Appendix 20: Case identification included and excluded studies

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Summary tables of the psychometric properties of screening tools

Beck Depression Inventory (BDI)

Beck Depression Inventory (BDI-21)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
Consultation				
Dutton *et al.*, 2004 Quality assessed: ++	BDI-21	DSM-IV	N=220, age = 49 years, 105 male, 115 female African American primary care patients *Prevalence of depression* – **63/220**	**Major depression** True Positive = 57 False Positive = 25 False Negative = 8 True Negative = 130
Laprise & Vezina, 1998 Quality assessed: +	BDI-21	DSM-III-R	N=66, age = 78 years, 31 males, 35 females Nursing home residents, Canada (French) *Prevalence of depression* – **27/66**	**Major depression** **Cut-off 10 - BDI** Sensitivity =0.963 Specificity = 0.462
Whooley *et al.*, 1997 Quality assessed: +	BDI-30 item	DSM-III-Diagnostic Interview Schedule (DIS)	N = 543, mean age = 53 (SD = 14), 97% male Patients visiting urgent care clinic, San Francisco, US *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)
Yeung *et al.*, 2002 Quality assessed: +	BDI-21	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 and agreed to be interviewed for DSM and a selective sample of those who screened negative on the BDI were interviewed*	**Depression: major depressive disorder** **Cut-off ≥ 16** Sensitivity = 79% Specificity = 91% PPV = 79% NPV = 91%

Beck Depression Inventory (BDI-21)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
Zich *et al.*, 1990 Quality assessed: +	BDI-21	DSM-III Diagnostic Interview Schedule (DIS)	N = 31 Primary care patients who completed both the BDI and DIS, San Francisco, US [Does not give demographic information specific to this sub-group of patients] <u>*Prevalence of depression*</u> – **3/31**	**Depressive disorders** **Cut-off ≥ 10 - BDI** Sensitivity = 100% Specificity = 75% **Cut-off ≥ 16 - BDI** Sensitivity = 100% Specificity = 89%
Physical health problems				
Aben *et al.*, 2002 Quality assessed: +	BDI-21	DSM-IV	N = 202 (N=171 completed BDI), mean age = 68 years, 91 female, 111 male Stroke patients, Maastricht Netherlands <u>*Prevalence of depression*</u> – **51/202**	**Depression: major 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
Berard *et al.*, 1998 Quality assessed: +	BDI-21	DSM-IV	N = 100, age = 50 years, 13 male, 87 female Cancer patients, South Africa <u>*Prevalence of depression*</u> – **21/100**	**Depression** **Cut-off 14** Sensitivity = 0.90 Specificity = 0.86
Craven *et al.*, 1998 Quality assessed: ++	BDI-21	DSM-III	N = 99, age = 51 years, 63 male, 36 female Renal dialysis patients, Canada <u>*Prevalence of depression*</u> – **12/99**	**Depression** **Cut-off 10 – BDI-21** True Positive = 11 False Positive = 36 False Negative = 1 True Negative = 51

Beck Depression Inventory (BDI-21)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
Golden *et al.*, 2007 Quality assessed: +	BDI-21	DSM-IV (SCID-CV)	N = 88, 74% male Outpatients at a hepatitis C service *Prevalence of depression* – **25/88**	**Any depression** **BDI** AUC = 0.87 (0.80-0.95) **Cut-off ≥ 8 - BDI** Sensitivity = 88% (69-97) Specificity = 75% (62-85) PPV = 58% (41-74) NPV = 94% (83-99)
Hammer *et al.*, 2008 Quality assessed: +	BDI-21	DSM-IV (SCID)	N = 39, mean age = 57.62 years (SD = 8.86), 49% male Patients with amyotrophic lateral sclerosis (ALS) *Prevalence of depression* – **7/39**	**Major Depression** **Standard cut-off ≥11** Sensitivity = 100% (63-100) Specificity = 43% (26-62) PPV = 35% (18-56) NPV = 100% (72-100) **Optimal cut-off ≥18** AUC = 0.89 (0.79-1.0) Sensitivity = 78% (40-96) Specificity = 80% (61-92) PPV = 54% (26-80) NPV = 92 (73-99) **Any depression** **Standard cut-off ≥11** Sensitivity = 100% (63-100) Specificity = 43% (26-62) PPV = 35% (18-56) NPV = 100% (72-100) **Optimal cut-off ≥18** AUC = 0.89 (0.79-1.0) Sensitivity = 78% (40-96) Specificity = 80% (61-92) PPV = 54% (26-80) NPV = 92% (73-99)
Hedayati *et al.*, 2006 Quality assessed: ++	BDI-21	DSM-IV	N = 98, age = 57 years, 54 male, 44 female Haemodialysis patients *Prevalence of depression* – **26/98**	**Depression** **Cut-off 12** Sensitivity = 65% Specificity = 72%
Hermanns *et al.*, 2006	BDI-21	ICD-10	N = 376, mean age = 52 years, 228 male, 148 female	**Depression**

Beck Depression Inventory (BDI-21)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
Quality assessed: +			Diabetes patients, Merengentheim, Germany *Prevalence of depression* - **53/376**	**Cut-off ≥ 10** AUC = 0.80 Sensitivity = 86.8% Specificity = 81.4% PPV = 43.4% NPV = 97.4%
Leentjens *et al.*, 2000a Quality assessed: +	BDI-21	DSM-IV (SCID)	N = 53, mean age 67 years (SD = 10.5) 100% Parkinson's disease *Prevalence of depression* – **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%

Beck Depression Inventory (BDI-21)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
				PPV = 47% NPV = 91% **Cut-off ≥ 13 – BDI** Sensitivity = 67% Specificity = 78% PPV = 47% NPV = 89% **Cut-off ≥ 15 – BDI** Sensitivity = 58% 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%
Lincoln & Flannaghan, 2003 Quality assessed: +	BDI	DSM-III-R /ICD-10	N = 143, mean age 66 years (SD = 13.5), 52% male Stroke patients *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%

Beck Depression Inventory (BDI-21)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
				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%
Low *et al.*, 2007 Quality assessed: + +	BDI-21	DSM-IV (SCID-I / NP)	N = 119, mean age = 62.97 years (SD = 11.61), 75% male Patients meeting criteria for either acute MI or unstable angina pectoris, British Columbia, Canada <u>*Prevalence of depression*</u> – **7/119**	**MDD** **Cut-off ≥ 9 – BDI** Sensitivity = 100% Specificity = 72% PPV = 17% NPV = 100% **Cut-off ≥ 10 – BDI** Sensitivity = 100% Specificity = 75% PPV = 18% NPV = 100% **Cut-off ≥ 11 – BDI** Sensitivity = 83% Specificity = 76% PPV = 18% NPV = 99% **Cut-off ≥ 12 – BDI** Sensitivity = 83% Specificity = 80% PPV = 19% NPV = 99% **Standard cut-off ≥ 13 – BDI** Sensitivity = 83% Specificity = 84% PPV = 23% NPV = 99% **Optimal cut-off ≥ 14 – BDI** Sensitivity = 83% Specificity = 88%

Beck Depression Inventory (BDI-21)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
				PPV = 28% NPV = 99% **AUC =** 0.91 **Any depression** **Cut-off ≥ 9 – BDI** Sensitivity = 100% Specificity = 72% PPV = 19% NPV = 100% **Cut-off ≥ 10 – BDI** Sensitivity = 100% Specificity = 75% PPV = 21% NPV = 100% **Cut-off ≥ 11 – BDI** Sensitivity = 86% Specificity = 77% PPV = 20% NPV = 99% **Cut-off ≥ 12 – BDI** Sensitivity = 86% Specificity = 81% PPV = 23% NPV = 99% **Standard cut-off ≥ 13 – BDI** Sensitivity = 86% Specificity = 85% PPV = 27% NPV = 99% **Optimal cut-off ≥ 14 – BDI** Sensitivity = 86% Specificity = 89% PPV = 34% NPV = 99% **AUC =** 0.92
Lustman *et al.*, 1997 Quality assessed: +	BDI-21	DSM-III DIS – revised	N = 172, mean age = 48.1 years (SD = 13.6), 52% male Diabetic outpatients with poor glycaemia control, Washington, US	**Any depression** **Cut-off ≥ 8 – BDI** Sensitivity = 99% Specificity = 52% **Cut-off ≥ 10 – BDI**

