Depression: Summary table of the psychometric properties of screening tools

Contents

Beck Depression Inventory (BDI)

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Study	Identification tool	Comparator	Population	Results
Consultation				
Dutton 2004 Quality assessed: ++	BDI	DSM-IV	N=220, Age: 49 years Gender: 105 males, 115 females African American primary care patients Prevalence 63/220	**MDD** TP = 57 FP = 25 FN = 8 TN = 130

Beck Depression Inventory (BDI)				
Study	Identification tool	Comparator	Population	Results
Laprise 1998 Quality assessed: + +	BDI	DSM-III-R	N=66, age = 78 years, gender: 31 males, 35 females Nursing home residents, Canada (French) Prevalence: 27/66	BDI: **Cut off 10** Sensitivity =0.963 Specificity = 0.462
Parker 2002 Quality assessed: + +	Beck Depression Inventory for Primary Care (BDI-PC)	DSM-IV (CIDI)	N= 302 outpatients from cardiology (29.5%), respiratory (23.2%), gastroenterology (11.6%). Nephrology (14.9%), haematology (7.9%), rheumatology (5.0%), radiation oncology (4.6%), endocrinology (3.3%) Mean age = 46.5 (SD = 12.9); 63.2% male 111 (36.8%) patients had chronic physical illness; mean duration = 9 years Australia, Sydney *Prevalence of depression* – **14/160**	**Depression** **Cut-off ≥ 4 – BDI-PC** AUC – 0.848 Sensitivity - 83.3% (62.2, 100) Specificity – 67.0% (57.4, 76.7) **Optimal cut-off ≥ 5 – BDI-PC** AUC – 0.848 Sensitivity - 83.3% (62.2, 100) Specificity – 75.8% (67.0, 84.6) **Cut-off ≥ 6 - BDI-PC** AUC – 0.848 Sensitivity – 66.7% (40.0, 90.3) Specificity – 82.4% (74.6, 90.2)

Beck Depression Inventory (BDI)				
Study	Identification tool	Comparator	Population	Results
Scheinthal 2001 Quality assessed: ++	BDI-Fast Screen	DSM-IV	N=75, Age: 74 years, Gender: 33 males, 42 females US geriatric medical setting Prevalence:8/75	**Cut off 4** Sensitivity 1 Specificity 0.84
Whooley 1997 Quality assessed: +	Beck Depression Inventory – 30 item Beck Depression Inventory – 13 item	DSM-III-Diagnostic Interview Schedule (DIS)	N = 543 Patients visiting urgent care clinic Mean age = 53 (S.D. 14) Male = 97% USA, San Francisco *Prevalence of depression* – **97/536**	**Major depression** **Standard cut off ≥ 10 – BDI-30 item** AUC – 87% (82-91) Sensitivity –89% (81-95) Specificity –64% (59-68) **Cut-off ≥ 5 BDI-13 item** AUC – 86% (82-90) Sensitivity –92% (85-97) Specificity –61% (56-66)

Beck Depression Inventory (BDI)				
Study	Identification tool	Comparator	Population	Results
Wilhelm 2004 Quality assessed: +	Beck Depression Inventory (BDI)	DSM-IV	N= 212 medical out- and in-patients; 2.8% neurological disorders, 25.5% cardiopulmonary disease, 9.4% malignancy, 12.3% loss of mobility, 13.7% endocrine disorder, 3.8% infectious & inflammatory disorder, 12.3% renal disease, 20.2% other disease Age range = 16 – 91 y/o; 55.2% female *Prevalence of depression (major depression)* – **49/212**	**Major depression** **BDI** AUC – 0.85 (79, 92) Sensitivity – 91% (73, 98) Specificity – 0.62 (0.55, 0.69) **Any depression (major or minor)** **BDI** AUC – 0.86 (80, 91) Sensitivity - 0.87 (0.75, 0.94) Specificity – 0.69 (0.62, 0.76) **Affective disorder** **BDI** AUC – 0.89 (84, 94) Sensitivity - 0.89 (0.77, 0.95) Specificity – 0.72 (0.64, 0.78)
Yeung 2002 Quality assessed: +	Beck Depression Inventory – 21 item	DSM-III-R	N = 815; mean age = 50 years; 304 female, 199 male Chinese-American primary care patients; US Prevalence of depression – 53/180 *Only those who screened positive on the BDI & agreed to be interviewed for DSM and a selective sample of those who screened negative on the BDI were interviewed with a DSM*	**Depression: major depressive disorder** **Cut off ≥ 16** Sensitivity - 79% Specificity – 91% PPV – 79% NPV – 91%

Beck Depression Inventory (BDI)				
Study	Identification tool	Comparator	Population	Results
Zich 1990 Quality assessed: +	Beck Depression Inventory	DSM-III (Diagnostic Interview Schedule)	N = 31 primary care patients who completed both the BDI and DIS US, San Francisco [does not give demographic information specific to this sub-group of patients] *Prevalence of depression* – **3/31**	**Depressive disorders** **Cut-off ≥ 10 - BDI** Sensitivity – 100% Specificity – 75% **Cut-off ≥ 16 - BDI** Sensitivity – 100% Specificity – 89%
Physical health problems				
Watnick 2005 Quality assessed: +	BDI	DSM-IV	N=62, Age = 63 years, Gender: 42 males, 20 females Dialysis patients Prevalence: 12/62 (MDD)	**MDD** Cut-off 16 PPV= 0.59 NPV = 0.98 Sensitivity = 0.91 Specificity = 0.86
Craven 1988 Quality assessed: ++	BDI	DSM-III	N=99, Age = 51 years, gender: 63 males, 36 females Renal dialysis patients, Canada Prevalence: 12/99	**Depression** Cut-off 10 TP = 11 FP = 36 FN = 1 TN = 51
Hedayati 2006 Quality assessed: ++	BDI	DSM-IV	N=98 age = 57 years, gender: 54 males, 44 females Haemodialysis patients Prevalence = 26/98	**Depression** **Cut off 12** Sensitivity = 65% Specificity = 72%
Berard 1998 Quality assessed: +	BDI	DSM-IV	N=100 Age = 50 years, Gender: 13 males, 87 females Cancer patients, South Africa Prevalence: 21/100	**Depression:** Cut off 14 Sensitivity: 0.90 Specificity 0.86
Snijders 2006	BDI	DSM-IV	N=114, median age= 30 years,	**MDD**

Beck Depression Inventory (BDI)				
Study	Identification tool	Comparator	Population	Results
Quality assessed: +			gender: 79 males, 35 females Tourette's patients, UK Prevalence = 26/114	cut-off 12 Sensitivity: 0.96 Specificity 0.56
Leentjens 2000 Quality assessed: +	Beck Depression Inventory (BDI)	DSM-IV	N= 53; 100% Parkinson's Disease; mean age 67 y/o (SD= 10.5) <u>*Prevalence of depression*</u> – **12/53**	**Depression** **BDI** AUC – 0.857 **Optimal cut-off ≥ 14– BDI** Sensitivity – 67% Specificity – 88% PPV – 62% NPV – 90% **Cut-off ≥ 7 – BDI** Sensitivity –100% Specificity – 46% PPV – 35% NPV – 100% **Cut-off ≥ 8 – BDI** Sensitivity –100% Specificity – 54% PPV – 39% NPV – 96% **Cut-off ≥ 9 – BDI** Sensitivity – 92% Specificity – 59% PPV – 39% NPV – 96% **Cut-off ≥ 10 – BDI** Sensitivity – 75% Specificity – 63% PPV – 38% NPV – 90% **Cut-off ≥ 11 – BDI** Sensitivity – 75% Specificity – 71% PPV – 43% NPV – 91% **Cut-off ≥ 12 – BDI** Sensitivity – 75% Specificity – 76% PPV – 47% NPV – 91% **Cut-off ≥ 13 – BDI** Sensitivity – 67% Specificity – 78% PPV – 47% NPV – 89% **Cut-off ≥ 15 – BDI** Sensitivity – 58%

Beck Depression Inventory (BDI)				
Study	Identification tool	Comparator	Population	Results
				Specificity – 93% PPV – 70% NPV – 88% **Cut-off ≥ 16 – BDI** Sensitivity – 50% Specificity – 93% PPV – 70% NPV – 88% **Cut-off ≥ 17 – BDI** Sensitivity – 42% Specificity – 98% PPV – 83% NPV – 85%
Love 2004 Quality assessed: +	Beck Depression Inventory – Short form (BDI-SF)	DSM-IV	N= 227 women with stage IV breast cancer involved in RCT; mean age = 52 y/o (SD = 9) Australia *Prevalence of depression* – **74/227**	**Any depression (major and minor)** **AUC =** 0.82 **Cut-off ≥ 4 – BDI** Sensitivity –84% Specificity – 63% PPV – 52% NPV – 89% **Cut-off ≥ 5 – BDI** Sensitivity –73% Specificity – 74% PPV – 58% NPV – 85% **Cut-off ≥ 6 – BDI** Sensitivity –65% Specificity – 84% PPV – 66% NPV – 83% **Cut-off ≥ 7 – BDI** Sensitivity –47% Specificity – 86% PPV – 62% NPV – 77% **Cut-off ≥ 8 – BDI** Sensitivity –40% Specificity – 89% PPV – 64% NPV – 76% **Major depression** **Cut-off ≥ 4 – BDI** Sensitivity –100% Specificity – 52% PPV – 14% NPV – 100% **Cut-off ≥ 5 – BDI**

Beck Depression Inventory (BDI)				
Study	Identification tool	Comparator	Population	Results
				Sensitivity –94% Specificity – 63% PPV – 16% NPV – 99% **Cut-off ≥ 6 – BDI** Sensitivity –75% Specificity – 71% PPV – 16% NPV – 97% **Cut-off ≥ 7 – BDI** Sensitivity –69% Specificity – 79% PPV – 20% NPV – 97% **Cut-off ≥ 8 – BDI** Sensitivity –62% Specificity – 82% PPV – 21% NPV – 97%
Strik 2001 Quality assessed: + Golden 2007 Quality assessed: +	Beck Depression Inventory Beck Depression Inventory (BDI) Beck Depression Inventory-Short Form (BDI-FS)	DSM-IV (SCID-I) DSM-IV (SCID-CV)	N= 206 post myocardial infraction; 76.1% male Male – mean age = 59 (SD = 10.6); age range = 34 – 84 Female – mean age = 62.9 (SD = 10.7); age range = 38 – 78 *Prevalence of depression* – **39/206** N = 88 outpatients at a hepatitis C service Male = 74% *Prevalence of depression* – **25/88**	**Any depression (major or minor)** **Optimal cut-off ≥ 8 - BDI** AUC – 0.84 Sensitivity 83.8% Specificity – 71.7% PPV – 25.3 NPV – 98.3 **Any depression** **BDI** AUC – 0.87 (0.80-0.95) **BDI-FS** AUC – 0.85 (0.77-0.93) **Cut-off ≥ 8 - BDI** Sensitivity – 88% (69-97) Specificity – 75% (62-85) PPV – 58% (41-74) NPV – 94% (83-99) **Cut-off ≥ 4 – BDI-FS** Sensitivity – 84% (64-95) Specificity – 67% (54-78) PPV – 50% (34-66) NPV – 91% (34-66)
Patterson 2006 Quality assessed:	Beck Depression Inventory – Cognitive-	DSM-IV (SCID)	N = 310 people with HIV infection	**Major Depressive Disorder** **BDI-Cognitive-affective**

