Supplemmentary material

Disparities in screening and treatment of cardiovascular diseases in patients with mental disorders across the world: systematic review and meta-analysis of 47 observational studies

Marco Solmi,1,2,3 Jess Fiedorowicz,4 Laura Poddighe,5 Marco Delogu,6 Miola Alessandro,1 Anne Hoye,7,8,9 Ina H Heiberg,9 Brendon Stubbs,10,11 Lee Smith,12 Henrik Larsson,13,14 Rubina Attar15,16, René E Nielsen,17,18 Samuele Cortese,19,20,21,22Jae Il Shin,23 Paolo Fusar-Poli,3,24,25,26 Joseph Firth,27,28 Lakshmi N Yatham,29 Andre Carvalho,30,31 David J Castle,32,33 Mary Seeman,30,31 Christoph U Correll34,35,36

1 Neurosciences Department, University of Padua, Italy
2 Padua Neuroscience Center, University of Padua, Italy
3 Early Psychosis: Interventions and Clinical-detection (EPIC) Lab, Department of Psychosis Studies, Institute of Psychiatry, Psychology & Neuroscience, King's College London, London, UK
4 Psychiatry Department, University of Ottawa, Ontario, Canada
5 General Psychology Department, University of Padua, Italy
6 Philosophy, Sociology, Pedagogy, and Applied Pyschology Department, University of Padua, Italy
7 Department of Clinical Medicine, Faculty of Health Sciences, UiT-The Arctic University of Norway, Tromsø, Norway
8 Division of Mental Health and Substance Abuse, University Hospital of North Norway, Tromsø, Norway
9 Center for Clinical Documentation and Evaluation (SKDE), Tromsø, Norway
10 Physiotherapy Department, South London and Maudsley NHS Foundation Trust, Denmark Hills, London, SE5 8AZ, UK
11 Department of Psychological Medicine, Institute of Psychiatry, Psychology and Neuroscience, King's College London, De Crespigny Park Box, London, SE5 8AF, UK
12 The Cambridge Centre for Sport and Exercise Science, Anglia Ruskin University, Cambridge, UK
13 Department of Medical Epidemiology and Biostatistics, Karolinska Institutet, Stockholm, Sweden
14 School of Medical Sciences, Örebro University, Örebro, Sweden
15 Department of Cardiology, Aalborg University Hospital, Aalborg, Denmark
16 Department of Clinical Sciences, Lund University, Lund, Sweden;
17 Department of Psychiatry – Aalborg University Hospital, Aalborg, Denmark
18 Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
19 Centre for Innovation in Mental Health - Developmental Lab, School of Psychology, University of Southampton, Southampton, UK
20 Solent NHS Trust, Southampton, UK
21 Child Study Center, New York University, New York, NY, USA
22 Division of Psychiatry and Applied Psychology, School of Medicine, University of Nottingham, Nottingham, UK
23 Department of Paediatrics, Yonsei University College of Medicine, Seoul, Republic of Korea
24 National Institute for Health Research, Maudsley Biomedical Research Centre, South London and Maudsley NHS Foundation Trust, London, UK
25 Department of Brain and Behavioral Sciences, University of Pavia, Pavia, Italy
26 OASIS service, South London and Maudsley NHS Foundation Trust, London, UK
27 Division of Psychology and Mental Health, University of Manchester, Manchester, UK
28 NICM Health Research Institute, Western Sydney University, Westmead, Australia
29 Department of Psychiatry, University of British Columbia, Vancouver, British Columbia, Canada
30 Department of Psychiatry, University of Toronto, Toronto, ON, Canada
31 Centre for Addiction and Mental Health (CAMH), Toronto, ON, Canada
32 Department of Psychiatry, St Vincent's Hospital, Melbourne, Australia.
33 Department of Psychiatry, The University of Melbourne, Melbourne, Australia.
34 Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy, Charité University Medicine Berlin, Augustenburger Platz 1, 13353 Berlin, Germany.
35 Department of Psychiatry, The Zucker Hillside Hospital, Northwell Health, 75-59 263rd St, Glen Oaks, NY 11004 USA.
36 Department of Psychiatry and Molecular Medicine, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, 500 Hofstra Blvd, Hempstead, NY 11549 USA.