Beck Depression Inventory (BDI-21)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
			Prevalence of depression – **63/172**	Sensitivity = 98% Specificity = 70% **Cut-off ≥ 12 – BDI** Sensitivity = 90% Specificity = 84% **Cut-off ≥ 14 – BDI** Sensitivity = 82% Specificity = 89% **Cut-off ≥ 16 – BDI** Sensitivity = 73% Specificity = 93% **Optimal cut-off ≥ 13 – BDI** AUC = 0.94 (0.02)
Snijders *et al.*, 2006 Quality assessed: +	BDI-21	DSM-IV	N = 114, median age = 30 years, 79 male, 35 female Tourette's patients, UK *Prevalence of depression* – **26/114**	**MDD** **Cut-off 12 – BDI-21** Sensitivity = 0.96 Specificity = 0.56
Strik *et al.*, 2001 Quality assessed: +	BDI-21	DSM-IV (SCID-I)	N = 206, male mean age = 59 years (SD = 10.6), male age range = 34–84 years, female mean age = 62.9 years (SD = 10.7), female age range = 38–78 years, 76.1% male Post-myocardial infarction patients *Prevalence of depression* – **39/206**	**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
Watnick *et al.*, 2005 Quality assessed: +	BDI-21	DSM-IV	N = 62, age = 63 years, 42 male, 20 female Dialysis patients *Prevalence of depression* – **12/62 (MDD)**	**MDD** **Cut-off 16 – BDI-21** PPV= 0.59 NPV = 0.98 Sensitivity = 0.91 Specificity = 0.86
Community				
Viinamaki *et al.*, 1995	BDI-13	DSM-III-R	N = 55, mean age = 48 years Participants recruited from a	**Depression** **Cut-off 8/9**

Beck Depression Inventory (BDI-21)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
Quality assessed: +			wood factory *Prevalence of depression* – **23/55**	Sensitivity = 61% Specificity = 78% PPV = 67% NPV = 74% **Standard cut-off ≥ 10** Sensitivity = 45% Specificity = 84% PPV = 67% NPV = 68% **Cut-off 10/11** Sensitivity = 39% Specificity = 88% PPV = 69% NPV = 67%

Beck Depression Inventory- Short Form (BDI-SF); Beck Depression Inventory- Fast Screen (BDI-FS)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
Consultation				
Parker *et al.*, 2002 Quality assessed: +	Beck Depression Inventory for Primary Care (BDI-PC)	DSM-IV (Composite International Diagnostic Interview - CIDI)	N = 302, mean age = 46.5 years (SD = 12.9), 63.2% male 111 (36.8%) patients had chronic physical illness; mean duration = 9 years 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%) 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- Short Form (BDI-SF); Beck Depression Inventory- Fast Screen (BDI-FS)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
Scheinthal *et al.*, 2001 Quality assessed: ++	BDI-Fast Screen	DSM-IV	N = 75, mean age = 74 years, 33 male, 42 female US geriatric medical setting *Prevalence of depression* – **8/75**	**Depression** **Cut-off 4** Sensitivity = 1 Specificity = 0.84
Whooley *et al.*, 1997 Quality assessed: +	BDI-13	DSM-III-Diagnostic Interview Schedule (DIS)	N = 543, mean age = 53 years (SD = 14), 97% male Patients visiting urgent care clinic, San Francisco, US *Prevalence of depression* – **97/536**	**Major depression** **Cut-off ≥ 5 BDI-13 item** AUC = 86% (82-90) Sensitivity = 92% (85-97) Specificity = 61% (56-66)
Wilhelm *et al.*, 2004 Quality assessed: +	Beck Depression Inventory for Primary Care (BDI-PC)	DSM-IV	N = 212, age range = 16–91 years, 55.2% female Medical outpatients and inpatients, 2.8% neurological disorders, 25.5% cardiopulmonary disease, 9.4% malignancy, 12.3% loss of mobility, 13.7% endocrine disorder, 3.8% infectious and inflammatory disorder1, 2.3% renal disease, 20.2% other disease *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)
Physical health problems				
Furlanetto *et al.*, 2005 Quality assessed: ++	BDI-SF	ICD-10	N = 155, mean age = 49.5 years (SD = 17), 47% male Patients admitted to adult medical wards, Rio de Janeiro, Brazil *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%

Beck Depression Inventory- Short Form (BDI-SF); Beck Depression Inventory- Fast Screen (BDI-FS)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
				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%
Golden *et al.*, 2007 Quality assessed: +	BDI-FS	DSM-IV (SCID-CV)	N = 88, 74% male Outpatients at a hepatitis C service <u>*Prevalence of depression*</u> – **25/88**	**Any depression** **BDI-FS** AUC = 0.85 (0.77-0.93) **Cut-off ≥ 4 – BDI-FS** Sensitivity = 84% (64-95) Specificity = 67% (54-78) PPV = 50% (34-66) NPV = 91% (34-66)

Beck Depression Inventory- Short Form (BDI-SF); Beck Depression Inventory- Fast Screen (BDI-FS)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
Healey *et al.*, 2008 Quality assessed: ++	BDI-SF	DSM-IV (SCID)	N = 49, mean age = 78.9 years (SD = 6.79), 43% male Stroke patients recruited from inpatient rehabilitation units *Prevalence of MDD* – **7/49** *Prevalence of minor depression* – **6/49** *Prevalence of any depression* – **13/49**	**Any depression** **Cut-off ≥ 4 – BDI-FS** Sensitivity = 62% (36-82) Specificity = 78% (62-88) PPV = 50% (28-72) NPV = 85% (69-93) **MDD** **Cut-off ≥ 4 – BDI-FS** Sensitivity = 71% (36-92) Specificity = 74% (59-85) PPV = 31% (14-56) NPV = 94% (80-98)
Love *et al.*, 2004 Quality assessed: +	BDI-SF	DSM-IV	N = 227, mean age = 52 years (SD = 9), 100% female Women with stage IV breast cancer involved in RCT, 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%

Beck Depression Inventory- Short Form (BDI-SF); Beck Depression Inventory- Fast Screen (BDI-FS)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
				Major depression **Cut-off ≥ 4 – BDI** Sensitivity =100% Specificity = 52% PPV = 14% NPV = 100% **Cut-off ≥ 5 – BDI** 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%
Patterson 2006 Quality assessed: + *Community*	Beck Depression Inventory – Cognitive-Affective subscale	DSM-IV (SCID)	N = 310, mean age = 39.7 years (SD = 9.0), male = 88% People with HIV infection, California, US *Prevalence of depression* – **52/310**	**Major depressive Disorder** **BDI-Cognitive-affective subscale** AUC = 0.80 (SE = 0.04) **Cut-off ≥ 10 – BDI-Cognitive-affective subscale** Sensitivity = 61% Specificity = 80% PPV = 37% NPV = 91%
Stukenberg *et al.*, 1990 Quality assessed: +	BDI - SF	DSM-III-R (SCID)	N = 177, mean age = 67.4 years (SD = 7.2), age range 56-88 years, 33% male Community dwelling adults,	**Any depression** **BDI** AUC = 0.82 (SE = 0.06)