Beck Depression Inventory (BDI)				
Study	Identification tool	Comparator	Population	Results
+	Affective subscale		Male = 88% Mean age = 39.7 (S.D. 9.0) US, California *Prevalence of depression* – **52/310**	**subscale** AUC – 0.80 (S.E. 0.04) **Cut-off ≥ 10 – BDI-Cognitive-affective subscale** Sensitivity – 61% Specificity – 80% PPV – 37% NPV – 91%
Furlanetto 2005 Quality assessed: ++	Beck Depression Inventory – Short Form	ICD-10	N = 155 patients admitted to adult medical wards Male = 47% Mean age = 49.5 (S.D. 17) Brazil, Rio de Janeiro *Prevalence of depression* – **31/193**	**Moderate and severe depressive episodes** **BDI-FS** AUC – 0.984 (0.97-1.00) **Cut-off ≥ 9 – BDI-FS** Sensitivity – 100% Specificity – 82.3% PPV – 58.5% NPV – 82% **Cut-off ≥ 10– BDI-FS** Sensitivity – 100% Specificity – 83.1% PPV – 59.6% NPV – 100% **Cut-off ≥ 11 – BDI-FS** Sensitivity – 96.8% Specificity – 85.5% PPV – 62.5% NPV – 99.1% **Cut-off ≥ 12 – BDI-FS** Sensitivity – 93.5% Specificity – 89.5% PPV – 69.0% NPV – 98.2% **Cut-off ≥ 13 – BDI-FS** Sensitivity – 93.5% Specificity – 94.4% PPV – 85.3% NPV – 98.3% **Cut-off ≥ 14 – BDI-FS** Sensitivity – 93.5% Specificity – 96.0% PPV – 85.3% NPV – 98.3% **Cut-off ≥ 15 – BDI-FS** Sensitivity – 90.3% Specificity – 96.0% PPV – 84.8% NPV – 97.5%

Beck Depression Inventory (BDI)				
Study	Identification tool	Comparator	Population	Results
Lincoln 2003 Quality assessed: +	Beck Depression Inventory	DSM-III-R /ICD-10	N=143 who had a stroke, 52% male, mean age 66 years (S.D. 13.5) *Prevalence of depression (DSM-II-R)*= **21/143** *Prevalence of depression (ICD-10)*= **12/143**	**ICD-10** **DSM-III-R** **Cut off ≥10** Sensitivity 93% 95% Specificity 24% 18% **Cut off ≥11** Sensitivity 88% 95% Specificity 28% 24% **Cut off ≥12** Sensitivity 85% 91% Specificity 37% 30% **Cut off ≥13** Sensitivity 83% 91% Specificity 44% 36% **Cut off ≥14** Sensitivity 75% 91% Specificity 55% 48% **Cut off ≥15** Sensitivity 73% 91% Specificity 56% 49% **Cut off ≥16** Sensitivity 70% 91% Specificity 63% 56% **Cut off ≥17** Sensitivity 60% 76% Specificity 69% 62% **Cut off ≥18** Sensitivity 55% 71% Specificity 73% 67% **Cut off ≥19** Sensitivity 47% 67% Specificity 79% 73% **Cut off ≥20** Sensitivity 43% 62% Specificity 82% 77%
Hermanns 2006 Quality assessed: +	BDI-21 item	ICD-10	N =376; mean age = 52 years; 148 women, 228 male Diabetes patients; Germany, Merengentheim Prevalence of depression: 53/376	**Depression** **Cut off ≥ 10** Sensitivity –86.8% Specificity – 81.4% PPV – 43.4% NPV – 97.4% AUC – 0.80
Aben 2002	BDI – 21 item	DSM-IV	N = 202 (N=171 completed	**Depression: major**

Beck Depression Inventory (BDI)				
Study	Identification tool	Comparator	Population	Results
Quality assessed: +			BDI); mean age = 68 years; 91 female, 111 male Stroke patients; Netherlands, Maastricht Prevalence of major and minor depression – 51/202	**depressive and minor disorder (*also gives results from major depressive disorder only)*** **Standard cut off ≥ 10** Sensitivity – 77.1% Specificity – 65.4% PPV – 37.5% NPV – 91.4% AUC – 0.79
Community				
Stukenberg1990 Quality assessed: +	Beck Depression Inventory – Short from (BDI - SF)	DSM-III-R (SCID)	N=177 community dwelling adults, over 55 years Mean age = 67.4 (SD=7.20yrs) Age range 56-88years 33% male *Prevalence of depression (any)*– **27/178**	**Any depression** **BDI** AUC – 0.82(SE .06) **Mild Depression** **Optimal cut-off≥ 5 - BDI-SF** Sensitivity – 0.71 Specificity – 0.83 PPV – 74% **Moderate Depression** **Optimal cut-off≥ 8 - BDI-SF** Sensitivity – 0.59 Specificity – 0.93 PPV – 88% **Severe Depression –** **Optimal cut-off≥ 16 - BDI-SF** Sensitivity – 0.29 Specificity – 0.99 PPV – 99%
Viinamaki 1995 Quality assessed: +	Beck Depression Inventory- 13 item (BDI-13)	DSM-III-R	N=55 Mean age: 48 years Participants recruited from a wood factory *Prevalence of depression* – **23/55**	**Depression** **Cut off 8/9** Sensitivity - 61% Specificity- 78% PPV – 67% NPV- 74% **Standard cut off ≥ 10** Sensitivity - 45% Specificity- 84% PPV – 67% NPV- 68% **Cut off 10/11**

Beck Depression Inventory (BDI)				
Study	Identification tool	Comparator	Population	Results
				Sensitivity - 39% Specificity- 88% PPV – 69% NPV- 67%

Center for Epidemiological Studies-Depression Scale (CES-D)

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	Identification tool	Comparator	Population	Results
Consultation				
Robison 2002 Quality assessed: +	CES-D	CIDI	N=303 Age = 61 years gender: 88 males, 215 females Primary care, Hispanic population in US Prevalence: 67/303	Sensitivity = 0.73 Specificity = 0.72
Schein 1997 Quality assessed: +	CES-D	DSM-III-R	N=76, Age = 70 years Gender= 41 males, 35 females US, Medically ill inpatients Prevalence: 26/76	**Depression** Sensitivity 0.73 Specificity 0.84 **Major Depression** Sensitivity 0.90 Specificity 0.84
Thomas 2001 Quality assessed: +	CES-D	DSM-IV	N= 179 women Mean age: 44 years Participants were all low income women attending primary care clinics *Prevalence of depression* – **9/179**	**Major depressive disorder** **AUC** – 0.89 (SE = .209) **Cut off ≥ 16** Sensitivity –95% Specificity –70% PPV – 28.4% NPV – 99.1% AUC – **Cut off ≥ 34** Sensitivity –45% Specificity –95% PPV – 52.9% NPV – 93.2%
Watson 2004 Quality assessed: +	CES-D	DSM-IV	N = 84 Age over 70 and residing in two Continuing Care Retirement Communities in US. 26% male, mean age 82 *Prevalence of depression* – **10/78**	**Major Depression** **CES-D** **Standard cut-off ≥ 16** Sensitivity –60% (50, 70) Specificity –89% (82, 96) PPV – 43% NPV – 94%

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	Identification tool	Comparator	Population	Results
				AUC – 0.0.88 **GDS-30 Alternative cut-offs** **Cut off ≥ 6** Sensitivity – 100% Specificity - 54% **Cut off ≥ 7** Sensitivity – 90% Specificity - 60% **Cut off ≥ 8** Sensitivity – 90% Specificity - 68% **Cut off ≥ 9** Sensitivity – 90% Specificity - 69% **Cut off ≥ 10** Sensitivity – 90% Specificity - 72% **Cut off ≥ 11** Sensitivity – 80% Specificity - 77% **Cut off ≥ 12** Sensitivity – 80% Specificity - 78% ROC analysis – captured 80% of cases **Cut off ≥ 13** Sensitivity – 70% Specificity - 81% **Cut off ≥ 14** Sensitivity – 70% Specificity - 86% **Cut off ≥ 15** Sensitivity – 70% Specificity - 88% **Cut off ≥ 16** Sensitivity – 60% Specificity - 89% **Cut off ≥ 17** Sensitivity – 60% Specificity - 93%

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	Identification tool	Comparator	Population	Results
				Cut off ≥ 18 Sensitivity – 50% Specificity - 97% **Cut off ≥ 21** Sensitivity – 40% Specificity - 99% **Minor depression** **CES-D** **Standard cut-off ≥ 16** Sensitivity –50% (39, 61) Specificity –86% (79.93) PPV – 21% NPV – 96% AUC – 0.72
Whooley 1997 Quality assessed: +	CES-D	DSM-III-Diagnostic Interview Schedule (DIS)	N = 543 Patients visiting urgent care clinic Mean age = 53 (S.D. 14) Male = 97% USA, San Francisco *Prevalence of depression* – **97/536**	**Major depression** **Standard cut off ≥ 16 – CES-D** AUC – 89% (85-92) Sensitivity –93% (85-97) Specificity –69% (65-74) **Cut-off ≥ 10 -CES-D (10 item)** AUC – 87% (83-91) Sensitivity –90% (82-95) Specificity –72% (67-76)
Williams 1999 Quality assessed: +	CES-D	DSM-IV	N=296 age: 59 years, gender: 77 males, 219 females Prevalence: 36/296 US	**Depression** Sensitivity 0.88 Specificity 0.75
Zich 1990 Quality assessed: +	CES-D	DSM-III (Diagnostic Interview Schedule)	N = 31 primary care patients who completed both the BDI and DIS US, San Francisco [does not give demographic information specific to this sub-group of patients] *Prevalence of depression* – **3/31**	**Depressive disorders** **Cut-off ≥ 16 – CES-D** Sensitivity – 100% Specificity – 53%
Physical health problems				
Parikh 1988 Quality assessed: ++	Center for Epidemiological Studies-Depression Scale	DSM-III	N=80, age = 58 years gender: 40 males, 40 females Stroke patients	**Depression** TP = 48 FP = 12 FN =8 TN = 112

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	Identification tool	Comparator	Population	Results
	(CES-D)			
Hedayati 2006 Quality assessed: ++	CES-D	DSM-IV	N=98 age = 57 years, gender: 54 males, 44 females Haemodialysis patients Prevalence = 26/98	**Depression** Sensitivity = 73% Specificity = 76%
McQuillan 2003 Quality assessed: +	CES-D	DSM-IV	N= 415 Age = 58 years Gender: 71 males, 344 females US, Rheumatoid Arthritis Prevalence: 37/415	**Depression** Sensitivity 0.89 Specificity 0.24
McManus 2005 Quality assessed: +	Center for Epidemiological Studies-Depression Scale (CES-D) – 10 items	DSM-IV	N=1,024 who have CHD Mean age = 67 years Men 82% *Prevalence of depression* – **224/1024**	**Depression** ***AUC*** – 0.87 (0.84, 0.89) ***Cut off point ≥ 10*** Sensitivity – 76% Specificity – 79%
Kuptniratsaikul 2002 Quality assessed: +	CES-D	DSM-IV	N = 83; mean age = 33 years; 66 male Spinal cord injury patients; Thailand. Prevalence of depression: 20/83	**Depression: depressed mood or adjustment disorder** **Cut off ≥ 19** Sensitivity – 80.0% Specificity – 69.8% PPV – 45.7% NPV – 91.7%
Hermanns 2006 Quality assessed: +	CES-D	ICD-10	N =376; mean age = 52 years; 148 women, 228 male Diabetes patients; Germany, Merengentheim Prevalence of depression: 53/376	**Depression** **Cut off ≥ 23** Sensitivity – 79.2% Specificity – 88.8% PPV – 53.8% NPV – 96.3% AUC – 0.85
Community				
Papassotiropoulos 1999 Quality assessed: +	CES-D	ICD-10	N = 287; mean age = 76 years; 171 female, 116 Older people from the community; Germany *Prevalence of depression* = **10/287**	**Depression** **Optimal cut-off ≥ 10** Sensitivity – 75% Specificity – 72% AUC – 0.78
Suthers 2004 Quality assessed:	CES-D11	CIDI-SF	N = 1056 (used in table for analysis, 1284 included in study)	**Depression** **Standard cut-off 9**

