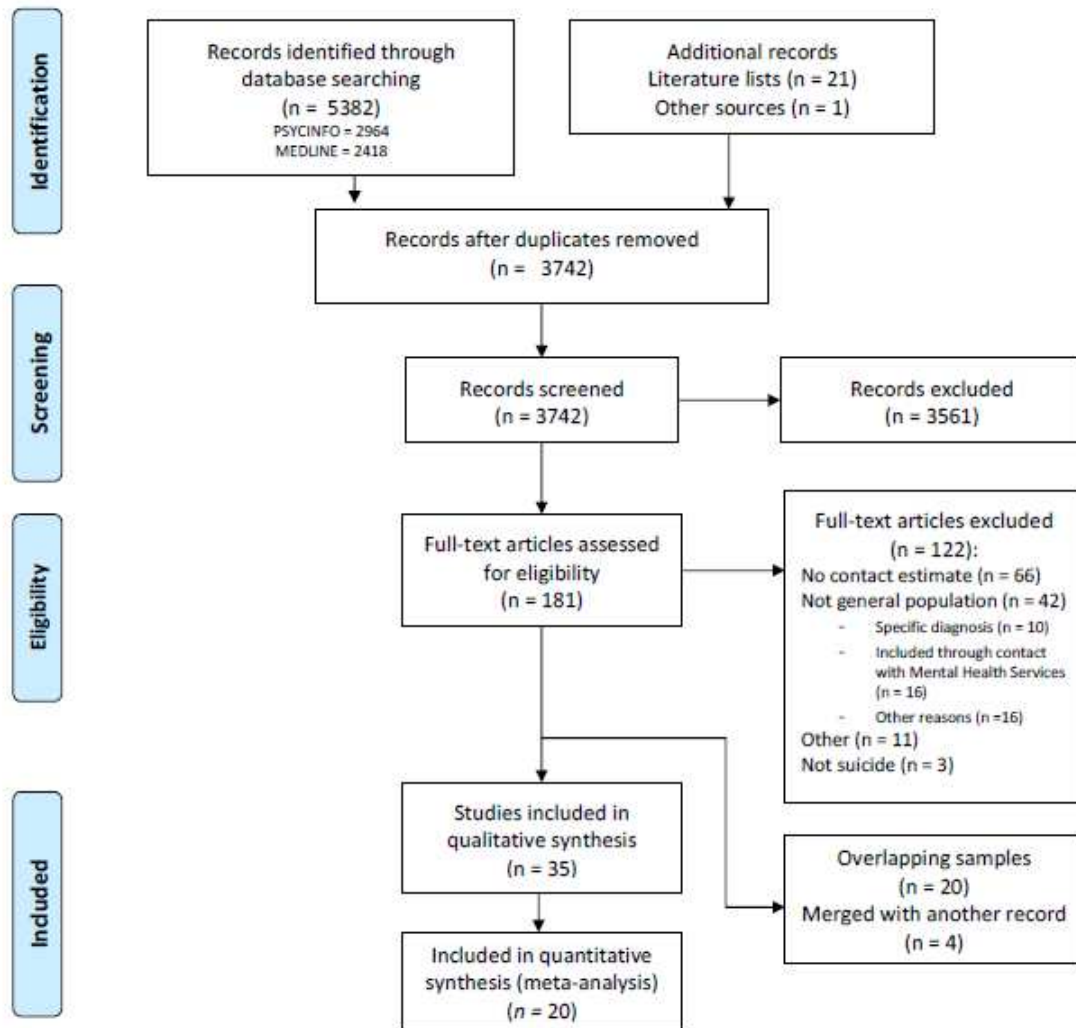


Table 1**Studies excluded due to overlapping samples**

Author (year)	<i>N</i>	Country	Record included in review
Agerbo (1)	9011	Denmark	Qin (2-4)
Andersen (5)	472	Denmark	Qin (2-4)
Beautrais (6)	61	Australia	Beautrais (7)
Chang (8)	862	Taiwan	Lee (9)
Chang (10)	12497	Taiwan	Lee (9)
Erlangsen (11)	2323	Denmark	Qin (2-4)
Hjorthøj (12)	2429	Denmark	Qin (2-4)
Gairin (13)	219	England	Hunt (14), Meehan (15)
Lahti (16)	58	Finland	Pirkola (17)
Linsley (18)	205	England	Hunt (14), Meehan (15)
Mortensen (19)	811	Denmark	Qin (2-4)
Nicoll (20)	752	Scotland	Dougall (21)
Ougrin (22)	54	England	Hunt (23)
Pan (24)	2351	Taiwan	Lee (9)
Phillips (25)	519	China	Yang (26)
Renaud (27)	55	Canada	Gontijo Guerra (28)
Renaud (29)	67	Canada	Gontijo Guerra (28)
Stark (30)	177	Scotland	Dougall (21)
Stenager (31)	4142	Denmark	Qin (2-4)
Webb (32)	2385	Denmark	Qin (2-4)