Corresponding author:

Dr. Marco Solmi, MD.
Address: Neuroscience Department, University of Padua, Padua, Italy – Via Giustiniani, 5 - Padua - Italy
Tel: +39-0498213831 - E-mail: marco.solmi83@gmail.com

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eTable 1. PRISMA checklist(1)

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	3
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	3
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	3
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	4
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	4
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	4
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	4
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	4
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	5
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	5
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	5
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	5
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	5
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	NA
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	6

Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	6
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	7
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	6
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	6
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	7
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	NA
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	8
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	9
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	9
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	9

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

eTable 2. MOOSE Checklist for Meta-analyses of Observational Studies(2)

Item No	Recommendation	Reported on Page No
Reporting of background should include		
1	Problem definition	3
2	Hypothesis statement	3
3	Description of study outcome(s)	3
4	Type of exposure or intervention used	3
5	Type of study designs used	3
6	Study population	3
Reporting of search strategy should include		
7	Qualifications of searchers (eg, librarians and investigators)	4
8	Search strategy, including time period included in the synthesis and key words	4
9	Effort to include all available studies, including contact with authors	5
10	Databases and registries searched	4
11	Search software used, name and version, including special features used (eg, explosion)	4
12	Use of hand searching (eg, reference lists of obtained articles)	3,4
13	List of citations located and those excluded, including justification	5, Table 2, eTable 3
14	Method of addressing articles published in languages other than English	3
15	Method of handling abstracts and unpublished studies	3
16	Description of any contact with authors	5
Reporting of methods should include		
17	Description of relevance or appropriateness of studies assembled for assessing the hypothesis to be tested	3
18	Rationale for the selection and coding of data (eg, sound clinical principles or convenience)	4
19	Documentation of how data were classified and coded (eg, multiple raters, blinding and interrater reliability)	5
20	Assessment of confounding (eg, comparability of cases and controls in studies where appropriate)	5
21	Assessment of study quality, including blinding of quality assessors, stratification or regression on possible predictors of study results	4, 5
22	Assessment of heterogeneity	5
23	Description of statistical methods (eg, complete description of fixed or random effects models, justification of whether the chosen models account for predictors of study results, dose-response models, or cumulative meta-analysis) in sufficient detail to be replicated	5, Table 1
24	Provision of appropriate tables and graphics	Table 1, 2, 3, Figure 1, Table 1, 2, 3, 4
Reporting of results should include		
25	Graphic summarizing individual study estimates and overall estimate	NA
26	Table giving descriptive information for each study included	Table 2
27	Results of sensitivity testing (eg, subgroup analysis)	Table 2,3,4
28	Indication of statistical uncertainty of findings	6, Table 2,3,4

Item No	Recommendation	Reported on Page No
Reporting of discussion should include		
29	Quantitative assessment of bias (eg, publication bias)	6, Table 3,4
30	Justification for exclusion (eg, exclusion of non-English language citations)	eTable 3
31	Assessment of quality of included studies	7, Table 2,3,4
Reporting of conclusions should include		
32	Consideration of alternative explanations for observed results	7
33	Generalization of the conclusions (ie, appropriate for the data presented and within the domain of the literature review)	8
34	Guidelines for future research	8
35	Disclosure of funding source	8

eTable 3. List of studies excluded after full-text assessment, with reason for exclusion.

Author, year	Reason for exclusion
Avari, 2015(3)	NO CVD
Buhagiar,, 2011(4)	NO CVD
Chwastiak, 2008(5)	NO CVD
De Hert, 2011(6)	NO CVD
Gaye, 2016(7)	NO CVD
Kreyenbuhl, 2006(8)	NO CVD
Maurer, 2008(9)	NO CVD
Rathmann, 2016(10)	NO CVD
Roberts, 2007(11)	NO CVD
Thakore, 2005(12)	NO CVD
Wang, 2005(13)	NO CVD
Weiss, 2006(14)	NO CVD
White, 2007(15)	NO CVD
Yarborough, 2018(16)	NO CVD
Breese, 2012(17)	No Data
Briskman, 2012(18)	No data
Bruggeman, 2010 (19)	No Data
Coblents, 2015(20)	No Data
Cohen, 2010(21)	No Data
Davidson, 2002 (22)	No Data
De Couto, 2010(23)	No Data
De Hert, 2011(24)	No Data
De Hert, 2012(25)	No Data
Greenwood, 2016(26)	No Data
Hodgson, 2010(27)	No Data
Hughes, 2011(28)	No Data
Kalra, 2019(29)	No Data
Kaur, 2019(30)	No Data
Lambert, 2009(31)	No Data
Li, 2007(32)	No Data
Nemcek, 2009(33)	No Data
Newcomer, 2007(34)	No Data
Newcomer, 2008(35)	No Data
Pope, 2011(36)	No Data
Tylee, 2010(37)	No Data
Albus, 2010(38)	NO SMI
Grace, 2008(39)	NO SMI
L'Italien, 2007(40)	NO SMI
Moulin, 2017(41)	NO SMI
Shanks, 2007(42)	NO SMI
Srivastava, 2018(43)	NO SMI
Vahia, 2008(44)	NO SMI
Barra, 2017(45)	Reverse Trend
Coventry, 2012(46)	Reverse Trend