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	Identification tool	Comparator	Population	Results
+			Community sample responding to telephone screen *Prevalence of depression =* **79/1256**	Sensitivity – 48.1% Specificity – 88.27% PPV – 21.59% NPV – 96.20%
Tuuaninen 2001 Quality assessed: +	Center for Epidemiological Studies-Depression Scale (CES-D) – Burnham Screen	DSM-IV	N=436 age: 68 years gender: all female Prevalence: 30/436 US	**Usual cut-off (0.06)** Sensitivity = 74% Specificity = 87%
Wada 2007 Quality assessed: +	CES-D	DSM-IV	N = 2219; mean age = 42 years; 351 women, 1868 male Community sample (workers in a company); Japan Prevalence of depression: 49/2219	Depression: major depressive disorder Standard cut off ≥ 16 Sensitivity – 95.1% Specificity – 85.0% PPV – 10.7% NPV – 99.9% AUC – 0.96

Depression in the Medically Ill Scale (DMI)

Depression in the medically ill				
Study	Identification tool	Comparator	Population	Results
Physical health problems				
Hilton 2006 Quality assessed: +	DMI-10 DMI-18	CIDI	N=322, Mean age = 66 years, gender: 229 males, 93 females Coronary syndrome or heart failure Prevalence: 36/322	**MDD** **DMI-10** Cut-off 6 Sensitivity = 0.80 Specificity = 0.70 **DMI-18** Cut-off 14 Sensitivity = 0.756 Specificity = 0.773
Wilhelm 2004 Quality assessed: +	DMI -10	DSM-IV	N= 212 medical out- and in-patients; 2.8% neurological disorders, 25.5% cardiopulmonary disease, 9.4% malignancy, 12.3% loss of mobility, 13.7% endocrine disorder, 3.8% infectious & inflammatory disorder, 12.3% renal disease, 20.2% other	**Major depression** **DMI** AUC – 0.85 (78, 91) Sensitivity – 87% (68, 95) Specificity – 66% (55, 69) **Any depression (major or minor)**

			disease Age range = 16 – 91 y/o; 55.2% female *Prevalence of depression (major depression)* – **49/212**	**DMI** AUC – 0.88 (83, 93) Sensitivity - 0.87 (75, 94) Specificity – 74 (67, 80) **Affective disorder** **DMI** AUC – 0.91 (87, 95) Sensitivity – 89% (77, 95) Specificity – 77% (70, 83)

Distress Thermometer

Distress Thermometer				
Study	Identification tool	Comparator	Population	Results
Physical health problems				
Akizuki 2003 Quality assessed: +	Distress Thermometer	DSM-IV	N = 275; mean age = 52 years; 164 female, 111 male Cancer patients; Japan, Tokyo and Kashiwa Prevalence of depression - 168/275	**Depression: major depression and adjustment disorder** **Standard cut off ≥ 5** Sensitivity – 84% Specificity – 61% PPV – 35% NPV – 68%
Akizuki 2005 Quality assessed: +	Distress and Impact Thermometer	DSM-IV	N = 295; mean age = 51; 164 female, 131 male Cancer patients; Japan Prevalence of major depression – 53/295	**Depression: major depressive disorder** **Optimal cut off ≥ 5 on distress score & ≥ 4 on impact score** Sensitivity – 89% Specificity – 70%

General Health Questionnaire (GHQ)

General Health Questionnaire				
Study	Identification tool	Comparator / caseness	Population	Results
Consultation				
Hahn 2006 Quality assessed: +	General Health Questionnaire – 12 (GHQ-12)	CIDI (DSM-IV/ICD-10)	N = 204 chronically ill in-patients; 5.9% cardiovascular diseases, 8.8% orthopaedic diseases, 5.4% cancer, 18.6% endocrinologic disease, 53.4% pneumological disease Mean age = 49.6; age range 18-80	**Affective disorder** (single episode or recurrent major depression, dysthymia) **Optimal cut-off ≥ 7 - GHQ** AUC – 0.779 (0.716-0.834) Sensitivity – 77.1% Specificity – 69.2% PPV – 34.2%

General Health Questionnaire				
Study	Identification tool	Comparator / caseness	Population	Results
			52% male 13 rehabilitation inpatient clinics in Germany *Prevalence of depression* – **35/204**	
Harter 2001 Quality assessed: +	General Health Questionnaire – 12 (GHQ-12	M-CIDI	N=206 Mean age = 48 years Neck and back pain (70%), arthropathies (14%), rheumatic disorders (6%), other musculoskeletal disorders (10%) *Prevalence of depression* – **10/206**	**AUC** = 0.65 (0.57, 0.72) **Cut-off ≥ 5:** Sensitivity – 75% Specificity – 51.7% PPV – 17.3%
Harter 2006 Quality assessed: +	General Health Questionnaire – 12 (GHQ-12)	M-CIDI	N= 569; 36% musculo-skeletal diseases; 29% CVD and 35% Cancer; 50% male; Mean age 54; Age range 22-83 *Prevalence of depression* – **59/130**	**Any depression** **GHQ** AUC – 0.72 (0.68, 0.76) **Cut-off ≥ 8 GHQ** Sensitivity – 52.5% Specificity – 77.9% PPV – 22.1%
Henkel 2004 Secondary paper Henkel 2003 – brief report Quality assessed: +	General Health Questionnaire 12 (GHQ-12)	CIDI – ICD-10 (and DSM-IV research criteria for minor depression)	N = 448, of which 431 had an independent clinical diagnosis, mean age 48.98 Primary care patients *Prevalence of depression (any) -* **82/431** *Prevalence of depression (major) -* **50/431** *Prevalence of depression (dysthymia disorder)* – **24/431** *Prevalence of depression (minor) -* **54/431**	**Any depression** **GHQ-12** **Standard cut-off ≥2** Sensitivity – 85% Specificity – 63% PPV – 34% NPV – 95% **Any depression according to ICD-10** **GHQ-12** AUC – 0.833 **Any depression according to ICD-10 including minor depression (per DSM-IV research criteria)** **GHQ-12** AUC – 0.817 **Types of depression according to ICD-10 and**

General Health Questionnaire				
Study	Identification tool	Comparator / caseness	Population	Results
				DSM-IV research criteria: **Major depression** AUC – 0.874 **Dysthymia disorder** AUC – 0.832 **Minor depression** AUC – 0.755
MaGPIe Group 2005 Quality assessed: + Physical health problems	General Health Questionnaire 12 (GHQ-12)	CIDI	N = 775 1151 were selected for interview, with 788 completing interviews *Prevalence of depression: 136/775*	**Depression** **Cut-off ≥3** Sensitivity – 66.3% Specificity - 71.8% PPV – 34.0% NPV – 90.7% **Cut-off ≥4** Sensitivity – 59.9% Specificity - 80.5% PPV – 40.2% NPV – 90.2% **Cut-off ≥5** Sensitivity – 53.5% Specificity - 85.1% PPV – 44.1% NPV – 89.3% **Cut-off ≥6** Sensitivity – 43.9% Specificity - 89.4% PPV – 47.4% NPV – 87.9% **Cut-off ≥7** Sensitivity – 38.2% Specificity - 92.5% PPV – 52.6% NPV – 87.3% **Cut-off ≥8** Sensitivity –29.5% Specificity - 94.5% PPV – 54.1% NPV – 86.0%

General Health Questionnaire				
Study	Identification tool	Comparator / caseness	Population	Results
Ibbotson 1994 Quality assessed: + +	General Health Questionnaire 28 (GHQ 28)	DSM-III	N=161 (no data for GHQ-28 on whole sample n=546) Disease free cancer patients, UK Prevalence 20/161	**Depression:** **Cut off 8** Sensitivity: 0.75 Specificity 0.92
Lincoln 2003 Quality assessed: + +	GHQ-28	ICD-10 DSM-III-R	N=143; 100% stroke patients; 52% men; mean age 66 Y/O (SD 13.5) N= 20 patients recruited from hospital + 123 recruited from an RCT on CBT *Prevalence of depression* (DSM-III-R)- **21/143** *Prevalence of depression* (ICD-10)- **12/143**	**Depression according to ICD-10** **Optimal cut-off ≥ 8 – GHQ** Sensitivity – 85% Specificity – 61% **Depression according to DSM-II-R** **Optimal cut-off ≥ 12 – GHQ** Sensitivity – 81% Specificity – 68%
Aydin 2001 Quality assessed: + +	General Health Questionnaire – 12 (GHQ-12) Turkish version (validated)	CIDI	N= 157 males; Recently diagnosed TB (n=42), defaulted TB (n= 380, multi drug resistant TB (n=39), COPD (n=38) *Prevalence of depression* – **8/100**	**Depression** ***Cut off 1/2*** Sensitivity – 87.5% Specificity – 79.4% ***Cut off 2/3*** Sensitivity – 87.5% Specificity – 94.1% ***Cut off 3/4*** Sensitivity – 75% Specificity – 100% ***Cut off 4/5*** Sensitivity – 75% Specificity – 100% ***Cut off 5/6*** Sensitivity – 12.5% Specificity – 100% **dTB** ***Cut off 1/2*** Sensitivity – 100% Specificity – 41.3% ***Cut off 2/3*** Sensitivity – 75% Specificity – 63.3% ***Cut off 3/4***

General Health Questionnaire				
Study	Identification tool	Comparator / caseness	Population	Results
				Sensitivity – 63.3% Specificity – 80% ***Cut off 4/5*** Sensitivity – 20% Specificity – 93.3% ***Cut off 5/6*** Sensitivity – 0% Specificity – 93.3% **MdrTB** ***Cut off 1/2*** Sensitivity – 100% Specificity – 41.3% ***Cut off 2/3*** Sensitivity – 100% Specificity – 62.1% ***Cut off 3/4*** Sensitivity – 100% Specificity – 79.3% ***Cut off 4/5*** Sensitivity – 70% Specificity – 73.1% ***Cut off 5/6*** Sensitivity – 60% Specificity – 100% **COPD** ***Cut off 1/2*** Sensitivity – 100% Specificity – 25% PPV – 54.6% NPV- 100% ***Cut off 2/3*** Sensitivity – 100% Specificity – 40% PPV – 60% NPV- 100% ***Cut off 3/4*** Sensitivity – 94.4% Specificity – 55% PPV – 65.4% NPV- 91.7%