Table 2 - Characteristics of included studies

Author (year)	Country	Time period	Age group	Design	Cumulative percentage in contact with services							
					Suicides	Current	1 month	3 months	6 months	1 year	Life	
Inpatient services												
Ahmedani (33)	USA	2000-10		Record review	5894		4% (232)				14% (836)	
	Male				4534		4% (159)				12% (541)	
	Female				1359		5% (73)				22% (295)	
Bakken (34)	Norway	2009-11		Register linkage	1721	5% (79)					22% (378)	
Bakst (35)	Israel	2007-10		Psychological autopsy	98				16% (16)			34% (33)
Beautrais (7)	New Zealand	1991-95		Psychological autopsy	202						17% (35)	
Chock (36)	USA	2000-09		Record review	86						19% (16)	
Conwell (37)	USA		50 +	Psychological autopsy	86							29% (25)
Deisenhammer (38)	Austria	2004-11		Record review	711	4% (30)			17% (119)			
	Male				531	3% (18)			14% (73)			
	Female				180	7% (12)			26% (46)			
Deisenhammer (39)	Austria	1996-02		Record review	665		8% (52)				16% (109)	
Dougall (21)	Scotland	1981-10	15+	Register linkage	16411			6% (908)	8% (1254)		10% (1581)	14% (2270)
	Male				12112						12% (1458)	
	Female				4299						19% (812)	
Farand (40)	Canada	1992-96	0-19	Record review	435	1% (3)						
Ho (41)	Hong Kong	1997-99		Record review	2432	3% (80)		7% (179)				20% (486)
Hoffmann-Richter (42)	Switzerland	1992-94		Record review	287	2% (6)	6% (18)	8% (24)			11% (32)	
Houston (43)	England	1993-95	15-24	Psychological autopsy	47	6% (3)						13% (6)

Author (year)	Country	Time period	Age group	Design	Cumulative percentage in contact with services						
					Suicides	Current	1 month	3 months	6 months	1 year	Life
Meehan (15) Hunt (23)	England/Wales	1996-00		National clinical survey	20927	4% (754)		9% (1854)			
King (44)	England	1988-93	15+	Record review	1457	2% (32)		7% (96)		14% (207)	
	Male				1037	2% (19)				22% (231)	
	Female				420	3% (13)				39% (164)	
Lesage (45)	Canada	2002-03		Psychological autopsy	102		4% (4)			28% (29)	70 % (71)
Paraschakis (46)	Greece	2007-09	60+	Psychological autopsy	118					13% (15)	
Pirkola (17)	Finland	1985-91		Register linkage	9719		9 % (904)	13 % (1286)	17 % (1628)	20% (1981)	
	Male				7666					17% (1293)	
	Female				2053					34% (688)	
		1995-01			8761		9% (784)	13% (1173)	17% (1517)	21% (1865)	
	Male				6804					18% (1246)	
	Female				1957					32% (619)	
Qin (2-4)	Denmark	1981-97		Register linkage	21169	7% (1461)	13% (2780)		21% (4437)	25% (5336)	44% (9316)
	Male				13681	5% (736)	10% (1432)		17% (2360)	21% (2839)	37% (5059)
	Female				7488	10% (725)	18% (1348)		28% (2077)	33% (2497)	57% (4257)
Reutfors (47)	Sweden	1991-03	18+	Register linkage	20675	4% (769)	11% (2187)			25% (5202)	
	Male				14501	3% (457)	9% (1346)			22% (3261)	
	Female				6174	5% (312)	14% (841)			31% (1941)	
Sveticic (48)	Australia	1994-07		Psychological autopsy	7126						13% (917)
Outpatient services											
Chock (36)	USA	2000-09		Record review	86					40% (34)	
Farand (40)	Canada	1992-96	0-19	Record review	435					9% (38)	