Beck Depression Inventory- Short Form (BDI-SF); Beck Depression Inventory- Fast Screen (BDI-FS)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
			over 55 years *Prevalence of depression (any)*– **27/178**	**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 *et al.*, 1995 Quality assessed: +	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** 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				
Blank *et al.*, 2004 Quality assessed + Klinkman *et al.*, 1997 Quality assessed: +	CES-D CES-D	Diagnostic Interview Schedule (DIS) DSM-III-R	N = 360, participants were recruited from primary care (N=125), general hospitals (N=150) and nursing home (N=85) settings (analysis presented separately for each group). All participants were aged >60 years, mean age = 77 years, 37% male *Prevalence of major depression* – **9%** *Prevalence of any depression* – **16%** *Prevalence of major depression in primary care* – **11%** *Prevalence of major depression in hospital* – **8%** *Prevalence of major depression in nursing homes* – **9%** N = 425 weighted sub-sample of 1580 people attending primary care, mean age = 39.6 years, 23.3% male *Prevalence of depression* – **57/425**	**Major depression** **Primary care sample** **CES-D** **Cut-off ≥16** Sensitivity = 79% (51-94) Specificity = 75% (71-77) AUC = 0.86 (0.77-0.95) **Cut-off ≥20 – recommended** Sensitivity = 79% (51-94) Specificity = 80% (77-82) **Nursing Home sample** **CES-D** **Cut-off ≥16** Sensitivity = 71% (32-95) Specificity = 85% (81-87) AUC = 0.82 (0.60- 1.03) **Cut-off ≥14 – recommended** Sensitivity = 86% (44-99) Specificity = 78% (74-79) **Hospital sample** **CES-D** **Cut-off ≥16** Sensitivity = 75% (44-93) Specificity = 76% (73-78) AUC = 0.91 (0.84- 0.98) **Cut-off ≥14 – recommended** Sensitivity = 100% (70-100) Specificity = 70% (62-78) **Depression** **Cut-off ≥ 16 – CES-D** Sensitivity = 0.807 Specificity = 0.717 PPV = 0.307 **Cut-off ≥ 22 – CES-D** Sensitivity = 0.614

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
				Specificity = 0.848 PPV = 0.385
Robison *et al.*, 2002 Quality assessed: +	CES-D	CIDI	N=303, mean age = 61 years, 88 male, 215 female Primary care, Hispanic population in US *Prevalence of depression* - **67/303**	**Depression** **Standard cut-off – CES-D** Sensitivity = 0.73 Specificity = 0.72
Schein & Koenig, 1997 Quality assessed: +	CES-D	DSM-III-R	N = 76, age = 70 years, 41 male, 35 female US, medically ill inpatients *Prevalence of depression* – **26/76**	**Depression** Sensitivity = 0.73 Specificity = 0.84 **Major depression** Sensitivity = 0.90 Specificity = 0.84
Thomas *et al.*, 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 = 0.209) **Cut-off ≥ 16** Sensitivity = 95% Specificity = 70% PPV = 28.4% NPV = 99.1% **Cut-off ≥ 34** Sensitivity = 45% Specificity = 95% PPV = 52.9% NPV = 93.2%
Watson *et al.*, 2004 Quality assessed: +	CES-D	DSM-IV	N = 84, age = > 70, mean age 82, 26% male, Participants residing in two Continuing Care Retirement Communities in US *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% AUC = 0.88 **GDS-30 Alternative cut-offs** **Cut-off ≥ 6** Sensitivity = 100% Specificity = 54%

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
				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% **Cut-off ≥ 18** Sensitivity = 50% Specificity = 97% **Cut-off ≥ 21** Sensitivity = 40%

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
				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 *et al.*, 1997 Quality assessed: +	CES-D	DSM-III-Diagnostic Interview Schedule (DIS)	N = 543, mean age = 53 (SD = 14), 97% male Patients visiting urgent care clinic, San Francisco, US *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 *et al.*, 1999 Quality assessed: +	CES-D	DSM-IV	N = 296, age = 59 years, 77 male, 219 female US *Prevalence of depression* – **36/296**	**Depression** Sensitivity = 0.88 Specificity = 0.75
Zich *et al.*, 1990 Quality assessed: +	CES-D	DSM-III (Diagnostic Interview Schedule)	N = 31 Primary care patients who completed both the BDI and DIS, San Francisco, US [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				
Agrell & Dehlin, 1989 Quality assessed: +	CES-D	Psychiatric interview	N = 40, mean age = 80 years, 45% male Adults attending an outpatient clinic following a	**Depression** **Recommended cut-off ≥ 20 – CES-D** Sensitivity = 56% Specificity = 91%

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
			stroke. *Prevalence of depression* – **17/40**	PPV = 82% NPV = 75%
Hedayati *et al.*, 2006 Quality assessed: ++	CES-D	DSM-IV	N = 98, mean age = 57 years, 54 male, 44 female Haemodialysis patients *Prevalence of depression* – **26/98**	**Depression** Sensitivity = 73% Specificity = 76%
Hermanns *et al.*, 2006 Quality assessed: +	CES-D	ICD-10	N =376, mean age = 52 years, 228 male, 148 female Diabetes patients, Merengentheim, Germany, *Prevalence of depression* – **53/376**	**Depression** **Cut-off ≥ 23** Sensitivity = 79.2% Specificity = 88.8% PPV = 53.8% NPV = 96.3% AUC = 0.85
Kuptniratsaikul *et al.*, 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%
McManus *et al.*, 2005 Quality assessed: +	CES-D– 10 items	DSM-IV	N = 1024, mean age = 67 years, 82% men People with coronary heart disease *Prevalence of depression* – **224/1024**	**Depression** AUC = 0.87 (0.84, 0.89) **Cut-off point ≥ 10** Sensitivity = 76% Specificity = 79%
McQuillan *et al.*, 2003 Quality assessed: +	CES-D	DSM-IV	N = 415, age = 58 years, 71 male, 344 female Rheumatoid arthritis, US *Prevalence of depression* – **37/415**	**Depression** Sensitivity = 0.89 Specificity = 0.24

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
Parikh *et al.*, 1988 Quality assessed: ++	CES-D	DSM-III	N = 80, mean age = 58 years, 40 male, 40 female Stroke patients	**Depression** **Standard cut-off – CES-D** True Positive = 48 False Positive = 12 False Negative =8 True Negative = 112
Community				
Papassotiro-poulos & Heun, 1999 Quality assessed: +	CES-D	ICD-10	N = 287, mean age = 76 years, 116 male, 171 female Older people from the community, Germany *Prevalence of depression* – **10/287**	**Depression** **Optimal cut-off ≥ 10** Sensitivity = 75% Specificity = 72% AUC = 0.78
Sanchez-Garcia *et al.*, *2008* Quality assessed: ++	GDS-30	DSM-IV	N =534, mean age = 71.5 years (SD = 7.0), 32% male Older adults receiving IMSS, living in Mexico City, 206 individuals randomly selected for a clinical assessment. *Prevalence of major depression* – **19/206** *Prevalence of any depression* – **62/206**	**Any depression** **Standard cut-off CES-D** Sensitivity = 82.0% (81.3-82.7) Specificity = 49.2% (48.7-49.6) PPV = 49.6% (49.1-50.0) NPV = 81.8% (81.1-88.5)
Suthers *et al.*, 2004 Quality assessed: +	CES-D11	CIDI-SF	N = 1056 (used in table for analysis, 1284 included in study) Community sample responding to telephone screen *Prevalence of depression* – **79/1256**	**Depression** **Standard cut-off 9** Sensitivity = 48.1% Specificity = 88.27% PPV = 21.59% NPV = 96.20%
Tuuaninen *et al.*, 2001 Quality assessed: +	CES-D– Burnham Screen	DSM-IV	N = 436, mean age 68 years, 100% female US *Prevalence of depression* – **30/436**	**Usual cut-off (0.06)** Sensitivity = 74% Specificity = 87%