General Health Questionnaire				
Study	Identification tool	Comparator / caseness	Population	Results
				Cut off 4/5 Sensitivity – 88.8% Specificity – 70% PPV – 72.7% NPV- 87.5% ***Cut off 5/6*** Sensitivity – 83.3% Specificity – 80% PPV – 78.9% NPV- 84.1%
Reuter 2000 Quality assessed: + Community	GHQ-12	DSM-IV	N=188, Mean age = 54 years, gender: 137 males, 51 females Cancer patients, Germany Prevalence: 14/188	**Depression:** **Cut-off 2** Sensitivity = 0.93 Specificity = 0.49
Chatuverdi 1994 Quality assessed: +	GHQ-12	ICD-9	N=100 age= 25-49 years, gender: all females Gynaecological patients, India Prevalence: 36/100	**Depression** **Optimal cut-off** Sensitivity: 1.00 Specificity: 0.78
Picardi 2005 Quality assessed: +	GHQ-12	SCID	N=141, Age = 38 years, Gender: 62 males, 79 females Dermatology patients, Italy Prevalence: 44/141 (any depression); 12/141 (MDD)	Sensitivity = 0.73 Specificity = 0.78
Community				
Costa 2006 Quality assessed: +	GHQ-12	ICD-10	N=126 age = 81 years, gender: 36 males, 90 females Elderly people, Brazil Prevalence: 65/126	Sensitivity = 0.661 Specificity = 0.623
Papassotiropoulos 1999 Quality assessed: +	GHQ-12	ICD-10	N = 287; mean age = 76 years; 171 female, 116 Older people from the community; Germany Prevalence of depression = 10/287	**Depression** **Optimal cut off ≥ 4** Sensitivity – 63% Specificity – 91% AUC – 0.794

General Health Questionnaire				
Study	Identification tool	Comparator / caseness	Population	Results
Viinamaki 1995 Quality assessed: +	General Health Questionnaire 12 (GHQ-12)	DSM-III-R	N=56 Mean age: 48 years Employers from factory *Prevalence of depression* – **23/56**	**Depression** **Cut off 2/3** Sensitivity - 70% Specificity- 75% PPV – 73% NPV- 72%

Geriatric Depression Scale (GDS)

Geriatric Depression Scale				
Study	Identification tool	Comparator/ caseness	Population	Results
Consultation				
Arthur1999 Quality assessed: +	Geriatric Depression Scale – 15 item	ICD-10 based on SCAN	N = 201 All people aged over 75 in one large GP practice list undergoing a health check. Leicester, UK *Prevalence of depression 12/201 – 6%*	**Depression** **Cut-off ≥2** Sensitivity – 100% Specificity - 49.9% PPV – 11.2% NPV – 100.0% **Cut-off ≥3** Sensitivity – 100% Specificity - 71.9% PPV – 18.4% NPV – 100.0% **Cut-off ≥4** Sensitivity – 80% Specificity - 81.6% PPV – 21.6% NPV – 98.5% **Cut-off ≥5** Sensitivity – 60.0% Specificity - 89.2% PPV – 26.1% NPV – 97.2% **Cut-off ≥6** Sensitivity – 50.0% Specificity - 93.7% PPV – 33.3% NPV – 96.7% **Cut-off ≥7**

Geriatric Depression Scale				
Study	Identification tool	Comparator/ caseness	Population	Results
				Sensitivity – 43.3% Specificity - 96.0% PPV – 40.6% NPV – 96.4%
Burke 1992 Quality assessed: +	Geriatric Depression Scale – 30 item	DSM-III-R	N = 67 cognitively intact outpatients Mean age = 77.2 (SD 6.5) Male = 34% <u>*Prevalence of depression*</u> – **16/67**	**Depression** **Cut-off ≥ 11** Sensitivity – 81% Specificity – 61% **Cut-off ≥ 14** Sensitivity – 44% Specificity – 75% **Cut-off ≥ 17** Sensitivity – 31% Specificity – 94%
D'Ath 1994 Quality assessed: +	GDS-15	GMS	N=194, Age: 74 years, Gender: 126 females, 72 males Prevalence: 67/194	**Depression** Sensitivity 91% Specificity 72%
Fernandez-San Martin 2002 Quality assessed: +	GDS	DSM-IV	N=192 age >65 years, gender: 70 males, 122 females Primary care, Spain Prevalence: 60/192 (mainly psychotic depression)	**Cut 0ff 11** Sensitivity = 0.817 Specificity = 0.68
Jongenelis 2005 Quality assessed: +	GDS	DSM-IV	N= 333, age = 79 years, gender: 104 males, 229 females Nursing home, Netherlands Prevalence: 74/333	**Cut off 11** Sensitivity = 0.85 Specificity = 0.69
Koenig 1992 Quality assessed: +	Geriatric Depression Scale	DSM-III-R	N = 109 medically ill hospitalized patients Mean age = 74 (S.D. 4.1) 100% men Mean MMSE score = 25.7 (S.D. 3.3) US, Durham <u>*Prevalence of depression*</u> – **11/109**	**Major depression** **Cut off ≥ 11 - GDS** Sensitivity – 82% Specificity - 76% PPV – 27% NPV – 97%

Geriatric Depression Scale				
Study	Identification tool	Comparator/ caseness	Population	Results
Laprise 1998 Quality assessed: +	GDS	DSM-III-R	N=66, age = 78 years, gender: 31 males, 35 females Nursing home residents, Canada (French) *Prevalence: 27/66*	**Cut off 10** Sensitivity = 0.92 Specificity = 0.513 **BDI:** Cut off 10 Sensitivity =0.963 Specificity = 0.462
Magni 1986 Quality assessed: ++	GDS	DSM-III	N = 220, age = 76 years, Gender: 111 males, 109 females Consecutive admissions to general medical ward, Italy *Prevalence of depression (MDD and dysthymia) – 67/220* *MDD only – 18/220*	**Depression** **Cut off 11** Sensitivity = 0.86 Specificity = 0.74 **Cut off 14** Sensitivity = 0.65 Specificity = 0.91
Neal 1994 Quality assessed: +	GDS GDS-15	DSM (GMS)	N=45, Age = 77years, Gender: 18 males, 27 females *Prevalence: 8/45*	**Depression** **GDS**: Sensitivity 0.74 Specificity 0.80 **GDS-15** Sensitivity 0.67 Specificity 0.80
Pomeroy 2001 Quality assessed: +	Geriatric Depression Scale –4 item scale (GDS - 4) Geriatric Depression Scale –15 item scale (GDS - 15) Geriatric Depression Scale –30 item scale (GDS - 30)	ICD-10	N = 87 patients over the age of 60 admitted to medical rehabilitation wards or attending day rehabilitation facilities; 40% male, mean age 78.4 (SD – 7.7 yrs) *Prevalence of depression* – **17/87**	**Depressive episode** **GDS-4** **Optimal cut-off ≥ 1** Sensitivity – 82.4% Specificity – 67.1% AUC – 0.80 (0.68, 0.93) PPV – 37.8% NPV – 94.0% **GDS-15** **Optimal cut-off ≥ 5** Sensitivity – 82.4% Specificity – 60.0 AUC – 0.82 (0.71, 0.93) PPV – 33.3% NPV – 93.3% **GDS-30** **Optimal cut-off ≥ 11** Sensitivity – 100% Specificity – 62.9% AUC – 0.85 (0.77, 0.94) PPV – 39.5%

Geriatric Depression Scale				
Study	Identification tool	Comparator/ caseness	Population	Results
				NPV – 100%
Rinaldi 2003 Quality assessed: +	Geriatric Depression Scale – 15 item (GDS-15) 5-item Geriatric Depression Scale (Hoyl1999) – (GDS-5)	DSM-IV	N= 181 Participants were 65yrs and older, with normal cognitive function enrolled from three settings: an acute geriatric ward (33%), a geriatric outpatient clinic (28%) and a nursing home (39%); mean age 79.4 (SD- 7.3yrs) *Prevalence of depression* – **87/181**	**Any depression** **GDS-15** Sensitivity – 0.92 (0.88, 0.96) Specificity – 0.83 (0.78, 0.88) PPV – 0.83 (0.78, 0.88) NPV – 0.92 (0.88, 0.96) AUC – 0.88 **GDS-5** Sensitivity – 0.94 (0.91, 0.98) Specificity – 0.81 (0.75, 0.87) PPV – 0.81 (0.75, 0.87) NPV – 0.94 (0.90, 0.97) AUC – 0.85
Scheinthal 2001 Quality assessed: ++	Geriatric Depression Scale – 15 item	DSM-IV	N=75, Age: 74 years, Gender: 33 males, 42 females US geriatric medical setting Prevalence:8/75	**Cut off ≥ 7** Sensitivity 1 Specificity 0.79
Van Marwijk 1995 Quality assessed: +	GDS – 30 item Also included GDS-15 and GDS-10	DSM-III	N=586 age = 65-94 years, gender: 237 males, 349 females Older people in primary care, Netherlands Prevalence: 33/586	**Cut off 10** Sensitivity = 0.55 Specificity = 0.86
Vargas 2007 Quality assessed: +	GDS	DSM-IV	N=484 age = 70 years, gender: 208 males, 276 females General Outpatient Clinic, Portugal Prevalence: 210/484	Cut off 12 Sensitivity = 0.87 Specificity = 0.73
Watson 2004 Quality assessed: +	Geriatric Depression Scale – 30 item version (GDS-30)	DSM-IV	N = 84 Age over 70 and residing in two Continuing Care Retirement Communities in US. 26% male, mean age 82 *Prevalence of depression* – **10/78**	**Major Depression** **GDS-30** **Standard cut-off ≥ 12** Sensitivity –60% (50, 70) Specificity –93% (88, 98) PPV – 55% NPV – 95% AUC – 0.88

Geriatric Depression Scale				
Study	Identification tool	Comparator/ caseness	Population	Results
				GDS-30 Alternative cut-offs **Cut off ≥ 4** Sensitivity – 100% Specificity - 42% **Cut off ≥ 5** Sensitivity – 90% Specificity - 57% **Cut off ≥ 6** Sensitivity – 80% Specificity - 68% **Cut off ≥ 7** Sensitivity – 80% Specificity - 73% **Cut off ≥ 8** Sensitivity – 88% Specificity - 77% **Cut off ≥ 9** Sensitivity – 80% Specificity - 85% ROC analysis – captured 80% of cases **Cut off ≥ 10** Sensitivity – 60% Specificity - 88% **Cut off ≥ 11** Sensitivity – 60% Specificity - 89% **Cut off ≥ 12** Sensitivity – 60% Specificity - 93% **Cut off ≥ 13** Sensitivity – 60% Specificity - 97% **Cut off ≥ 14** Sensitivity – 60% Specificity - 99% **Cut off ≥ 16** Sensitivity – 60% Specificity - 100%