Author (year)	Country	Time period	Age group	Design	Cumulative percentage (n) in contact with services						
					Suicides	Current	1 month	3 months	6 months	1 year	Life
Farand (40)	Canada	1992-96	0-19	Record review	435					10% (43)	
Ho (41)	Hong Kong	1997-99		Record review	2432		16% (394)	21% (511)			25% (606)
Houston (43)	England	1993-95	15-24	Psychological autopsy	47	32% (15)					32% (15)
Meehan (15) Hunt (14)	England/Wales	1996-00		National clinical survey	20927					24% (5099)	
Hunt (23)	England	2003-11	18+	National clinical survey	39361					27% (10744)	
King (44)	England	1988-93	15+	Record review	1457					27% (395)	41% (602)
Kung (53, 54)	USA	1993-93	15-64	Psychological autopsy	1463					16% (238)	
Lawrence (55)	Australia	1980-95	60+	Record review	447						40% (181)
Lee (9)	Taiwan	1998-04	15+	Register linkage	19426		13% (2511)			22% (4322)	
	Male				13151		10% (1358)			18% (2411)	
	Female				6275		18% (1153)			30% (1911)	
Loh (56)	Singapore	2000-04	10-24	Record review	188		28% (52)				
Rodway (57)	England	2014-15	10-19	National clinical survey	130					13% (17)	41% (53)
Sveticic (48)	Australia	1994-07		Psychological autopsy	7126			25% (1764)			42% (2991)
Weis (58)	USA	2004-04		Register linkage	491		6% (29)	8% (40)	9% (46)		19% (91)
Windfuhr (59)	UK	1997-03	10-19	National clinical survey	1722		9% (156)			14% (242)	
Yang (26)	China	1995-00		Psychological autopsy	895						8% (76)

Table 3**Risk of Bias assessment**

Study	External validity			Internal validity				Overall assessment
	Representative national sample	Representative sampling frame	Random selection / census taken	Data collection reliable / valid	Acceptable suicide definition	Appropriate numerator/denominator	Suitable subgroups	
Ahmedani (33)*	Low	Low	High	High	Low	High	Low	Moderate
Bakken (34)*	Low	Low	Low	Low	Low	Low	Low	Low
Bakst (35)	High	High	High	High	High	High	Low	High
Beautrais (7)*	High	Low	High	High	High	Low	Low	Moderate
Bressani (50)	High	Low	High	High	High	High	Low	High
Chiu (51)	High	High	High	Low	High	Low	Low	High
Chock (36)*	High	Low	Low	High	High	Low	Low	Moderate
Coffey (52)	High	Low	Low	High	Low	Low	Low	Moderate
Conwell (37)	High	High	High	Low	High	Low	High	High
Deisenhammer (38)*	High	Low	High	Low	High	High	Low	Moderate
Deisenhammer (39)*	High	Low	High	Low	High	Low	Low	Moderate
Dougall (21)*	Low	Low	Low	Low	High	Low	Low	Low
Farand (40)	High	Low	Low	High	Low	Low	Low	Moderate
Gontijo Guerra (28)	High	Low	Low	Low	Low	Low	Low	Moderate
Ho (41)*	Low	Low	Low	Low	Low	High	Low	Low
Hoffmann-Richter (42)*	High	Low	High	High	High	Low	Low	High
Houston (43)	High	High	High	Low	High	Low	Low	Moderate
Hunt (60), Meehan (61)*	Low	Low	Low	Low	High	Low	Low	Low
Hunt (23)*	Low	Low	Low	Low	Low	Low	Low	Low
King (44)*	High	Low	Low	Low	Low	Low	Low	Low
Kung (53, 54)*	Low	High	Low	High	Low	High	Low	Moderate
Lawrence (55)	High	Low	Low	High	High	Low	Low	Moderate
Lee (9)*	Low	Low	Low	Low	Low	Low	Low	Low
Lesage (45)*	High	Low	High	Low	High	High	Low	High

Loh (56)	High	Low	High	High	High	High	High	Low	High
Paraschakis (46)	High	Low	High	High	High	High	High	Low	High
Pirkola (17)*	Low	Low	Low	Low	Low	Low	Low	Low	Low
Qin (2-4)*	Low	Low	Low	Low	Low	Low	Low	Low	Low
Reutfors (47)*	Low	Low	Low	Low	Low	Low	Low	Low	Low
Rodway (57)	High	Low	High	Low	Low	High	High	Low	Moderate
Schaffer (49)*	High	Low	Low	Low	Low	High	Low	Low	Low
Svetitic (48)	High	Low	Low	Low	Low	High	Low	Low	Moderate
Weis (58)	High	Low	High	Low	Low	Low	Low	Low	Moderate
Windfuhr (59)	High	Low	Low	Low	Low	Low	Low	Low	Low
Yang (26)	Low	High	High	Low	Low	High	High	Low	High

Note. Studies marked with * is included in the meta-analysis.

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