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
Wada *et al.*, 2007 Quality assessed: +	CES-D	DSM-IV	N = 2219; mean age = 42 years, 351 female, 1868 male Community sample (workers in a company), Japan *Prevalence of depression* – **49/2219**	**Depression: major depressive disorder** **Standard cut-off ≥ 16- CES-D** 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, 229 male, 93 female Coronary syndrome or heart failure *Prevalence of depression* – **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 *et al.*, 2004 Quality assessed: +	DMI -10	DSM-IV	N= 212, age range = 16–91 years, 55.2% female Medical outpatients and inpatients, 2.8% neurological disorders, 25.5% cardiopulmonary disease, 9.4% malignancy, 12.3% loss of mobility, 13.7% endocrine disorder, 3.8% infectious and inflammatory disorder, 12.3% renal disease, 20.2% other disease *Prevalence of depression (major depression)* – **49/212**	**Major depression** **DMI** AUC = 0.85 (78, 91) Sensitivity = 87% (68, 95) Specificity = 66% (55, 69) **Any depression (major or minor)** **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 *et al.*, 2003 Quality assessed: +	Distress Thermometer	DSM-IV	N = 275, mean age = 52 years, 164 female, 111 male Cancer patients, Tokyo and Kashiwa, Japan *Prevalence of depression* – **168/275**	**Depression: major depression and adjustment disorder** **Standard cut-off ≥ 5** Sensitivity = 84% Specificity = 61% PPV = 35% NPV = 68%
Akizuki *et al.*, 2005 Quality assessed: +	Distress Impact Thermometer	DSM-IV	N = 295, mean age = 51 years, 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-12				
Study	**Identification tool**	**Comparator / caseness**	**Population**	**Results**
Consultation				
Evans & Katona, 1993 Quality assessed: +	GHQ-12	Geriatric Mental State (GMS)	N = 408, mean age of total sample = 73 years (SD = 8.4), 38% male N = 136 randomly selected for analysis of GHQ Older adults attending primary care, London *Prevalence of depression* – **52/136**	**Depression** **GHQ** Sensitivity = 0.7692 Specificity = 0.7619
Goldberg *et al.*, 1997 Quality assessed: +	GHQ-12; GHQ-28	CIDI (DSM-IV/ICD-10)	N = 5438 Consecutive primary care patients in 15 countries.	**Common mental health problems** **GHQ-12**

General Health Questionnaire-12				
Study	**Identification tool**	**Comparator / caseness**	**Population**	**Results**
				Ankara – threshold 1/2: Sensitivity =70.6% Specificity = 82.3% PPV = 55.7% **Athens – threshold 2/3:** Sensitivity = 80.6% Specificity = 84.7% PPV = 62.4% **Bangalore – threshold 6/7:** Sensitivity = 86.7% Specificity = 88.9% PPV = 71.2% **Berlin – threshold 2/3:** Sensitivity = 72.6% Specificity = 75.0% PPV = 47.8% **Groningen – threshold 2/3:** Sensitivity = 80.3% Specificity = 86.4% PPV = 65.1% **Ibadan – threshold 1/2:** Sensitivity = 77.8% Specificity = 79.4% PPV = 54.4% **Mainz – threshold 2/3:** Sensitivity = 73.5% Specificity = 81.2% PPV = 55.2% **Manchester – threshold 3/4:** Sensitivity = 84.6% Specificity = 89.3% PPV = 71.4% **Nagasaki – threshold 1/2:** Sensitivity = 76.2% Specificity = 85.9% PPV = 63.1% **Paris – threshold 1/2:** Sensitivity = 78.2% Specificity = 79.4% PPV = 54.3%

General Health Questionnaire-12				
Study	**Identification tool**	**Comparator / caseness**	**Population**	**Results**
				Rio de Janeiro – threshold 1/2: Sensitivity = 70.2% Specificity = 77.3% PPV = 49.4% **Santiago –=threshold 2/3:** Sensitivity = 84.8% Specificity = 82.2% PPV = 60.0% **Seattle – threshold 1/2:** Sensitivity = 82.1% Specificity = 76.5% PPV = 52.4% **Shanghai – threshold 1/2:** Sensitivity = 80.6% Specificity = 84.7% PPV = 62.4% **Verona – threshold 1/2:** Sensitivity = 75.8% Specificity = 65.3% PPV = 40.6%
Hahn *et al.*, 2006 Quality assessed: +	GHQ-12	CIDI (DSM-IV/ICD-10)	N = 204, mean age = 49.6 years, age range 18-80, 52% male 13 rehabilitation inpatient clinics in Germany, chronically-ill inpatients: 5.9% cardiovascular diseases, 8.8% orthopaedic diseases, 5.4% cancer, 18.6% endocrinologic disease, 53.4% pneumological disease *Prevalence of depression* – **35/204**	**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%
Harter *et al.*, 2001 Quality assessed: +	GHQ-12	M-CIDI	N = 206, mean age = 48 years Neck and back pain (70%), arthropathies (14%), rheumatic disorders (6%), other musculoskeletal disorders (10%)	AUC = 0.65 (0.57, 0.72) **Cut-off ≥ 5** Sensitivity = 75% Specificity = 51.7% PPV = 17.3%

General Health Questionnaire-12				
Study	**Identification tool**	**Comparator / caseness**	**Population**	**Results**
			Prevalence of depression – **10/206**	
Harter *et al.*, 2006 Quality assessed: +	GHQ-12	M-CIDI	N = 569, age range = 22-83 years, mean age = 54, 50% male 36% musculoskeletal diseases; 29% CVD and 35% cancer *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 *et al.*, 2004a & b Secondary paper Henkel *et al.*, 2003 – brief report Quality assessed: +	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 DSM-IV research criteria:** **Major depression** AUC = 0.874 **Dysthymia disorder** AUC = 0.832 **Minor depression** AUC = 0.755

General Health Questionnaire-12				
Study	**Identification tool**	**Comparator / caseness**	**Population**	**Results**
The MaGPIe Research Group, 2005 Quality assessed: +	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%
Patel *et al.*, 2008 Quality assessed: ++	GHQ-12	CIS-R	N = 598, mean age = 37.5 years (SD = 14.2 years), 43.6% male Participants attending 5 primary care clinics in Goa, India *Prevalence of common mental disorders* – **92/598**	**Common mental disorders** **Threshold 5/6 – GHQ-12** Sensitivity =73% Specificity = 90% PPV = 61.2% **Threshold 6/7 – GHQ-12** Sensitivity = 60% Specificity = 93% PPV = 64.5%

General Health Questionnaire-12				
Study	**Identification tool**	**Comparator / caseness**	**Population**	**Results**
				Threshold 7/8- GHQ-12 Sensitivity = 52% Specificity = 97% PPV = 77.1% AUC = 0.8969
Schmitz *et al.*, 1999a Schmitz *et al.*, 1999b – secondary study Schmitz *et al.*, 2001 – secondary study Quality assessed:	GHQ-12	DSM-III-R (SCID)	N = 572, mean age = 42.7 years (SD = 15.7), 31.3% male Outpatients attending primary care practices in Dusseldorf, Germany. Of these 421 completed the GHQ-12 *Prevalence of common mental disorder* – **36.8%**	**Common mental disorders** **Cut-off 11/12** Sensitivity = 0.70 Specificity = 0.68 PPV = 0.56 **Cut-off 7/8** Sensitivity = 0.88 Specificity = 0.41 AUC = 0.76 (SD = 0.026)
Physical health problems				
Aydin & Ulusahin, 2001 Quality assessed: +	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% **Diagnosed TB** **Cut-off 1/2** Sensitivity = 100% Specificity = 41.3% **Cut-off 2/3**

General Health Questionnaire-12				
Study	**Identification tool**	**Comparator / caseness**	**Population**	**Results**
				Sensitivity = 75% Specificity = 63.3% **Cut-off 3/4** Sensitivity = 63.3% Specificity = 80% **Cut-off 4/5** Sensitivity = 20% Specificity = 93.3% **Cut-off 5/6** Sensitivity = 0% Specificity = 93.3% **Multi-drug resistant TB** **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%

General Health Questionnaire-12				
Study	**Identification tool**	**Comparator / caseness**	**Population**	**Results**
				Cut-off 3/4 Sensitivity = 94.4% Specificity = 55% PPV = 65.4% NPV = 91.7% **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%
Chatuverdi *et al.*, 1994 Quality assessed: +	GHQ-12	ICD-9	N = 100 age= 25-49 years, 100% females Gynaecological patients, India *Prevalence of depression* – **36/100**	**Depression** **Optimal cut-off** Sensitivity = 1.00 Specificity = 0.78
Picardi *et al.*, 2005 Quality assessed: +	GHQ-12	SCID	N = 141, age = 38 years, 62 male, 79 female Dermatology patients, Italy *Prevalence of depression* – **44/141** *Prevalence of major depression* – **12/141**	Sensitivity = 0.73 Specificity = 0.78
Reuter and Harter, 2000 Quality assessed: +	GHQ-12	DSM-IV	N = 188, mean age = 54 years, 137 male, 51 female Cancer patients, Germany *Prevalence of depression:-*: **14/188**	**Depression:** **Cut-off 2** Sensitivity = 0.93 Specificity = 0.49
Community				
Costa *et al.*, 2006 Quality assessed:	GHQ-12	ICD-10	N = 126, mean age = 81 years, 36 male, 90 female	Sensitivity = 0.661 Specificity = 0.623