Geriatric Depression Scale				
Study	Identification tool	Comparator/ caseness	Population	Results
				Minor depression **GDS-30** **Standard cut-off ≥ 12** Sensitivity –33% (23, 43) Specificity –88% (81, 95) PPV – 18% NPV – 95% AUC – 0.71
Physical health problems				
Haworth 2007 Quality assessed: + Rovner 1997 Quality assessed: +	GDS-15 GDS	DSM-IV (SCID) DSM-IV	N=88, Age = 70 years Gender: 73 males, 15 females Heart failure patients, US Prevalence: 22/88 depression 13/88 MDD N=70, Age = 77 years, Gender: 41 females, 29 males Prevalence: 27/70	**Depression** **Cut off 5 (recommended and optimal)** Sensitivity 81.8% Specificity 83.3% PPV 62.1% NPV 93.2% **Depression** Sensitivity = 63% Specificity = 77%
Tang 2004B Quality assessed: +	Geriatric Depression Scale (GDS) – Chinese version	DSM-IV	N= 127 Chinese geriatric stroke patients; 53.5% male; mean age = 75.7 (SD = 6.2) *Prevalence of depression* – **8/100**	**Any depression** **Optimal cut-off ≥ 7** AUC – 0.90 Sensitivity – 89% Specificity – 73% PPV – 37% NPV – 97%
Tang 2004A Quality assessed: +	Geriatric Depression Scale (GDS) – 15 Chinese version	DSM-III-R	N = 60 Chinese patients received rehabilitation after stroke *Prevalence of depression* = **14/60**	**Any depression** **Optimal cut-off ≥ 6** AUC – 0.758 Sensitivity – 64% Specificity – 83% PPV – 53% NPV – 88%
Weintraub 2006 Quality assessed: +	Geriatric Depression Scale (GDS) -15 items	DSM-IV	N=148 with idiopathic PD receiving specialist care Mean age = 71 years MMSE = 27	**AUC** – 0.92 (0.87, 0.93) **Cut-off 1/2** Sensitivity – 100% Specificity – 35% PPV – 30% NPV – 100% **Cut-off 2/3** Sensitivity – 97% Specificity – 51% PPV – 35%

Geriatric Depression Scale				
Study	Identification tool	Comparator/ caseness	Population	Results
				NPV – 98% **Cut-off 3/4** Sensitivity – 91% Specificity – 71% PPV – 46% NPV – 96% **Cut-off 4/5** Sensitivity – 88% Specificity – 85% PPV – 61% NPV – 96% **Cut-off 5/6** Sensitivity – 78% Specificity – 91% PPV – 69% NPV – 93% **Cut-off 6/7** Sensitivity – 66% Specificity – 97% PPV – 84% NPV – 91% **Cut-off 7/8** Sensitivity – 50% Specificity – 97% PPV – 84% NPV – 88%
Ertan 2005 Quality assessed: + Geriatric Depression Scale – 30 item (Turkish version)		DSM-IV	N – 109 patients with Parkinson's Disease Male = 67% Mean age = 66.5; age range 29-84 Turkey, Istanbul *Prevalence of depression* – **56/109**	**Depression** **Cut-off ≥ 10** Sensitivity – 89% Specificity – 62% PPV – 71% NPV – 84%
Community				
Carrete 2001 Quality assessed: +	GDS	DSM-IV (SCID)	N= 169 Mean age = 72 years gender: 57 males, 112 female Ambulatory older adults were contacted by telephone, Argentina	**Cut off 11** Sensitivity = 0.88 Specificity = 0.84

Geriatric Depression Scale				
Study	Identification tool	Comparator/ caseness	Population	Results
			Prevalence: 22/169	
Costa 2006 Quality assessed: +	GDS-30	ICD-10	N=126 age = 81 years, gender: 36 males, 90 females Older adults, Brazil Prevalence: 65/126	**GDS** Sensitivity = 0.733 Specificity = 0.654
De Craen 2003 Quality assessed: +	GDS-15	DSM-IV	N=79 median age = 87 years, gender: 24 males, 55 females Community dwelling, Netherlands	**Cut off 3** TP = 7 FP = 17 FN =1 TN =54
Rait 1999 Quality assessed: +	GDS-15	DSM-IV	N=130, Age = >60 years, Gender: no information Prevalence: 13/130	**Depression** Sensitivity 91% Specificity 72%

Hospital Anxiety and Depression Scale (HADS)

Hospital Anxiety and Depression Scale				
Study	Identification tool	Comparator/ caseness	Population	Results
Consultation				
Hahn 2006 Quality assessed: +	Hospital Anxiety Depression Scale	CIDI (DSM-IV/ICD-10)	N = 204 chronically ill in-patients; 5.9% cardiovascular diseases, 8.8% orthopaedic diseases, 5.4% cancer, 18.6% endocrinologic disease, 53.4% pneumological disease Mean age = 49.6; age range 18-80 52% male 13 rehabilitation inpatient clinics in Germany *Prevalence of depression* – **35/204**	**Affective disorder** (single episode or recurrent major depression, dysthymia) **Optimal cut-off ≥ 18 – HADS** AUC – 0.785 (0.722-0.839) Sensitivity – 71.4% Specificity – 74.6% PPV – 36.8%
Harter 2001 Quality assessed: +	Hospital Anxiety Depression Scale	M-CIDI	N=206 Mean age = 48 years Neck and back pain (70%), arthropathies (14%),	**AUC** = 0.79 (0.73, 0.85) **Cut-off ≥ 16:** Sensitivity – 78.3% Specificity – 70.6% PPV – 28.6%

Hospital Anxiety and Depression Scale				
Study	Identification tool	Comparator/ caseness	Population	Results
			rheumatic disorders (6%), other musculoskeletal disorders (10%) *Prevalence of depression* – **10/206**	
Harter 2006 Quality assessed: +	Hospital Anxiety and Depression Scale (HADS)	M-CIDI	N= 569; 36% musculo-skeletal diseases; 29% CVD and 35% Cancer; 50% male; Mean age 54; Age range 22-83 *Prevalence of depression* – **59/130**	**Any depression** **HADS** AUC – 0.82 (0.79, 0.86) **Cut-off ≥ 18– HADS** Sensitivity – 73.7% Specificity – 79.5% PPV – 30.7%
Herrero 2003 Quality assessed: +	HADS	DSM-IV (SCID)	N=385, Mean age = 38 years, gender: 204 males, 181 females General Hospital – all participants were outpatients with severe medical pathology, from neurosurgery, pulmonary, cardiology, neurology and infectious illness settings, Spain Prevalence: 87/385	Cut off 7 Sensitivity = 0.92 Specificity = 0.644
Lam 1995 Quality assessed: +	HADS	DSM-III-R	N=100, age = 69 years, gender: 44 males, 56 females Elderly primary care patients, Hong Kong Prevalence: 9/100	Sensitivity = 0.78 Specificity = 0.91
Lowe 2004A Lowe2004B – duplicate report Quality assessed: +	Hospital Anxiety and Depression Scale (HADS)	DSM-IV (SCID)	N= 501; 21% musculo-skeletal disease, 16% endocrine, nutritional & metabolic disease, 10% cardiovascular/circulatory disease, 7% gastrointestinal disease, 6% respiratory system disease; mean age = 41.7 y/o (SD = 13.8); 32.9% male 395 outpatients from Heidelberg University Medical Hospital	**Any depression** **Cut-off ≥ 7– HADS** Sensitivity – 86% (78, 91) Specificity – 70% (65, 74) **Cut-off ≥ 8– HADS** Sensitivity – 81% (73, 87) Specificity – 75% (71, 80) **Cut-off ≥ 10– HADS** Sensitivity – 75% (66, 82) Specificity – 82% (78, 86) **Major depression** **Cut-off ≥ 8– HADS**

Hospital Anxiety and Depression Scale				
Study	Identification tool	Comparator/ caseness	Population	Results
			106 patients from 12 GPs in Heidelberg *Prevalence of depression* – **66/501**	Sensitivity – 88% (78, 95) Specificity – 69% (64, 73) **Cut-off ≥ 9– HADS** Sensitivity – 85% (78, 95) Specificity – 76% (64, 73) **Cut-off ≥ 10– HADS** Sensitivity – 74% (62, 84) Specificity – 83% (79, 86)
Parker 2002 Quality assessed: +	Hospital Anxiety and Depression Scale (HADS)	DSM-IV (CIDI)	N= 302 outpatients from cardiology (29.5%), respiratory (23.2%), gastroenterology (11.6%). Nephrology (14.9%), haematology (7.9%), rheumatology (5.0%), radiation oncology (4.6%), endocrinology (3.3%) Mean age = 46.5 (SD = 12.9); 63.2% male 111 (36.8%) patients had chronic physical illness; mean duration = 9 years Australia, Sydney *Prevalence of depression* – **14/160**	**Depression** **Cut-off ≥ 2 – BDI-PC** AUC – 0.892 Sensitivity - 100% (not calculated] Specificity – 20.5% (5.5, 32.4) **Cut-off ≥ 5 – BDI-PC** AUC – 0.892 Sensitivity - 100% (not calculated] Specificity – 50.0% (35.2, 64.8) **Cut-off ≥ 6 – BDI-PC** AUC – 0.892 Sensitivity - 100% (not calculated] Specificity – 65.9% (51.9, 79.9) **Cut-off ≥ 8 – BDI-PC** AUC – 0.892 Sensitivity - 75% (32.6, 100] Specificity – 70.4% (70.4, 93.2) **Optimal cut-off ≥ 9 – BDI-PC** AUC – 0.892 Sensitivity - 75% (32.6, 100] Specificity – 70.4% (82.4, 99.4) **Cut-off ≥ 11 – BDI-PC** AUC – 0.892 Sensitivity – 50.0% (1, 99) Specificity – 93.24% (85.7 100)
Upadhyaya1997 Quality assessed: +	HADS	GMS-AGECAT	N = 72, attendees over 65years old at a medical centre (80 approached to take part in study) UK, Liverpool Age = 71.2, 37 males, 35 females *Prevalence of depression* – **20/72**	**Depression** **Optimal cut-off 8/9** Sensitivity 70% Specificity 87%
Physical health problems				

Hospital Anxiety and Depression Scale				
Study	Identification tool	Comparator/ caseness	Population	Results
Haworth 2007 Quality assessed: +	HADS	DSM-IV (SCID)	N=88, Age = 70 years Gender: 73 males, 15 females Heart failure patients, US *Prevalence*: **22/88** depression **13/88 MDD**	**Depression** **Cut off 6** Sensitivity 77.3% Specificity 89.4%
Ibbotson 1994 Quality assessed: +	HADS	DSM-III	N=513, Median Age = 50-59, Gender: 231 males, 282 females Cancer patients, UK Prevalence: 20/161	**Anxiety and Depression** **Optimal cut-off >14 – HADS** Sensitivity – 80% Specificity – 76% PPV – 41%
Berard 1998 Quality assessed: +	HADS	DSM-IV	N=100 Age = 50 years, Gender: 13 males, 87 females Cancer patients, South Africa Prevalence: 21/100	**Depression:** Cut off 8 Sensitivity: 0.71 Specificity 0.95
Hall 1999 Quality assessed: +	HADS	DSM-IV	N=266 age:<75 years, gender: all female Women with early breast cancer, UK Prevalence: 99/266	**Depression:** Cut off 8 Sensitivity: 0.333 Specificity: 0.934
Love 2004 Quality assessed: +	Hospital Anxiety and Depression Scale (HADS)	DSM-IV	N= 227 women with stage IV breast cancer involved in RCT; mean age = 52 y/o (SD = 9) Australia *Prevalence of depression* – **74/227**	**Any depression (major and minor)** **Cut-off ≥ 7– HADS** Sensitivity – 50% Specificity – 88% PPV – 67% NPV – 79% **Cut-off ≥ 8– HADS** Sensitivity – 46% Specificity – 94% PPV – 79% NPV – 78% **Cut-off ≥ 9– HADS** Sensitivity – 35% Specificity – 95% PPV – 76% NPV – 75% **Cut-off ≥ 10– HADS** Sensitivity – 24% Specificity – 96% PPV – 75%