Author, year	Reason for exclusion
Dickson, 2013(47)	Reverse Trend
Hart, 2008(48)	Reverse Trend
Kim, 2013(49)	Reverse Trend
Lacey, 2004(50)	Reverse Trend
Messerli, 2012(51)	Reverse Trend
Schuster, 2016(52)	Reverse Trend
Ski, 2017(53)	Reverse Trend
Smolderen, 2017(54)	Reverse Trend
Stewart, 2014(55)	Reverse Trend
Sundquist, 2016(56)	Reverse Trend
Towers, 2011(57)	Reverse Trend
Hennekens, 2007(58)	Review
Mitchell, 2009 (59)	Review
Mitchell, 2010(60)	Review
Mitchell, 2011(61)	Review
Byrd, 2012(62)	Risk Factor
Castillo-Sanchez, 2017(63)	Risk Factor
Hardy, 2013(64)	Risk Factor
Kaplowitz, 2006(65)	Risk Factor
Kilbourne, 2008 (66)	Risk Factor
Lack, 2014(67)	Risk Factor
Osborn, 2011(68)	Risk Factor
Blackburn, 2018(69)	Risk Factor
Breese, 2011(70)	Risk Factor
Ritchie, 2017(71)	Risk factor

eTable 4. Characteristics of included studies

Author, year	Design	Country	N tot	N MI	Age	F%	MI diagnosis	CVD Diagnosis	Screening Treatment	TYPE OF SMI	MI	CVD	Period
Abrams, 2009(72)	C	US	21,745	7,812	Mean 68.5	2%	ICD-9	ICD-9	Revascularization	MDD	789	AMI	2004-2006
										Anxiety disorders	366		
										PTSD	361		
										BD	105		
										Schizophrenia and other psychotic disorders	94		
Attar, 2017(73)	C	Denmark	141	47	Mean 53.4; 54.1	68.7%	ICD-10	ICD-10	Screening	Schizophrenia	47	AMI	1995-2015
									Cardiologist examination				
									Treatment				
Attar, 2020(74)	C	Denmark	2,202	734	Median 58	35.7%	ICD-10	ICD-10	Coronary angiography	Schizophrenia	734	ACS	1996-2015
									PCI				
									CABG				
									Aspirin				
									Beta-blockers				
									ACE-I/ARB				
									Nitrate				
									Ca+ anatagonist				
									CABG				
Azevedo da Silva, 2014(75)	C	France	15,811	2,199	Range 35-50	26.0%	ICD-9/10	ICD-9/10	Any treatment	MDD	1,194	Stroke	2001-2011
										Mental disorders due to PSU	252	AMI	
										Other mental disorders	166		
										Mixed mental disorders	541		
										Severe mental disorders	46		
Barcella, 2019 (76)	C	Denmark	7,288	1,661	Median 67	34.0%	ICD-8/10	ICD-8/10	Coronary angiography	Psychiatric disorders	1,661	Cardiac arrest	2001-2015
									Revascularization				
									Implantable cardioverter defibrillator				
Blecker, 2010(77)	C	US	1,801	341	Range 21-62	67.9%	ICD-9	ICD-9	Ecocardiography	Schizophrenia	155	HF	2001-2004
									ACE-I/ARB	BD	82		
									Beta-blockers	MDD	58		
										Others	46		
Bongiorno, 2018(78)	C	US	325,009	41,510	Median 74; 72	53.5%	ICD-9	ICD-9	IVT	Schizophrenia	4,368	Stroke	2007-2011
										Anxiety	12,375		
										MDD	25,394		
										BD	2,841		