General Health Questionnaire-12				
Study	**Identification tool**	**Comparator / caseness**	**Population**	**Results**
+			Elderly people, Brazil *Prevalence of depression* – **65/126**	
Donath, 2008 Quality assessed: +	GHQ-12	ICD-10 or DSM-IV based on the CIDI	N = 10,641, 44% male Part of the 1997 Australian National Survey of Health and Wellbeing, conducted on a community sample *Prevalence of affective or anxiety disorder* – **7.3%**	**Affective or anxiety disorder** **Cut-off 0/1** Sensitivity = 75.4% (72.5–78.4) Specificity = 69.9% (69.5–70.3) **Cut-off 1/2** Sensitivity = 58.8% (55.7–61.9) Specificity = 83.8% (83.0–84.5) **Cut-off 2/3** Sensitivity = 48.0% (44.9–51.0) Specificity = 90.7% (89.9–91.4) **Cut-off 3/4** Sensitivity = 38.6% (35.5–41.7) Specificity = 94.1% (93.2–94.9) **AUC** = 0.78 (0.76–0.80)
Papassotiro-poulos and Heun, 1999 Quality assessed: +	GHQ-12	ICD-10	N = 287, mean age = 76 years, 171 female, 116 male Older people from the community, Germany *Prevalence of depression* – **10/287**	**Depression** **Optimal cut-off ≥ 4** Sensitivity = 63% Specificity = 91% AUC = 0.794
Viinamaki *et al.*, 1995 Quality assessed: +	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%

General Health Questionnaire-28				
Study	**Identification tool**	**Comparator / caseness**	**Population**	**Results**
Consultation				
Goldberg *et al.*, 1997 Quality assessed: +	GHQ-28	CIDI (DSM-IV/ICD-10)	N = 5,438 Consecutive primary care patients in 15 countries.	**Common mental health problems** **GHQ-28** **Ankara – threshold 3/4:** Sensitivity = 74.6% Specificity = 77.1% PPV = 50.7% **Athens – threshold 5/6:** Sensitivity = 89.5% Specificity = 82.8% PPV = 62.2% **Bangalore – threshold 8/9:** Sensitivity = 93.4% Specificity = 85.0% PPV = 66.4% **Berlin – threshold 5/6:** Sensitivity = 81.9% Specificity = 72.9% PPV = 48.8% **Groningen – threshold 5/6:** Sensitivity = 84.9% Specificity = 81.9% PPV = 59.8% **Ibadan – threshold 4/5:** Sensitivity = 80.8% Specificity = 75.6% PPV = 51.2% **Mainz – threshold 5/6:** Sensitivity = 80.7% Specificity = 72.9% PPV = 48.5% **Manchester – threshold 6/7:** Sensitivity = 84.4% Specificity = 86.2% PPV = 65.8% **Nagasaki – threshold 3/4:** Sensitivity = 76.7% Specificity = 77.6%

General Health Questionnaire-28				
Study	**Identification tool**	**Comparator / caseness**	**Population**	**Results**
				PPV = 51.9% **Paris – threshold 3/4:** Sensitivity = 79.3% Specificity = 74.9% PPV = 49.9% **Rio de Janeiro – threshold 3/4:** Sensitivity = 82.0% Specificity = 71.8% PPV = 47.9% **Santiago – threshold 6/7:** Sensitivity = 89.0% Specificity = 85.8% PPV = 66.4% **Seattle – threshold 3/4:** Sensitivity = 80.5% Specificity = 74.8% PPV = 50.2% **Shanghai – threshold 7/8:** Sensitivity = 84.6% Specificity = 85.5% PPV = 64.8% **Verona – threshold 5/6:** Sensitivity = 70.8% Specificity = 72.9% PPV = 45.2%
Physical health problems				
Ibbotson *et al.*, 1994 Quality assessed: +	GHQ 28	DSM-III	N = 161 (no data for GHQ-28 on whole sample n=546) Disease free cancer patients, UK *Prevalence of depression* – **20/161**	**Depression:** **Cut-off 8** Sensitivity = 0.75 Specificity = 0.92
Johnson *et al.*, 1995 Quality assessed: +	GHQ-28	DSM-III (SCID)	N = 204, mean age = 71 years, male : female = 1.27 : 1 Participants received at least one screen and underwent the psychiatric assessment	**Any depression** **Threshold 4/5** Sensitivity = 89% Specificity = 75% PPV = 47% NPV = 96%

General Health Questionnaire-28				
Study	**Identification tool**	**Comparator / caseness**	**Population**	**Results**
			GHQ-26: N = 66 HADS: N = 93 GDS: N= 120 *Prevalence of depression (whole sample)* – **26/204** *Prevalence of major depression (whole sample)* – **17/204**	**Threshold 5/6** Sensitivity = 78% Specificity = 81% PPV = 50% NPV = 94% **Threshold 6/7** Sensitivity = 44% Specificity = 86% PPV = 44% NPV = 86%
Lincoln *et al.*, 2003 Quality assessed: +	GHQ-28	ICD-10 DSM-III-R	N = 143, mean age = 66 years (SD = 13.5), 100% stroke patients, 52% male 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%
Lykouras *et al.*, 1996 Quality assessed: +	GHQ-28 (Greek version)	DSM-III-R (SCID-R)	N = 107, mean age = 43 years, 50 male, 57 female Neurological inpatients, Greece *Prevalence of common mental disorder* – **56/107**	**Common mental disorders** **Optimal cut-off 5/6 – GHQ-28** Sensitivity = 0.87 Specificity = 0.77

Geriatric Depression Scale (GDS)

Geriatric Depression Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Consultation				
Blank *et al.*, 2004	GDS – 30	Diagnostic Interview	N = 360, age >60 years, mean age = 77 years, 37% male	**Major depression**

Geriatric Depression Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Quality assessed: +		Schedule (DIS)	Participants were recruited from primary care (N=125), general hospitals (N=150) and nursing home (N=85) settings (analysis presented separately for each group) *Prevalence of major depression* – **9%** *Prevalence of any depression* – **16%** *Prevalence of major depression in primary care* – **11%** *Prevalence of major depression in hospital* – **8%** *Prevalence of major depression in nursing homes* – **9%**	**Primary care sample** **GDS-30** **Cut-off ≥10** Sensitivity = 79% (50-94) Specificity = 67% (63-69) AUC = 0.87 (0.77-0.97) **Cut-off ≥17 – recommended** Sensitivity = 79% (51-94) Specificity = 87% (84-89) **Nursing home sample** **GDS-30** **Cut-off ≥10** Sensitivity = 86% (44-99) Specificity = 72% (68-73) AUC = 0.88 (0.74- 1.02) **Cut-off ≥13 – recommended** Sensitivity = 86% (44-99) Specificity = 85% (81-86) **Hospital sample** **GDS-30** **Cut-off ≥10** Sensitivity = 83% (52-97) Specificity = 78% (75-79) AUC = 0.90 (0.81- 1.00) **Cut-off ≥15 – recommended** Sensitivity = 83% (54-97) Specificity = 93% (90-94)
Burke *et al.*, 1992 Quality assessed: +	GDS-30	DSM-III-R	N = 67, mean age = 77.2 years (SD = 6.5), 34% male Cognitively intact outpatients *Prevalence of depression* – **16/67**	**Depression** **Cut-off ≥ 11** Sensitivity = 81% Specificity = 61% **Cut-off ≥ 14** Sensitivity = 44% Specificity = 75% **Cut-off ≥ 17** Sensitivity = 31% Specificity = 94%