Hospital Anxiety and Depression Scale				
Study	Identification tool	Comparator/ caseness	Population	Results
				NPV – 72% **Cut-off ≥ 11– HADS** Sensitivity – 16% Specificity – 97% PPV – 75% NPV – 71% **Major depression** **Cut-off ≥ 7– HADS** Sensitivity – 81% Specificity – 81% PPV – 24% NPV – 98% **Cut-off ≥ 8– HADS** Sensitivity – 75% Specificity – 85% PPV – 28% NPV – 98% **Cut-off ≥ 9– HADS** Sensitivity – 63% Specificity – 89% PPV – 29% NPV – 97% **Cut-off ≥ 10– HADS** Sensitivity – 50% Specificity – 92% PPV – 33% NPV – 96% **Cut-off ≥ 11– HADS** Sensitivity – 38% Specificity – 95% PPV – 37% NPV – 95%
Strik 2001 Quality assessed: +	Hospital Anxiety Depression Scale	DSM-IV (SCID-I)	N= 206 post myocardial infraction; 76.1% male Male – mean age = 59 (SD = 10.6); age range = 34 – 84 Female – mean age = 62.9 (SD = 10.7); age range = 38 – 78 *Prevalence of depression* – **39/206**	**Any depression (major or minor)** **Optimal cut-off ≥ 8 - HADS-Depression** AUC – 0.85 Sensitivity 75.0% Specificity – 77.6% PPV – 32.1% NPV – 98.4%
Tang 2004A Quality assessed: +	Hospital Anxiety Depression Scale –Chinese version	DSM-III-R	N = 100 first acute stroke patients, recruited from consecutive admissions to the Stroke Recovery Unit.	**Any depression** **Cut-off 5/6** Sensitivity – 0.88 Specificity – 0.51

Hospital Anxiety and Depression Scale				
Study	Identification tool	Comparator/ caseness	Population	Results
			Age = 74 years, 55% male *Prevalence of depression – All disorders – 17/100* *MDD only – 8/100*	PPV – 0.27 NPV – 0.96 **Cut-off 6/7** Sensitivity – 0.88 Specificity – 0.53 PPV – 0.28 NPV – 0.96 **Cut-off 7/8** Sensitivity – 0.82 Specificity – 0.58 PPV – 0.29 NPV – 0.95 **Cut-off 5/6** Sensitivity – 0.76 Specificity – 0.63 PPV – 0.30 NPV – 0.93
Tang 2004B Quality assessed: +	Hospital Anxiety Depression Scale –Chinese version	DSM-III-R	N = 60 Chinese patients received rehabilitation after stroke *Prevalence of depression* = **14/60**	**All depressive disorders** **Optimal cut-off ≥ 4** AUC – 0.838 Sensitivity - 86% Specificity – 78% PPV – 55% NPV – 93%
Walker 2007 Quality assessed: +	Hospital Anxiety Depression Scale (total; depression subscale; anxiety subscale)	SCID	N= 361 cancer patients; 69.3% breast cancer, 12.5% prostate and bladder cancer; 78.9% had no active disease present 33.5% males Outpatients in clinic in Edinburgh *Prevalence of depression* – **30/361**	**Major depressive disorder** **Optimal cut-off ≥ 7 – HADS-depression subscale** AUC – 0.93 (0.88-0.98) Sensitivity – 90% (74-97) Specificity – 88% (84-91) PPV – 40% **Optimal cut-off ≥ 9 – HADS-anxiety subscale** AUC – 0.90 (0.85-0.95) Sensitivity – 87% (70-95) Specificity – 83% (78-86) PPV – 31% **Cut-off ≥ 13 – HADS-total** Sensitivity – 90% (74-97) Specificity – 80% (75-84) PPV – 29%

Hospital Anxiety and Depression Scale				
Study	Identification tool	Comparator/ caseness	Population	Results
				Cut-off ≥ 14 – HADS-total Sensitivity – 87% (70-95) Specificity – 83% (78-86) PPV – 31% **Cut-off ≥ 15 – HADS-total** Sensitivity – 87% (70-95) Specificity – 85% (81-89) PPV – 35% **Cut-off ≥ 16 – HADS-total** Sensitivity – 80% (70-0.95) Specificity – 90% (86-93) PPV – 41% **Cut-off ≥ 17 – HADS-total** Sensitivity – 77% (59-88) Specificity – 92% (89-95) PPV – 48%
Stafford 2007 Quality assessed: ++	Hospital and Anxiety Depression Scale – Depression subscale	DSM-IV	N = 193 patients hospitalized for percutaneous transluminal coronary angioplasty or coronary artery bypass graft surgery Male = 80.8% Mean age = 64.14 (S.D. = 10.37); age range 38 – 91 Australia, Geelong *Prevalence of depression* – **54/193**	**Any depression** **HADS-Depression subscale** AUC – 0.85 (S.E. 0.03) **Cut-off ≥ 5 - HADS-Depression subscale** Sensitivity – 77.8% Specificity – 80.6% PPV – 60.9% NPV – 90.3% **Cut-off ≥ 8 - HADS-Depression subscale** Sensitivity – 38.9% Specificity – 94.2% PPV – 72.4% NPV – 79.9%
Poole 2006 Quality assessed: +	Hospital Anxiety and Depression Scale	DSM-III-R (SCID)	N = 115 patients from a Hypertrophic Cardiomyopathy clinic Male = 59.1% Median age = 43; age range = 23 – 63 England, London *Prevalence of depression* – **18/115**	**Any depression** **HADS-Anxiety subscale** AUC – 0.78 **HADS-Depression subscale** AUC – 0.94 **Cut-off ≥ 8 - HADS-Anxiety subscale** Sensitivity – 96% Specificity – 79% PPV – 74% NPV – 96% **Cut-off ≥ 8 - HADS-**

Hospital Anxiety and Depression Scale				
Study	Identification tool	Comparator/ caseness	Population	Results
				Depression subscale Sensitivity – 100% Specificity – 87% PPV – 67% NPV – 100% **Cut-off ≥ 10 - HADS-Anxiety subscale** Sensitivity – 27% Specificity – 86% PPV – 55% NPV – 65% **Cut-off ≥ 10 - HADS-Depression subscale** Sensitivity – 46% Specificity – 95% PPV – 69% NPV – 87% **Optimal cut-off ≥ 14 - HADS-total** Sensitivity – 73% Specificity – 77% PPV – 74% NPV – 75%
Golden 2007 Quality assessed: +	HADS	DSM-IV (SCID-CV)	N = 88 outpatients at a hepatitis C service Male = 74% *Prevalence of depression* – **28/88**	**Any depression** **HADS-D** AUC – 0.78 (0.68-0.88) **Cut-off ≥ 8 - HADS-D** Sensitivity – 52% (31-72) Specificity – 83% (71-91) PPV – 54 (33-74) NPV – 81% (70-90) **Cut-off ≥ 8 - HADS-A** Sensitivity – 88% (69-97) Specificity – 68% (55-79) PPV – 52 (36-68) NPV – 93% (82-99)
Reuter 2000 Quality assessed: +	HADS	DSM-IV	N=188, Mean age = 54 years, gender: 137 males, 51 females Cancer patients, Germany Prevalence: 14/188	HADS Cut-off 17 Sensitivity = 0.79 Specificity = 0.76
Aben 2002 Quality assessed: +	HADS-D	DSM-IV	N = 202 (N=176 completed HADS-D); mean age = 68 years; 91 female, 111 male	**Depression: major depressive and minor disorder (*also gives results from major depressive***

Hospital Anxiety and Depression Scale				
Study	Identification tool	Comparator/ caseness	Population	Results
			Stroke patients; Netherlands, Maastricht Prevalence of major and minor depression – 51/202	***disorder only)*** **Standard cut off ≥ 8** Sensitivity – 72.5% Specificity – 78.9% PPV – 50.9% NPV – 90.5% AUC – 0.83
Akizuki 2003 Quality assessed: +	HADS	DSM-IV	N = 275; mean age = 52 years; 164 female, 111 male Cancer patients; Japan, Tokyo and Kashiwa Prevalence of major depression and adjustment disorder - 168/275	**Depression: major depression and adjustment disorder** **Standard cut off ≥ 8** Sensitivity – 96% Specificity – 45% PPV – 30% NPV – 63%
Akizuki 2005 Quality assessed: +	HADS (total)	DSM-IV	N = 295; mean age = 51; 164 female, 131 male Cancer patients; Japan Prevalence of major depression – 53/295	**Depression: major depression** **Optimal cut off ≥ 15** Sensitivity – 77% Specificity 74%

Hamilton Depression Rating Scale (HDRS)

Hamilton Depression Rating Scale (HDRS)				
Study	Identification tool	Comparator/ caseness	Population	Results
Physical health problems				
Aben 2002 Quality assessed: +	HDRS	DSM-IV	N = 202 (N=171 completed BDI); mean age = 68 years; 91 female, 111 male Stroke patients; Netherlands, Maastricht Prevalence of major and minor depression – 51/202	**Depression: major depressive and minor disorder (*also gives results from major depressive disorder only)*** **Standard cut off ≥ 12** Sensitivity – 78.4% Specificity – 81.3% PPV – 58.8% NPV – 91.7% AUC – 0.86
Weintraub 2006 Quality assessed: +	HDRS	DSM-IV	N=148 with idiopathic PD receiving specialist care Mean age = 71 years MMSE = 27	**Optimal cut-off 9/10** Sensitivity = 0.88 Specificity = 0.78 PPV = 0.52 NPV = 0.96

Strik 2001 Quality assessed: + Community	HDRS	DSM-IV (SCID-I)	N= 206 post myocardial infraction; 76.1% male Male – mean age = 59 (SD = 10.6); age range = 34 – 84 Female – mean age = 62.9 (SD = 10.7); age range = 38 – 78 *Prevalence of depression* – **39/206**	**Any depression (major or minor)** **Optimal cut-off ≥ 12 - HDRS** AUC – 0.89 Sensitivity 76.3% Specificity – 86.0% PPV – 40.7 NPV – 99.3
Stukenberg 1990 Quality assessed: +	Hamilton Depression Rating Scale (HDRS)	DSM-III-R (SCID)	N=177 community dwelling adults, over 55 years; Mean age = 67.4 (SD=7.20) Age range 56-88years 33% male *Prevalence of depression* – **27/178**	**Any depression** **HDRS** AUC – 0.85(SE .05)

Major Depression Inventory (MDI)

Major Depression Inventory (MDI)				
Study	Identification tool	Comparator	Population	Results
Community				
Forsell 2005 Quality assessed: +	MDI	DSM-IV	N = 1093; mean age = 42 years; 638 female, 455 male Community sample; Sweden, Stockholm Prevalence of depression = 81/1093	Depression: major depressive disorder Optimal cut-off 26 Sensitivity – 61% Specificity – 85% AUC – 0.83

Montgomery-Asberg Depression Rating Scale (MADRS)