Author, year	Design	Country	N tot	N MI	Age	F%	MI diagnosis	CVD Diagnosis	Screening Treatment	TYPE OF SMI	MI	CVD	Period
Bongiorno, 2019(79)	C	US	37,474	6,922	Range 56-75	43.7%	ICD-9	ICD-9	CEA CAS	Schizophrenia and other psychotic disorders MDD SUD BD Anxiety disorders	440 3,104 2,278 324 1,878	Stroke	2007-2014
Bresee, 2012(80)	C	Canada	323,818	5,673	Mean 45.3; 47.6	50%	ICD-9/10	ICD-9/10	Cardiologist visit Revascularization	Schizophrenia	5,673	CHD	1995-2006
Campi, 2017(81)	C	US	61,614	1,036	Mean 60.2; 65.2	31,3%	ICD-9	ICD-9	Reperfusion Therapy	BD MDD Schizophrenia	567 314 207	AMI	2010-2015
Chang, 2020(82)	C	Hong Kong	67,692	703	18+	NA	ICD-9	ICD-9	PCI CABG	Schizophrenia and other psychotic disorders	703	ACS	1996-2001
Desai, 2002(83)	C	US	5,886	1,613	Mean 65.2	1.4%	ICD-9	ICD-9	Aspirin use Beta-blockers	Major affective disorder Other mental disorders Psychotic disorder PTSD SUD	366 1,224 188 252 308	AMI	1998-1999
Druss, 2000(84)	C	US	113,653	5,365	Mean 75.5	53,4%	ICD-9	ICD-9	PCI CABG Coronary angiography	Schizophrenia Affective Disorder Other mental disorders SUD	188 315 3,724 1,138	AMI	1994-1995
Druss, 2001(85)	C	US	88,241	4,664	Mean 76.1	52.7%	ICD-9	ICD-9	Revascularization Aspirin Beta-blockers ACE-I	Schizophrenia Affective Disorders SUD	161 271 882	AMI	1994-1995
Gal, 2016(86)	CC	Israel	8,208	2,277	Mean 68.1	60.8%	ICD-10	ICD-10	Stress test Chest X-ray Cardiologist visit PCI CABG Pace-maker Treatment	Schizophrenia	2,277	CVD	2000-2009
Gal, 2017(87)	CC	Israel	57,774	19,258	Mean 63; 66.6	48.1%	ICD-10	ICD-10	Stress test Chest X-ray Cardiologist visit	Schizophrenia BD	17,041 2,217	CVD	2000-2009
Hauck, 2020(88)	C	Ontario	108,610	1,145	Mean 68.0	36.4%	ICD-9	ICD-9, DSM-IV	Coronary angiography PCI	Schizophrenia	1,145	AMI	2008-2015

Author, year	Design	Country	N tot	N MI	Age	F%	MI diagnosis	CVD Diagnosis	Screening Treatment	TYPE OF SMI	MI	CVD	Period
									CABG				
Heiberg, 2019(89)	C	Norway	72,451	1,487	NA	52.9%	ICD-10	ICD-10	CVD diagnosed prior to cardiovascular death	Schizophrenia BD	814 673	AMI CHD HF Arrhythmia CBVD Others	2011-2016
Heiberg, 2020(90)	C	Norway	72,385	1,487	Mean 84; 76		ICD-10	ICD-10	Echocardiography Coronary angiography US peripheral vessels PCI CABG ECG	Schizophrenia BD	814 673	CVD AR HF AMI CBVD Valvular disease PVD PCD	2008-2016
Hippisley-Cox, 2007(91)	CS	UK	127,932	701	Range 55-75	40.9%	ICD-9/10	ICD-9/10	Statin Exercise testing or referral for newly diagnosed angina Aspirin, antiplatelet, anticoagulant Beta-blockers	Schizophrenia BD	332 369	CHD	2003-2005
Jacobsen, 2017(92)	C	Denmark	12,102	457	Mean 61.9; 64.1	25.9%	ICD-10	ICD-10	Aspirin/clopidogrel Beta-blockers Statins ACE-I	BD Schizophrenia Schizoaffective Others	242 43 21 151	CHD	2002-2012
Jones, 2005(93)	C	US	3,368	1,342	Range 18-64	23.8%	ICD-9	ICD-9	PCI CABG	Anxiety disorders Mood disorders Cognitive disorders Schizophrenia and other psychotic disorders Sexual disorders SUD Others	NA NA NA NA NA NA NA	AMI	1996-2001
Kisely, 2007(94)	C	Canada	17,655	2,839	NA	NA	ICD-9	ICD-9	Coronary angiography	Schizophrenia and other psychotic disorders	NA	CHD	1995-2001