Geriatric Depression Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Evans & Katona, 1993 Quality assessed: +	GDS-30	Geriatric Mental State (GMS)	N = 408, mean age = 73 years (SD = 8.4), 38% male Older adults attending primary care, London. N = 144 randomly selected for analysis of GDS *Prevalence of depression* – **59/144**	**Depression** **GDS** Sensitivity = 0.8475 Specificity = 0.7176
Fernandez-San Martin *et al.*, 2002 Quality assessed: +	GDS-30	DSM-IV	N = 192, age >65 years, 70 male, 122 female Primary care, Spain *Prevalence of depression* – **60/192** (mainly psychotic depression)	**Depression** **Cut-off ≥11** Sensitivity = 0.817 Specificity = 0.68
Jongenelis *et al.*, 2005 Quality assessed: +	GDS-30	DSM-IV	N = 333, age = 79 years, 104 male, 229 female Nursing home, Netherlands *Prevalence of depression* – **74/333**	**Any depression** **Cut-off 11** Sensitivity = 0.85 Specificity = 0.69
Koenig *et al.*, 1992a & b Quality assessed: +	GDS-30	DSM-III-R	N = 109, mean age = 74 years (SD = 4.1), 100% male Medically ill hospitalised patients, Durham, US Mean MMSE score = 25.7 (SD = 3.3) *Prevalence of depression* – **11/109**	**Major depression** **Cut-off ≥ 11 - GDS** Sensitivity = 82% Specificity = 76% PPV = 27% NPV = 97%
Laprise & Vezina, 1998 Quality assessed: +	GDS-30	DSM-III-R	N = 66, mean age = 78 years, 31 male, 35 female Nursing home residents, Canada (French) *Prevalence of depression* – **27/66**	**Depression** **Cut-off 10-GDS** Sensitivity = 0.92 Specificity = 0.513
Lyness *et al.*, 1997	GDS – 30	DSM-III-R	N = 130, mean age = 71.0	**Major depression**

Geriatric Depression Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Quality assessed: +			years (SD = 6.8), 41.5% male *Prevalence of major depression* – **14/130** *Prevalence of any depression* – **24/130**	**Cut-off 10 GDS-30** Sensitivity = 100% Specificity = 84% AUC = 0.936 (0.031)
Magni *et al.*, 1986 Quality assessed: ++	GDS-30	DSM-III	N = 220, mean age = 76 years, 111 male, 109 female Consecutive admissions to general medical ward, Italy *Prevalence of depression (MDD and dysthymia)* – **67/220** *MDD only* – **18/220**	**Depression** **Cut-off 11 -GDS** Sensitivity = 0.86 Specificity = 0.74 **Cut-off 14 - GDS** Sensitivity = 0.65 Specificity = 0.91
McGivney *et al.*, 1994 Quality assessed: +	GDS - 30	DSM-III-R	N = 66, mean age = 83 years (SD = 4), 29% male New admissions to two nursing homes *Prevalence of major depression* – **6/66** *Prevalence of any depression* – **30/66**	**Any depression** **Cut-off≥ 10 – GDS-30** Sensitivity = 63% Specificity = 83%
Nam Bae & Cho, 2004 Quality assessed: ++	GDS – Korean version (GDS-K)	DSM-III-R	N = 154 (91.1% of eligible participants), mean age = 66 years (SD = 6.48), 35% male Consecutively registered elderly psychiatric patients aged 55+ who visited the Geriatric Psychiatry Clinic in Seoul. People with dementia or any form of cognitive impairment were excluded from the study *Prevalence of depression* – **62/154**	**Major depression** **GDS-K** **Optimal cut-off ≥ 16** Sensitivity = 0.9032 Specificity = 0.7174 **Optimal cut-off ≥ 18 (indicated by ROC curve)** Sensitivity = 0.8387 Specificity = 0.8152
Neal & Baldwin, 1994 Quality assessed:	GDS-30	GMS-AGECAT	N = 45, mean age = 77.2 years, 38% male Older adults attending	**Depression** **Cut-off ≥ 9 – GDS-30** Sensitivity = 0.63

Geriatric Depression Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
+			medical outpatient clinics in three UK hospitals *Prevalence of depression* – **10/45 (22%)**	Specificity = 0.80 PPV = 0.92 NPV = 0.38 **Cut-off ≥10 – GDS-30** Sensitivity = 0.74 Specificity = 0.80 PPV = 0.93 NPV = 0.47 **Cut-off ≥11 – GDS-30** Sensitivity = 0.73 Specificity = 0.80 PPV = 0.94 NPV = 0.57 **Cut-off ≥12 – GDS-30** Sensitivity = 0.83 Specificity = 0.80 PPV = 0.94 NPV = 0.57 **Cut-off ≥13 – GDS-30** Sensitivity = 0.83 Specificity = 0.70 PPV = 0.91 NPV = 0.54 **Cut-off ≥14 – GDS-30** Sensitivity = 0.83 Specificity = 0.60 PPV = 0.88 NPV = 0
Pomeroy *et al.*, 2001 Quality assessed: +	GDS - 30	ICD-10	N = 87, mean age 78.4 years (SD = 7.7), 40% male Patients over the age of 60 admitted to medical rehabilitation wards or attending day rehabilitation facilities *Prevalence of depression* – **17/87**	**Depressive episode** **GDS-30** **Optimal cut-off ≥ 11** Sensitivity = 100% Specificity = 62.9% AUC = 0.85 (0.77, 0.94) PPV = 39.5% NPV = 100%
Robison *et al.*, 2002 Quality assessed:	GDS-30	CIDI	N = 303, age = 61 years, 88 male, 215 female Primary care, Hispanic	Sensitivity = 0.81 Specificity = 0.65

Geriatric Depression Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
+			population in US *Prevalence of depression* – Prevalence: 67/303	
Snowdon, 1990 Quality assessed: +/- unable to assess due to lack of information.	GDS-30	DSM-III	N = 69, mean age and % male - not reported Residents in old age hostels or nursing homes *Prevalence of major depression* – **12/69** *Prevalence of any depression* – **15/69**	**Any depression** **All participants** **Cut-off ≥11 – GDS-30** Sensitivity = 93% Specificity = 83% **Cut-off ≥14 GDS-30** Sensitivity = 60% Specificity = 94% **Nursing home participants only** **Cut-off ≥11 – GDS-30** Sensitivity = 100% Specificity = 66% **Cut-off ≥14 GDS-30** Sensitivity = 71% Specificity = 92%
Van Marwijk *et al.*, 1995 Quality assessed: +	GDS-30 item	DSM-III	N = 586, age = 65–94 years, 237 male, 349 female Older people in primary care, Netherlands *Prevalence of depression* – **33/586**	**Any depression** **Cut-off 10 – GDS-30** Sensitivity = 0.55 Specificity = 0.86
Vargas *et al.*, 2007 Quality assessed: +	GDS-30	DSM-IV	N = 484, age = 70 years, 208 male, 276 female General Outpatient Clinic, Portugal *Prevalence of depression* – **210/484**	**Cut-off 12** Sensitivity = 0.87 Specificity = 0.73
Watson *et al.*, 2004 Quality assessed: +	GDS-30	DSM-IV	N = 84, age = >70, mean age = 82, 26% male Participants residing in two Continuing Care Retirement Communities in US	**Major depression** **GDS-30** **Standard cut-off ≥ 12** Sensitivity = 60% (50, 70) Specificity = 93% (88, 98)

Geriatric Depression Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
			Prevalence of depression – **10/78**	PPV = 55% NPV = 95% AUC = 0.88 **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%

Geriatric Depression Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				Cut-off ≥ 16 Sensitivity = 60% Specificity = 100% **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				
Agrell & Dehlin, 1989 Quality assessed: +	GDS-30	Psychiatric interview	N = 40, mean age = 80 years, 45% male Adults attending an outpatient clinic following a stroke *Prevalence of depression:-* **17/40**	**Depression** **Recommended cut-off ≥ 10 – GDS-30** Sensitivity = 88% Specificity = 64% PPV = 58% NPV = 88%
Jackson & Baldwin, 1993 Quality assessed: +	GDS-30	GMSS - AGECAT	N = 59, mean age = 77.4 years, % male – not reported Hospitalised medically ill older adults. *Prevalence of depression* – **21/59 (36%)**	**Depression** **Cut-off ≥ 9 – GDS-30** Sensitivity = 100% Specificity = 55% PPV = 56% **Cut-off ≥ 10 – GDS-30** Sensitivity = 91% Specificity = 63% PPV = 58% **Cut-off ≥ 11 – GDS-30** Sensitivity = 86% Specificity = 76% PPV = 67% **Cut-off ≥ 12 – GDS-30** Sensitivity = 81% Specificity = 74% PPV = 74% **Cut-off ≥ 13 – GDS-30** Sensitivity = 62% Specificity = 87%