Montgomery-Asberg Depression Rating Scale (MADRS)				
Study	Identification tool	Comparator/ caseness	Population	Results
Physical health problems				
Mottram 2000	Montgomery-Asberg Depression Rating Scale	DSM-IV	N=414 mean age = 77 years, gender: 111 males, 303 males Prevalence: 330/414	**Depression** Cut off 21

	(MADRS)			Sensitivity = 0.875 Specificity = 0.991
Laska 2007 Quality assessed: + Montgomery-Asberg Depression Rating Scale (MADRS)		DSM-IV	N= 89; 100% aphasic stroke patients; 56% male; mean age = 74 y/o, age range 45-94 Aphasic stroke patients involved in a randomized placebo-controlled trial of myoclobemide *Prevalence of depression* - **7/60**	**Depression** **Cut-off ≥ 10 – MADRS** Sensitivity – 66% Specificity – 93% PPV – 29%

Patient Health Questionnaire (PHQ)

Patient Health Questionnaire				
Study	Identification tool	Comparator/ caseness	Population	Results
Consultation				
Arroll 2003 Quality assessed: +	Two screening questions from B-PHQ (1) During the past two weeks, have you often been bothered by feeling down, depressed or hopeless?; (2) During the past month, have you often been bothered by little interest or pleasure in doing things?	Composite International Diagnostic Interview (CIDI)	N=421 Median age 46 years Primary care patients *Prevalence of depression* - **29/421**	**Depression – N – 29/421** **2 items:** Sensitivity – 97% Specificity – 67% PPV – 18% **Depression only question:** Sensitivity – 86% Specificity – 72% PPV – 18% **Pleasure only question:** Sensitivity – 83% Specificity – 79% PPV – 22%
Arroll 2005 Quality assessed: +	Two screening questions: (1) during the past month have you often been bothered by feeling down, depressed or hopeless? (2) During the past month have you often been bothered by little interest or pleasure in doing things?	Composite International Diagnostic Interview	N=1025 Primary care patients *Prevalence of depression* - **29/421**	**Depression** **Help question alone –** Sensitivity – 75% (60, 85) Specificity – 94% (93, 96) **Two screening questions alone –** Sensitivity – 96% (86, 99) Specificity – 78% (76, 81) **Either screening question plus help question –** Sensitivity – 79% (65, 88) Specificity – 94% (92, 95)

Patient Health Questionnaire				
Study	Identification tool	Comparator/ caseness	Population	Results
	Help question: Is this something with which you would like help with?			
Corapcioglu 2004 Quality assessed: +	PHQ-9	DSM-IV	N=1387, Age = 29 years Gender: 857 males, 530 females Primary care, Turkey Prevalence: 267/1387 (any depression) 91/1387 (MDD)	Depression: Sensitivity = 0.76 Specificity = 0.853 MDD: Sensitivity = 0.714 Specificity = 0.919
Diez-Quevedo 2001 Quality assessed: +	PHQ-9	DSM-III-R	N=1003 Mean age = 43 years, gender: 552 males, 451 females Medical and surgical inpatients, Spain Prevalence: 263/1003 (any depression) 148/1003 (MDD)	Any depression: Sensitivity = 0.89 Specificity = 0.87 MDD: Sensitivity = 0.84 Specificity = 0.92
Eack 2006 Quality assessed: +	PHQ-9	SCID	N= 50, mean age = 39 years, gender: all female Prevalence of depression: 17/50 Women in psychiatric services seeking treatment for their children	**MDD** TP = 9 FP = 9 FN = 5 TN = 27 **Any depression** TP = 11 FP = 10 FN = 6 TN = 22
Gilbody 2007 Quality assessed: +	PHQ-9	SCID	N=96, mean age = 43 years, gender: 22 males, 74 females Prevalence of MDD = 36/96 UK	**MDD** Sensitivity = 0.917 Specificity = 0.783
Hahn 2006 Quality assessed: +	Patient Health Questionnaire - Brief	CIDI (DSM-IV/ICD-10)	N = 204 chronically ill in-patients; 5.9% cardiovascular diseases, 8.8% orthopaedic diseases, 5.4% cancer, 18.6% endocrinologic disease, 53.4% pneumological disease Mean age = 49.6; age range	**Affective disorder [**single or recurrent major depression or dysthymia) **Optimal cut-off ≥ 11- PHQ-Brief** AUC – 0.844 (0.786-0.891) Sensitivity – 80%

Patient Health Questionnaire				
Study	Identification tool	Comparator/ caseness	Population	Results
			18-80 13 rehabilitation inpatient clinics in Germany *Prevalence of depression* - **35/204**	Specificity –75.7% PPV – 40.6%
Henkel 2004 Quality assessed: + Two screening questions from B-PHQ (1) During the past two weeks, have you often been bothered by feeling down, depressed or hopeless?; (2) During the past two weeks, have you often been bothered by little interest or pleasure in doing things?		Composite International Diagnostic Interview (CIDI)	N = 448, of which 431 had an independent clinical diagnosis, (same participants as other Henkel 2004 study) mean age 48.98 Primary care patients *Prevalence of depression (any)* - **82/431** *Prevalence of depression (major)* - **50/431** *Prevalence of depression (dysthymia disorder)* – **24/431** *Prevalence of depression (minor)* - **54/431**	**Any depressive disorder** **BPHQ two item** **Cut-off ≥ 4** Sensitivity – 91.7%(82.7, 96.9) Specificity – 59.1% (53.8, 64.2) PPV – 31% (24.9, 37.7) NPV – 97.3% (94.1, 99) **Major depression** **BPHQ two item** **Cut-off ≥ 4** AUC – 0.86 (0.81, 0.92) **Dysthymia** **BPHQ two item** **Cut-off ≥ 4** AUC – 0.87 (0.80, 0.94)
Henkel 2004 Quality assessed: +	Brief Patient Health Questionnaire (B-PHQ)	CIDI – ICD-10 (and DSM-IV research criteria for minor depression)	N = 448, of which 431 had an independent clinical diagnosis, mean age 48.98 (same participants as study above) Primary care patients *Prevalence of depression (any)* - **82/431** *Prevalence of depression (major)* - **50/431** *Prevalence of depression (dysthymia disorder)* – **24/431** *Prevalence of depression (minor)* - **54/431**	**Any depression** **Any depression according to ICD-10** AUC – 0.843 **Any depression according to ICD-10 including minor depression (per DSM-IV research criteria)** AUC – 0.783 **Major depression** AUC – 0.913 **Dysthymia disorder** AUC – 0.885 **Minor depression** AUC – 0.763 **Standard cut-off ≥2 inc. 1a or 1b – B-PHQ** Sensitivity – 79%

Patient Health Questionnaire				
Study	Identification tool	Comparator/ caseness	Population	Results
				Specificity – 86% PPV – 55% NPV – 95%
Kroenke2001, Spitzer 1999, Kroenke2003, Huang 2005 – All use same participants. Kroenke2001, Huang2005 – PHQ-9 Spitzer1999, Kroenke2003 – PHQ-2 Quality assessed: +	Patient Health Questionnaire 2 item version (PHQ-2)	DSM-III-R (SCID and diagnostic questions from the PRIME-MD conducted over the telephone by mental health professionals	N = 580 (6000 in total study) The total sample screened = 6000 of these 580 had a MHP interview within 48 hours and were used in the analysis. They did not differ from the total sample on any demographic or functional item. The total sample was recruited from 5 general practices, 3 family practices and 7 obstetrics-gynecology sites) *Prevalence of depression* - **41/580**	**MDD** Sensitivity = 0.88 Specificity = 0.88 **Major Depressive disorder** **PHQ-2** **Cut-off ≥ 1** Sensitivity – 97.6% Specificity – 59.2% PPV – 15.4% **Cut-off ≥ 2** Sensitivity – 92.7% Specificity – 73.7% PPV – 21.1% **Cut-off ≥ 3** Sensitivity – 82.9% Specificity – 90.0% PPV – 38.4% **Cut-off ≥ 4** Sensitivity – 73.2% Specificity – 93.3% PPV – 45.5% **Cut-off ≥ 5** Sensitivity – 53.7% Specificity – 96.8% PPV – 56.4% **Cut-off ≥ 6** Sensitivity – 26.8% Specificity – 99.4% PPV – 78.6% **AUC** **PHQ-2** 0.93 The AUC was greater for those aged <60 (0.94 vs. 0.86) **Any Depressive disorder – N = 106/580** **PHQ-2** **Cut-off ≥ 1** Sensitivity – 90.6%

Patient Health Questionnaire				
Study	Identification tool	Comparator/ caseness	Population	Results
				Specificity – 65.4% PPV – 36.9% **Cut-off ≥ 2** Sensitivity – 82.1% Specificity – 80.4% PPV – 48.3% **Cut-off ≥ 3** Sensitivity – 62.3% Specificity – 95.4% PPV – 75.0% **Cut-off ≥ 4** Sensitivity – 50.9% Specificity – 97.9% PPV – 81.2% **Cut-off ≥ 5** Sensitivity – 31.1% Specificity – 98.7% PPV – 84.6% **Cut-off ≥ 6** Sensitivity - 12.3% Specificity – 99.8% PPV – 92.6% **AUC** **PHQ-2** 0.90 The AUC was lower for those aged <60 (0.88 vs. 0.95) **MDD** Sensitivity = 0.88 Specificity = 0.88 **Major Depressive disorder** **PHQ-9** **Cut-off ≥ 9** Sensitivity – 95% Specificity – 84% **Cut-off ≥ 10** Sensitivity – 88% Specificity – 88% **Cut-off ≥ 11** Sensitivity – 83% Specificity – 89%

Patient Health Questionnaire				
Study	Identification tool	Comparator/ caseness	Population	Results
				Cut-off ≥ 12 Sensitivity – 83% Specificity – 92% **Cut-off ≥ 13** Sensitivity – 78% Specificity – 93% **Cut-off ≥ 14** Sensitivity – 73% Specificity – 94% **Cut-off ≥ 15** Sensitivity – 68% Specificity – 95%
Lowe 2004A Lowe2004B – duplicate report Quality assessed: +	Patient Health Questionnaire (PHQ)	DSM-IV (SCID)	N= 501; medical outpatients: 21% musculo-skeletal disease, 16% endocrine, nutritional & metabolic disease, 10% cardiovascular/circulatory disease, 7% gastrointestinal disease, 6% respiratory system disease Mean age = 41.7 y/o (SD = 13.8); 32.9% male 395 outpatients from Heidelberg University Medical Hospital 106 patients from 12 GPs in Heidelberg *Prevalence of depression* - **66/501**	**Any depression** **Cut-off ≥ 9– PHQ** Sensitivity – 87% (79, 92) Specificity – 76% (72, 80) **Cut-off ≥ 10– PHQ** Sensitivity – 81% (73, 87) Specificity – 82% (78, 86) **Cut-off ≥ 11– PHQ** Sensitivity – 79% (70, 85) Specificity – 85% (81, 89) **Major depression** **Cut-off ≥ 11– PHQ** Sensitivity – 98% (92, 100) Specificity – 80% (76, 83) **Cut-off ≥ 12– PHQ** Sensitivity – 95% (87, 99) Specificity – 84% (80, 87) **Cut-off ≥ 13– PHQ** Sensitivity – 88% (78, 95) Specificity – 87% (84, 90)
Robison 2002 Quality assessed: +	PHQ-2 Whooley	CIDI	N=303 Age = 61 years gender: 88 males, 215 females Primary care, Hispanic population in US Prevalence: 67/303	Sensitivity = 0.92 Specificity = 0.44
Whooley 1997	PHQ-2 (Yes or	DSM-III-	N = 543	**Major Depression**