Author, year	Design	Country	N tot	N MI	Age	F%	MI diagnosis	CVD Diagnosis	Screening Treatment	TYPE OF SMI	MI	CVD	Period
									PCI	Dementia	NA	Stroke	
									CABG	Mood disorders	NA	Other CVD	
									Cerebrovascular arteriography CEA	SUD	NA		
Kisely, 2009(95)	C	Canada	65,039	1,879	Mean 65.4; 70.4	44.5%	ICD-9/10, DSM-IV	ICD-9/10	Coronary angiography	Schizophrenia and other psychotic disorders	1,879	CHD	1995-2001
									PCI CABG Beta-Blockers ACE-I/ARB Clopidrogel Statins Cerebrovascular arteriography Carotid endarterectomy Ticlopidine (stroke) Warfarin (stroke) Clopidrogel (stroke)			Stroke	
Kugathasan, 2018(96)	C	Denmark	105,018	684	Mean 57.3; 61.0	29.6%	ICD-8/10	ICD-8/10	PCI	Schizophrenia	684	AMI	1995-2015
									Aspirin/clopidogrel Vitamin K antagonist Beta-blockers ACE-I Statins				
Kurdyak, 2012(97)	C	Canada	71,668	842	Mean 66.1; 67.7	37.0%	ICD-9/10, DSM-IV	ICD-9	Evidence-based treatments	Schizophrenia	842	AMI	2002-2006
									Cardiologist visit post discharge				
Lahti, 2012(98)	C	Finland	10,915	204	Range 0-60	47.7%	ICD-8/9/10	ICD-8/9/10	Treatment with medications	Schizophrenia	204	CHD	1944-2004
Laursen, 2009(99)	C	Denmark	571,068	4,997	Range 40-80	NA	ICD-8/10	ICD-8/10	PCI	BD	NA	CHD	1994-2007
									CABG	Schizophrenia Schizoaffective Disorder	NA NA		
Laursen, 2014(100)	C	Denmark	1,061,532	NA	36.1	NA	ICD-8/10	ICD-8/10	Aspiring/Clopidogrel	BD	NA	CHD	1998-2008
									Statins ACE-I/ARB Ca++ anatagonist Beta-blocker Diuretics Other antihypertensives	Schizophrenia Others	NA NA	CBVD	

Author, year	Design	Country	N tot	N MI	Age	F%	MI diagnosis	CVD Diagnosis	Screening Treatment	TYPE OF SMI	MI	CVD	Period
									Others				
Lawrence, 2003(101)	C	Australia	23,900	1,807	NA	NA	ICD-9	ICD-9	CABG	MDD	NA	AMI	1980-1988
									Removal of coronary artery obstructions	BD	NA	CHD	
										Schizophrenia and other psychotic disorders	NA		
										Affective disorders	NA		
										Substance induced psychoses	NA		
										Other psychiatric disorder	NA		
Li, 2013(102)	C	US	102,783	28,888	Mean 79.9	49.5%	ICD-9	ICD-9	Invasive procedure	Psychiatric disorders (non SUD)	26,497	AMI	2007
										SUD	1,223		
										Dual diagnosis	1,168		
Manderbacka, 2012(103)	C	Finland	533,451	164,999	40+	NA	ICD-10	ICD-10	PCI	Schizophrenia spectrum disorders	67,659	CHD	1998-2009
									CABG	Mood disorders	50,135		
										SUD	47,205		
Mansuri, 2016 (S103)(104)	C	US	4,320,304	371,546	NA	NA	ICD-9	ICD-9	IVT	MDD	371,546	Stroke	2002-2012
Mansuri, 2016 (S323)(105)	C	US	4,320,304	116,648	NA	NA	ICD-9	ICD-9	IVT	Schizophrenia	116,648	Stroke	2002-2012
McGinty, 2012(106)	C	US	633	137	Mean 54.1; 51.7	61.5%	ICD-9	ICD-9	Evidence-based treatments	Psychiatric disorders	137	AMI	1994-2004
									Beta-blockers				
									Statins				
									ACE-I/ARB				
									Coronary angiography				
									PCI				
									CABG				
Mohamed, 2019(107)	C	U.S.	6,738,757	439,544	NA	NA	ICD-9	ICD-9	PCI	Schizophrenia	23,582	AMI	2004-2014
									Coronary angiography	Other non organic psychosis	22,359		
										BD	41,362		
										MDD	352,241		
Murugiah, 2012(108)	C	US	1,196,698	4,648	Mean 67.6	40.2%	ICD-9	ICD-9	PCI	Schizophrenia	4,648	AMI	2000-2008
									CABG				
Petersen, 2003(109)	C	US	4,340	859	Mean 63; 66.7	0%	ICD-9	ICD-9	Coronary angiography	BD	NA	AMI	1994-1995
									PCI	MDD	NA		
									CABG	PTSD	NA		
									IVT	Schizophrenia and other psychotic disorders	NA		