Geriatric Depression Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				PPV = 72%
Johnson *et al.*, 1995 Quality assessed: +	GDS-30	DSM-III (SCID)	N = 204, mean age = 71 years, male : female = 1.27 : 1 Participants received at least one screen and underwent the psychiatric assessment GHQ-26: N = 66 HADS N = 93 GDS: N= 120 *Prevalence of depression (whole sample)* – **26/204** *Prevalence of major depression (whole sample)*- **17/204**	**Any depression** **Threshold 13/14** Sensitivity = 84% Specificity = 50% PPV = 44% NPV = 87% **Threshold 10/11** Sensitivity = 84% Specificity = 66% PPV = 53% NPV = 90% **Threshold 11/12** Sensitivity = 74% Specificity = 70% PPV = 53% NPV = 85%
Low & Hubley, 2007 Quality assessment +	GDS-30	DSM-IV (SCID-I / NP)	N = 119, mean age = 62.97 years (SD = 11.61), 75% male Hospitalised medically ill older adults. Patients meeting criteria for either acute MI or unstable angina pectoris, Canada, British Columbia *Prevalence of depression* – **7/119**	**MDD** **Cut-off ≥ 10 – GDS** Sensitivity = 100% Specificity = 79% PPV = 21% NPV = 100% **Standard cut-off ≥ 11 – GDS** Sensitivity = 100% Specificity = 83% PPV = 25% NPV = 100% **Cut-off ≥ 12 – GDS** Sensitivity = 100% Specificity = 88% PPV = 32% NPV = 100% **Cut-off ≥ 13 – GDS** Sensitivity = 100% Specificity = 90% PPV = 35% NPV = 100% **Cut-off ≥ 14 – GDS** Sensitivity = 100%

Geriatric Depression Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				Specificity = 94% PPV = 50% NPV = 100% **Cut-off ≥ 14 – GDS** Sensitivity = 67% Specificity = 94% PPV = 40% NPV = 98% AUC = 0.97 **Any Depression** **Cut-off ≥ 9 – GDS** Sensitivity = 100% Specificity = 74% PPV = 21% NPV = 100% **Cut-off ≥ 10 – GDS** Sensitivity = 100% Specificity = 80% PPV = 25% NPV = 100% **Standard cut-off ≥ 11 – GDS** Sensitivity = 100% Specificity = 84% PPV = 29% NPV = 100% **Cut-off ≥ 12 – GDS** Sensitivity = 100% Specificity = 89% PPV = 37% NPV = 100% **Cut-off ≥ 13 – GDS** Sensitivity = 100% Specificity = 91% PPV = 41% NPV = 100% **Cut-off ≥ 14 – GDS** Sensitivity = 86% Specificity = 94% PPV = 50% NPV = 99%

Geriatric Depression Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				AUC = 0.96
Rovner & Shmuely-Dulitzi, 1997 Quality assessed: +	GDS-30	DSM-IV	N = 70, mean age = 77 years, 41 female, 29 male *Prevalence of depression* **27/70**	**Depression** **Standard cut-off - GDS** Sensitivity = 63% Specificity = 77%
Tang *et al.*, 2004b Quality assessed: +	GDS-30 – Chinese version	DSM-IV	N= 127, mean age = 75.7 years (SD = 6.2), 53.5% male Chinese geriatric stroke patients *Prevalence of depression* – **8/100**	**Any depression** **Optimal cut-off ≥ 7** AUC = 0.90 Sensitivity = 89% Specificity = 73% PPV = 37% NPV = 97%
Ertan *et al.*, 2005 Quality assessed: +	GDS-30 – Turkish version	DSM-IV	N = 109, mean age = 66.5 years, age range 29–84 years, 67% male Patients with Parkinson's disease, Istanbul, Turkey *Prevalence of depression* – **56/109**	**Depression** **Cut-off ≥ 10** Sensitivity = 89% Specificity = 62% PPV = 71% NPV = 84%
Community				
Carrete *et al.*, 2001 Quality assessed: +	GDS-30	DSM-IV (SCID)	N= 169, mean age = 72 years, 57 male, 112 female Ambulatory older adults were contacted by telephone, Argentina *Prevalence of depression* - **22/169**	**Cut-off 11** Sensitivity = 0.88 Specificity = 0.84
Costa *et al.*, 2006 Quality assessed: +	GDS-30	ICD-10	N = 126, mean age = 81 years, 36 male, 90 female Older adults, Brazil *Prevalence of depression* – **65/126**	**GDS** Sensitivity = 0.733 Specificity = 0.654
Dunn & Sacco, 1989 Quality assessed:	GDS-30	DSM-III measured used the Depression	N = 439, mean age = 74 years, % male - not reported Community-dwelling older	**Major depression** **Cut-off 11 – GDS 30** False Positive = 53 (18%)

Geriatric Depression Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
+		symptom checklist and the research diagnostic criteria/	adults attending either an activity centre or dining facility *Prevalence of depression*- **36/439**	False Negative = 6 (17%)
Sanchez-Garcia *et al.*, 2008 Quality assessed: ++	GDS-30	DSM-IV	N = 534, mean age = 71.5 years (SD = 7.0 years), 32% male Older adults receiving IMSS (Mexican Institute of Social Security), living in Mexico City, 206 individuals randomly selected for a clinical assessment *Prevalence of major depression* – **19/206** *Prevalence of any depression* – **62/206**	**Any depression** **Standard cut-off GDS** Sensitivity = 53.8% (53.1–54.5) Specificity = 78.9% (78.4–79.5) PPV = 60.8% (60.0–61.6) NPV = 73.7% (73.3–74.1)

Geriatric Depression Scale – 15 item (and Brief GDS)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Consultation				
Abas *et al.*, 1998 Quality assessed: +	GDS-15	GMS-AGECAT	N = 164 (82 completed both the screen and the diagnostic interview) African-Caribbean adults aged over 60 using primary care services/ London, UK *Prevalence of depression* – **22/82** *Prevalence of depression based on whole sample* – **20**% (95% CI 17, 23)	**Major depression** **Cut-off ≥4** Sensitivity = 89.1% Specificity - 65.8% **Cut-off ≥5** Sensitivity = 81.5% Specificity = 81.5% **Cut-off ≥6** Sensitivity = 74.0% Specificity = 85.5%
Arthur *et al.*, 1999 Quality assessed: +	GDS-15	ICD-10 based on	N = 201 All people aged over 75 in one large GP practice list undergoing a health check,	**Depression** **Cut-off ≥2** Sensitivity = 100% Specificity = 49.9% PPV = 11.2%

Geriatric Depression Scale – 15 item (and Brief GDS)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
		(SCAN)	Leicester, UK *Prevalence of depression* – **12/201 – 6%**	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** Sensitivity = 43.3% Specificity = 96.0% PPV = 40.6% NPV = 96.4%
Blank *et al.*, 2004 Quality assessed: +	GDS - 15	Diagnostic Interview Schedule (DIS)	N = 360, mean age = 77 years, 37% male Participants were recruited from primary care (N=125), general hospitals (N=150) and nursing home (N=85) settings (analysis presented separately for each group). All participants were aged >60 years *Prevalence of major depression* – **9%** *Prevalence of any depression* – **16%**	**Major depression** **Primary care sample** **GDS-15** **Cut-off ≥6** Sensitivity = 79% (51-94) Specificity - 75% (71-77) AUC = 0.81 (0.67-0.97) **Cut-off ≥9 – recommended** Sensitivity = 71% (45-90) Specificity = 91% (88-93) **Nursing home sample** **GDS-15**