Patient Health Questionnaire				
Study	Identification tool	Comparator/ caseness	Population	Results
Quality assessed: +	No scale)	Diagnostic Interview Schedule (DIS)	Patients visiting urgent care clinic Mean age = 53 (S.D. 14) Male = 97% USA, San Francisco *Prevalence of depression* - **97/536**	**Two Questions:** AUC – 82% (78-86) Sensitivity – 96% (90-99) Specificity – 57% (53-62)
Physical health problems				
Mohr 2007 Quality assessed: +	PHQ-2 Whooley	DSM-IV, SCID	N = 260 Age = 51 (S.D. 10.5) Multiple Sclerosis *Prevalence of depression* – **67/260**	**Major depression** **Two Questions:** Sensitivity – 0.51 (0.38 – 0.63) Specificity – 0.98 (0.94 – 0.99)
Watnick 2005 Quality assessed: +	PHQ-9	DSM-IV	N=62, Age = 63 years, Gender: 42 males, 20 females Dialysis patients Prevalence: 12/62 (MDD)	**PHQ-9** Cut-off 10 PPV= 0.71 NPV = 0.98 Sensitivity = 0.91 Specificity = 0.92
Williams 2005 Quality assessed: +	Patient Health Questionnaire 9 (PHQ-9) Patient Health Questionnaire 2 (PHQ-2)	DSM-IV	N= 316; 100% stroke patients Post-stroke depressed patients recruited from an RCT; non-depressed stoke patients from longitudinal cohort study *Prevalence of depression* - **145/316**	**Major depression – N =145/316** **PHQ-9** AUC – 0.96 **Cut-off ≥ 10 – PHQ-9** Sensitivity – 90.6% (85.0, 96.1) Specificity – 88.6% (84.3, 92.9) **Cut-off ≥ 3 – PHQ-2** Sensitivity – 83.0% (75.9, 90.2) Specificity – 83.8% (78.8, 88.8) **Any depression** **PHQ-9** AUC – 0.96 **Cut-off ≥ 10 – PHQ-9** Sensitivity – 77.9% (71.2, 84.7) Specificity – 95.9% (92.9, 98.9) **Cut-off ≥ 3 – PHQ-2** Sensitivity – 77.9% (71.2, 84.7) Specificity – 94.7% (91.4, 90.1)

Patient Health Questionnaire				
Study	Identification tool	Comparator/ caseness	Population	Results
McManus 2005 Quality assessed: ++	Patient Health Questionnaire – 2 Two screening questions: (1) during the past month have you often been bothered by feeling down, depressed or hopeless?; (2) during the past month have you often been bothered by little interest or pleasure in doing things? Patient Health Questionnaire - 9	DSM-IV	N=1,024 who have CHD Mean age = 67 years Men 82% *Prevalence of depression* - **224/1024**	**Depression** **PHQ-2** ***AUC*** – 0.84 (0.82, 0.87) ***Cut off point ≥ 3*** Sensitivity – 39% Specificity – 92% **PHQ-9** ***AUC*** – 0.86 (0.84, 0.89) ***Cut off point ≥ 10*** Sensitivity – 54% Specificity – 90% **Depression** **AUC** – 0.84 (0.81, 0.86) **Cut off point ≥ 1** Sensitivity – 90% Specificity – 69%
Stafford 2007 Quality assessed: ++	Patient Health Questionnaire – 9 (PHQ-9)	DSM-IV	N = 193 patients hospitalized for percutaneous transluminal coronary angioplasty or coronary artery bypass graft surgery Male = 80.8% Mean age = 64.14 (S.D. = 10.37); age range 38 – 91 Australia, Geelong *Prevalence of depression* – **54/193**	**Any depression** **PHQ-9** AUC – 0.85 (S.E. 0.03) **Cut-off ≥ 5 – PHQ-9** Sensitivity – 81.5% Specificity – 80.6% PPV – 62.0% NPV – 91.8%
Picardi 2005 Quality assessed: +	PHQ-9	SCID	N=141, Age = 38 years, Gender: 62 males, 79 females Dermatology patients, Italy Prevalence: 44/141 (any depression); 12/141 (MDD)	Sensitivity= 0.55 Specificity = 0.91
Community				
Adewuya 2006 Quality assessed:	PHQ-9	Mini International Neuropsychi	N = 600, Age = 25, 301, Gender: males, 299 females	Sensitivity = 0.846 Specificity = 0.994 PPV = 0.750 NPV = 0.996

Patient Health Questionnaire				
Study	Identification tool	Comparator/ caseness	Population	Results
+		atric Interview (MINI)	Nigeria, student sample at university Prevalence: major depression – 13/600	
Han 2008 Quality assessed: +	PHQ-9	DSM-IV	N=1060, Age = >60 years Gender: No information South Korea, population based geriatric sample Prevalence: 175/1060 (any depression) 62/1060 (MDD)	Any depression: Cut-off 5 Sensitivity = 0.80 Specificity = 0.78
Li 2007 Quality assessed: +	Patient Health Questionnaire 2 (PHQ-2)	DSM-IV	N=8, 205 adults aged ≥ 65 who participated in the National Epidemiologic Survey on Alcohol and Related Conditions. Mean age = 74.1, 29.5% Male. The participants were a subset of the NESARC sample which is representative of the U.S. non -institutionalised population. *Prevalence of depression* – **323/8205**	**Depression** **PHQ-2** **Two Questions:** Sensitivity – 100% Specificity – 77% (75.8, 78.0) AUC – 0.88 (0.87, 0.89) PPV – 14.3% (12.5, 16.1) Paper further reports criterion validity of the PHQ-2 for different break downs of the population e.g. >85, Hispanic etc.

Single Question

Single Question and two-item screens				
Study	Identification tool	Comparator/ caseness	Population	Results
Consultation				
Arroll 2005 Quality assessed: +	Two screening questions: (1) during the past month have you often been bothered by feeling down, depressed or hopeless?; (2)	Composite International Diagnostic Interview	N=1025 Primary care patients *Prevalence of depression* - **29/421**	**Depression** **Help question alone –** Sensitivity – 75% (60, 85) Specificity – 94% (93, 96) **Two screening questions alone –** Sensitivity – 96% (86, 99)

Single Question and two-item screens				
Study	Identification tool	Comparator/ caseness	Population	Results
	during the past month have you often been bothered by little interest or pleasure in doing things? Help question: Is this something with which you would like help with?			Specificity – 78% (76, 81) **Either screening question plus help question –** Sensitivity – 79% (65, 88) Specificity – 94% (92, 95)
Howe 2000 Quality assessed: +	MHI-1	DSM-IV	N=100 age = 81 years, gender: 38 males 62 females. Older adults from UK primary care settings Prevalence: 30/100	**Depression:** Sensitivity = 0.67 Specificity = 0.60
Means-Christensen 2006 Quality assessed: +	Screening question – 1. Have you lost interest in things? 2. Have you felt sad, empty or depressed?	Composite International Diagnostic Interview	N= 801; 37.8% male; mean age 41.49 y/o (SD = 12.48), age range 19 -79. Primary care patients in clinic in US *Prevalence of depression* - **41/115**	**Depression** Sensitivity – 88% Specificity – 75% PPV – 19% NPV – 99%
Mohr 2007 Quality assessed: +	Two screening questions (dichotomous): 1. During the past two weeks, have you been bothered by feeling down, depressed or hopeless? 2. During the past two weeks, have you often been bothered by little interest or pleasure in doing things	DSM-IV (SCID)	N = 260 (502 patients contacted). 73% female, age = 51 Patients with MS attending the KP medical care group US, California *Prevalence of depression* – **67/260**	**Depression** **Item one only** Sensitivity – 75% Specificity – 94% PPV – 73% NPV – 91% **Item two only** Sensitivity – 75% Specificity – 94% PPV – 81% NPV – 91% **Item one and two** Sensitivity – 51% Specificity – 98% PPV – 90% NPV – 85% **Item one or two** Sensitivity – 99%

Single Question and two-item screens				
Study	Identification tool	Comparator/ caseness	Population	Results
				Specificity – 87% PPV – 72% NPV – 99%
Pomeroy 2001 Quality assessed: +	MHI-1 (Are you depressed?]	ICD-10	N = 87 patients over the age of 60 admitted to medical rehabilitation wards or attending day rehabilitation facilities; 40% male, mean age 78.4 (SD – 7.7 yrs) *Prevalence of depression* – **17/87**	**Depression** Sensitivity – 88.2% Specificity – 71.4% AUC – 0.88 (0.79-0.97) PPV – 42.9% NPV – 96.1%
Robison 2002 Quality assessed: ++	Yale-1	CIDI	N=303 Age = 61 years gender: 88 males, 215 females Primary care, Hispanic population in US Prevalence: 67/303	**Depression** Sensitivity = 0.86 Specificity = 0.42
Williams 1999 Quality assessed: +	CES-D	DSM-IV	N=291 age: 58 years, gender: 93 males, 198 females Prevalence: 40/291 US	**Depression** Sensitivity 0.85 Specificity 0.66
Physical Health Problems				
Vahter 2007 Quality assessed: +	Are you depressed?	ICD-10	N = 134 inpatients from Multiple Sclerosis Mean age = 43.8 *Prevalence of depression* – **72/77**	**Depression** Sensitivity – 81% Specificity – 89% PPV – 94% NPV – 70%
Kawase 2006 Quality assessed: +	"Are you depressed?"	DSM-IV	N = 305; mean age = 62 Cancer patients; Japan Prevalence of depression = 26/305	**Depression: major or minor depression** Standard cut-off ≥1 Sensitivity – 42% Specificity – 86%

Zung's Self-Rating Depression Scale

Zung's Self-Rating Depression Scale				
Study	Identification tool	Comparator	Population	Results
consultation				
Okimoto 1982 Quality assessed: +	Zung	DSM-III	N=55, 54 female 1 male, age= 69 years,	**Depression** TP = 13 FP = 7 FN=4 TN = 31

Physical health problems				
Leung 1998 Quality assessed: +	SDS – 20 item Quality assessed:	DSM-IV	N = 268 (N = 50 who completed DSM-IV; mean age = 54 years) Medical outpatients, patients with chronic medical diseases. Participants had to have one of the following diseases: hypertension, diabetes, cerebrovascular accident, CVD, arthritis, COPD, renal diseases (without uraemia) or chronic liver diseases; Taiwan Prevalence of depression = 3/50	**Depression:** minor depressive disorder **Cut-off ≥ 50** Sensitivity – 100% Specificity – 70.7% **Cut-off ≥ 55** Sensitivity – 66.7% Specificity – 90.2% **Cut-off ≥ 60** Sensitivity – 44.4% Specificity – 90.2%
Community				
Adalberto 2006 Quality assessed: +	SDS (20 item)	DSM-IV	N = 266; mean age = 37.4 years Community sample; Colombia, Bucaramanga Prevalence of depression = 44/266	**Depression: major depressive disorder** **Standard cut-off ≥ 40** Sensitivity – 88.6% Specificity – 74.8% PPV – 41.1% NPV – 97.1% AUC – 0.901

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