Author, year	Design	Country	N tot	N MI	Age	F%	MI diagnosis	CVD Diagnosis	Screening Treatment	TYPE OF SMI	MI	CVD	Period
									Beta-blockers ACE-I Aspirin	SUD	NA		
Plomondon, 2007(110)	C	US	14,194	2,623	Mean 64; 69.6	2.7%	ICD-9	ICD-9	Coronary angiography PCI CABG ACE-I/ARB Aspirin Beta-blockers	Anxiety disorders Mood disorders Personality disorders Schizophrenia	1,718 1,235 307 406	ACS	2003-2005
Rathore, 2008(111)	C	US	53,314	9,063	Mean 78.1; 79.8	61.1%	ICD-9	ICD-9	Echocardiography ACE-I/ARB	Psychiatric disorders	9,063	HF	1998-2001
Schulman-Marcus, 2016(112)	C	US	3,058,697	29,503	Mean 65.1	38.3%	ICD-9	ICD-9	Revascularization PCI CABG	Schizophrenia BD Dual diagnosis	12,590 15,679 1,234	AMI	2003-2012
Smith, 2013(113)	C	UK	81,155	170	Mean 48.0	60.1%	ICD-9	ICD-9	Statin Any antihypertensive Aspirin or clopidogrel	BD	170	CHD HF Stroke TIA PVD	2007
Swardfager, 2011(114)	C	US	195	43	Mean 64.5	20.5%	DSM-IV	NA	Cardiac rehabilitation	MDD	43	CHD	2006-2006
Swildens, 2016(115)	C	Netherlands	66,620	4,770	Mean 47.5	39.9%	DSM-IV	ICD-10	Treatment	Schizophrenia and other psychotic disorders	4,770	CVD	2007-2009
Woodhead, 2016(116)	CS	UK	274,725	4,056	Range 16-75	50.7%	ICD-9/10	ICD-9/10	Beta-blockers ACEI/ARB Antiplatelet/anticoagulant Statin Quadruple therapy	Schizophrenia and other psychotic disorders BD Other non organic psychosis	1,721 716 773	CHD HF Stroke TIA	2012-2013
Wu, 2013(117)	C	Taiwan	3,361	834	Mean 64.2	37.8%	ICD-9	ICD-9	Coronary angiography PCI CABG	BD Schizophrenia	243 591	AMI	1996-2007
Young, 2000(118)	C	US	354,195	25,237	NA	NA	ICD-9	ICD-9	Coronary angiography PCI CABG	Psychiatric disorders	25,237	AMI	1998

Legend. ACE-I, angiotensin converting enzyme inhibitors; ACS, acute coronary syndrome; AMI, acute myocardial infarction; AR, arrhythmia; ARB, angiotensin receptor blockers; BD, bipolar disorder; C, cohort; CAS, carotid artery stenting; CBVD, cerebrovascular disease; CC, case-control; CEA, carotid endarterectomy; CS, cross-sectional;

ECG, electrocardiography; HF, heart failure; PCD, pulmonary circulation disease; PCI, percutaneous coronary intervention; PVD, peripheral vascular disease; TIA, transient ischemic attack; US, ultrasound.

eTable 5. Quality of included case-control and cohort studies, according to Newcastle-Ottawa scale.(119)

Author, year	Selection				Comparability	Exposure (case-control) / Outcome (cohort)			
	Case-control studies								
	Case definition	*Representativeness*	*Control Selection*	*Control Definition*	*Comparability*	*Ascertainment*	*Same ascertainment case control*	*No response rate*	*TOT*
Hippisley-Cox, 2007(91)	1	1	1	0	2	1	1	1	8
Schulman-Marcus, 2016(112)	0	1	1	1	2	1	1	1	8
Woodhead, 2016(116)	0	1	1	1	2	1	0	1	7
	Cohort studies								
	Representativness	*Selection non exposed cohort*	*Ascerteinment of exposure*	*Demonstration no outcome baseline*	*Comparability*	*Assessement of outcome*	*Follow-up long enough*	*Adequacy follow-up cohort*	TOT
Abrams, 2009(72)	1	1	1	1	2	1	1	1	9
Attar, 2017(73)	1	1	1	1	1	1	1	1	8
Attar, 2020(74)	1	1	1	0	2	1	1	1	8
Azevedo da Silva, 2014(75)	1	1	1	1	1	1	1	1	8
Barcella, 2019(76)	1	1	0	1	2	1	1	1	8
Blecker, 2010(77)	0	1	0	1	2	1	1	1	7
Bongiorno, 2018(78)	1	1	1	1	2	1	1	1	9
Bongiorno, 2019(79)	1	1	1	1	2	1	0	0	7
Bresee, 2012(80)	1	1	0	0	1	1	1	1	6
Campi, 2017(81)	1	1	1	1	2	1	1	1	9
Chang, 2020(82)	1	1	0	1	1	1	1	1	7
Desai, 2002(83)	0	1	1	1	1	1	0	1	6
Druss, 2000(84)	0	1	1	1	2	1	1	1	7
Druss, 2001(85)	0	1	1	1	2	1	0	0	6
Gal, 2016(86)	1	1	1	0	2	1	1	1	8
Gal, 2017(87)	1	1	1	0	1	1	1	1	7
Hauck,2020(88)	1	1	1	1	2	1	1	1	9
Heiberg, 2019(89)	1	1	1	1	2	1	1	1	9
Heiberg, 2020(90)	1	1	1	1	2	1	0	1	8
Jacobsen, 2017 (92)	1	1	1	1	2	1	1	1	9
Jones, 2005(93)	1	1	1	1	1	1	1	1	8
Kisely, 2007(94)	1	1	1	1	1	1	1	1	8
Kisely, 2009(95)	1	1	1	1	2	1	1	1	9
Kugathasan, 2018(96)	1	1	1	1	2	1	1	1	9
Kurdyak, 2012(97)	1	1	1	0	2	1	1	1	8
Lahti, 2012(98)	1	1	1	0	2	1	1	0	7
Laursen, 2009(99)	1	1	1	1	1	1	1	1	8
Laursen, 2014(100)	1	1	1	0	2	1	1	1	8
Lawrence, 2003(101)	1	1	1	1	1	1	1	1	8
Li, 2013(102)	1	1	1	0	2	1	0	1	7
Manderbacka, 2012(103)	1	1	1	0	1	1	1	1	7
Mansuri, 2016(104)	1	1	0	1	1	1	1	1	7
Mansuri, 2016(105)	1	1	1	1	1	1	1	1	8
McGinty, 2012(106)	0	1	0	1	2	1	1	1	7

Mohamed, 2019(107)	1	1	1	1	1	1	1	1	8
Murugiah, 2012(108)	1	1	1	0	1	1	1	1	7
Petersen, 2003(109)	0	1	1	1	2	1	1	1	8
Plomondon, 2007(110)	1	0	1	1	1	1	1	1	7
Rathore, 2008(111)	1	1	1	1	2	1	1	1	9
Smith, 2013(113)	1	1	0	0	2	1	0	0	5
Swardfager, 2011(114)	0	1	1	0	1	1	1	0	5
Swildens, 2016(115)	1	1	1	0	2	1	1	1	9
Wu, 2013(117)	1	1	1	1	2	1	1	1	9
Young, 2000(118)	1	1	0	1	1	1	0	0	5

eTable 6. Country subgroup analyses on screening/monitoring and treatment of any and specific cardiovascular diseases.

Country	Cardiovascular disease	Mental disorder	Publication/samples	OR	95%CI		I2	Subgroup comparison
Any cardiovascular disease								
Australia	Any	Any	1/6	0.838	0.774	0.908	NA	p<0.001
Canada	Any	Any	5/5	0.607	0.543	0.677	35.160	
Denmark	Any	Any	7/9	0.651	0.511	0.830	87.162	
Finland	Any	Any	2/4	0.893	0.868	0.919	0	
France	Any	Any	1/1	1.163	0.979	1.381	NA	
Hong-Kong	Any	Any	1/1	0.593	0.495	0.723	NA	
Israel	Any	Any	2/3	0.757	0.598	0.959	0.023	
Netherlands	Any	Any	1/1	0.931	0.835	1.037	NA	
Norway	Any	Any	2/4	0.701	0.593	0.829	0	
Taiwan	Any	Any	1/2	0.384	0.289	0.510	NA	
United Kingdom	Any	Any	3/4	0.758	0.513	1.122	80.295	
United States of America	Any	Any	21/50	0.809	0.768	0.852	95.557	
Acute myocardial infarction, ischemic heart disease								
Australia	CAD	Any	1/6	0.838	0.774	0.908	NA	p<0.001
Canada	CAD	Any	5/5	0.658	0.518	0.835	91.007	
Denmark	CAD	Any	5/5	0.604	0.466	0.782	72.018	
Finland	CAD	Any	2/4	0.893	0.868	0.919	0	
Hong-Kong	CAD	Any	1/1	0.593	0.485	0.723	NA	
Norway	CAD	Any	1/2	0.688	0.491	0.965	NA	
Taiwan	CAD	Any	1/2	0.384	0.289	0.510	NA	
United Kingdom	CAD	Any	3/4	0.782	0.543	1.126	77.928	
United States of America	CAD	Any	15/34	0.790	0.726	0.860	96.517	
Cerebrovascular disease, stroke, transient ischemic attack								
Canada	CBVD	Any	2/2	0.658	0.435	0.995	0	p=0.505
Norway	CBVD	Any	1/2	0.718	0.481	1.071	NA	
United Kingdom	CBVD	Any	1/1	1.040	0.640	1.690	NA	
United States of America	CBVD	Any	4/14	0.811	0.778	0.845	86.101	
Mixed cardiovascular disease								
Denmark	Mixed	Any	2/4	0.762	0.536	1.083	86.971	p<0.001
France	Mixed	Any	1/1	1.163	0.979	1.381	NA	
Israel	Mixed	Any	2/2	0.757	0.598	0.959	76.358	
Netherlands	Mixed	Any	1/1	0.931	0.835	1.037	NA	
Norway	Mixed	Any	2/4	0.698	0.588	0.828	0	
United Kingdom	Mixed	Any	1/1	0.289	0.150	0.559	NA	
United States of America	Mixed	Any	2/2	0.986	0.851	1.142	56.407	

Legend. CAD, coronary artery disease; CBVD, cerebrovascular disease; CI, confidence interval; OR, odds ratio.

eTable 7. Confounding by indication subgroup analyses on screening/monitoring and treatment of any and specific cardiovascular diseases.

Confounding by indication	Cardiovascular disease	Mental disorder	Publication/samples	OR	95%CI		I2	Subgroup comparison
Any cardiovascular disease								
No confounding by indication	Any	Any	42/84	0.758	0.726	0.792	94.020	p=0.009
Confounding by indication	Any	Any	5/6	0.926	0.802	1.069	76.889	
Acute myocardial infarction, ischemic heart disease								
No confounding by indication	CAD	Any	32/61	0.725	0.681	0.772	95.047	p=0.002
Confounding by indication	CAD	Any	2/2	1.022	0.833	1.253	5.863	
Cerebrovascular disease, stroke, transient ischemic attack								
No confounding by indication	CBVD	Any	7/18	0.810	0.779	0.843	74.371	p=0.486
Confounding by indication	CBVD	Any	1/1	0.656	0.363	1.187	NA	
Mixed cardiovascular disease								
No confounding by indication	Mixed	Any	8/12	0.760	0.648	0.890	83.247	p=0.058
Confounding by indication	Mixed	Any	3/4	0.948	0.804	1.118	88.245	

Legend. CAD, coronary artery disease; CBVD, cerebrovascular disease; CI, confidence interval; OR, odds ratio.

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