Geriatric Depression Scale – 15 item (and Brief GDS)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
			Prevalence of major depression in primary care – **11%** *Prevalence of major depression in hospital* – **8%** *Prevalence of major depression in nursing homes* – **9%**	**Cut-off ≥6** Sensitivity = 86% (44-99) Specificity = 82% (78-83) AUC = 0.87 (0.74- 1.00) **Cut-off ≥7 – recommended** Sensitivity = 86% (44-99) Specificity = 83% (80-85) **Hospital sample** **GDS-15** **Cut-off ≥6** Sensitivity = 83% (52-97) Specificity = 80% (77-81) AUC = 0.82 (0.68- 0.96) **Cut-off ≥6 – recommended** Sensitivity = 83% (53-97) Specificity = 80% (77-81)
Cullum *et al.*, 2006 Quality assessed: +	GDS-15	ICD-10	N = 618 medically ill older adults in hospital settings. Of these 221 completed both the screens and the diagnostic interviews Whole sample: mean age = 80.2 years (SD = 7.48), 41% male Interview sample: mean age = 80.3 years (SD = 7.49), 40% male *Prevalence of depression* – **17.7%** (weighted prevalence)	**Depression** **Cut-off ≥ 5 – GDS-15** Sensitivity = 0.91 (0.71-0.98) Specificity = 0.63 (0.55-0.71) **Cut-off ≥ 6 – GDS-15** Sensitivity = 0.78 (0.58-0.90) Specificity = 0.74 (0.66-0.80) **Cut-off ≥ 7 – GDS-15** Sensitivity = 0.74 (0.54-0.87) Specificity = 0.81 (0.75-0.86) **Cut-off ≥ 8 – GDS-15** Sensitivity = 0.61 (0.43-0.76) Specificity = 0.86 (0.82-0.89) **Cut-off ≥ 9 – GDS-15** Sensitivity = 0.50 (0.35-0.65) Specificity = 0.92 (0.88-0.94) **Cut-off ≥ 10 – GDS-15** Sensitivity = 0.39 (0.27-0.52) Specificity = 0.94 (0.92-0.96)
D'Ath *et al.*, 1994	GDS-15	GMS	N = 194, age = 74 years, 126	**Depression**

Geriatric Depression Scale – 15 item (and Brief GDS)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Quality assessed: +			female, 72 male *Prevalence of depression* – **67/194**	Sensitivity = 91% Specificity = 72%
Friedman *et al.*, 2005 Quality assessed: +	GDS-15	Mini International Neuropsychiatric Interview (MINI)	N = 960 , mean age = 79. 3years (SD 7.4), 25.4% male Functionally impaired but cognitively intact older adults participating in a RCT assessing a primary care health intervention, US *Prevalence of depression* – **124/960 (12.9%)**	**Depression** **Standard Cut-off ≥6** Sensitivity = 81.45% Specificity = 75.36% AUC = 0.858 (SE – 0.018)
Hoyl *et al.*, 1999 Quality assessed: +	GDS-15 GDS-5	Clinical evaluation – including MINI, PRIME-MD and psychiatric consultation	N = 74, mean age = 74 years, 98% male Frail older adult outpatients, California, US *Prevalence of depression* – **34 / 74 (46%)**	**Any depression** **GDS-15** Sensitivity = 0.94 Specificity = 0.82 PPV = 0.82 NPV = 0.94 AUC = 0.91 **GDS-5** **Optimal cut off ≥ 2** Sensitivity = 0.97 Specificity = 0.85 PPV = 0.85 NPV = 0.97 AUC = 0.94
Jongenelis *et al.*, 2005 Quality assessed: +	GDS-15	DSM-IV	N = 333, age = 79 years, 104 male, 229 female Nursing home, Netherlands *Prevalence of depression* – **74/333**	**Any depression** **Cut-off 5** Sensitivity = 0.81 Specificity = 0.63
Lyness *et al.*, 1997 Quality assessed: +	GDS - 15	DSM-III-R	N = 130, mean age = 71.0 years (SD = 6.8 years), 41.5% male Older adults attending primary care *Prevalence of major depression* –	**Major depression** **Cut-off 5 GDS-15** Sensitivity = 92% Specificity = 81% AUC = 0.935 (0.046)

Geriatric Depression Scale – 15 item (and Brief GDS)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
			14/130 *Prevalence of any depression* – **24/130**	
Marc *et al.*, 2008 Quality assessed: +	GDS-15	DSM-IV using SCID and expert consensus	N = 526, mean age = 78.3 years (SD = 7.5), 34.9%male Older adults who were newly admitted to receive home nursing care; participants with cognitive impairment were excluded from the study (492 cases used in the analysis due to missing data) *Prevalence of depression* – **81/526 (15.4%)**	**Depression** **Optimal cut off ≥ 5 – GDS-15** Sensitivity = 71.8% Specificity = 78.2% AUC = 0.7933 (SE – 0.0308) **Standard cut off ≥ 5 – GDS-15** Sensitivity = 60.6% Specificity = 86.2%
Nam Bae & Cho, 2004 Quality assessed: ++	Short GDS – Korean version (SGDS-K)	DSM-III-R	N = 154 (91.1% of eligible participants), mean age = 66 years (SD = 6.48), 35% male Consecutively registered elderly psychiatric patients aged 55+ who visited the Geriatric Psychiatry Clinic in Seoul. People with dementia or any form of cognitive impairment were excluded from the study *Prevalence of depression* – **62/154**	**Major depression** **SGDS-K** **Optimal cut-off ≥ 8** Sensitivity = 0.8548 Specificity = 0.6957 **Optimal cut-off ≥ 10 (indicated by ROC curve)** Sensitivity = 0.7419 Specificity = 0.8587
Neal & Baldwin, 1994 Quality assessed: +	GDS-15	DSM (GMS)	N = 45, age = 77years, 18 male, 27 female *Prevalence of depression* – **8/45**	**Depression** **Optimal cut-off - GDS-15** Sensitivity = 0.67 Specificity = 0.80
Pomeroy *et al.*, 2001 Quality assessed: +	GDS-4 GDS-15	ICD-10	N = 87, mean age 78.4 years (SD = 7.7) , 40% male Patients over the age of 60 admitted to medical rehabilitation wards or attending day rehabilitation facilities *Prevalence of depression* –	**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%

Geriatric Depression Scale – 15 item (and Brief GDS)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
			17/87	**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%
Rinaldi *et al.*, 2003 Quality assessed: +	GDS-15 5-item GDS (Hoyl *et al.*, 1999) (GDS-5)	DSM-IV	N = 181, age = 65 years and older, mean age 79.4 (SD = 7.3) Participants 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 *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 *et al.*, 2001 Quality assessed: ++	GDS-15	DSM-IV	N = 75, age = 74 years, 33 male, 42 female Geriatric medical setting, US *Prevalence of depression* – **8/75**	**Cut-off ≥ 7** Sensitivity = 1 Specificity = 0.79
Van Marwijk *et al.*, 1995 Quality assessed: +	GDS – 15 item	DSM-III	N = 586, age = 65–94 years, 237 male, 349 female Older people in primary care, Netherlands *Prevalence of depression* – **33/586**	**Any depression** **Cut-off <3/3 – GDS-15** Sensitivity = 67% Specificity = 73% PPV = 13% NPV = 97% **Cut-off <2/2+** Sensitivity = 76% Specificity = 53% PPV = 9% NPV = 97%
Physical health problems				
Galaria *et al.*, 2000	GDS-15	DSM-III-R	N = 70, age = 65 years and over, mean age = 77.4 years (SD = 6.6 years), 41.6% male	**Depression** **Standard Cut-off ≥ 5**

Geriatric Depression Scale – 15 item (and Brief GDS)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Quality assessed: +			Older adults with visual impairments attending a low-vision specialist clinic *Prevalence of depression* – **27/70 (38.6%)**	Sensitivity = 0.74 Specificity = 0.72
Haworth *et al.*, 2007 Quality assessed: +	GDS-15	DSM-IV (SCID)	N = 88, mean age = 70 years, 73 male, 15 female Heart failure patients, US *Prevalence of depression* – **22/88** depression **13/88** MDD	**Depression** **Cut-off 5 (recommended and optimal)** Sensitivity = 81.8% Specificity = 83.3% PPV = 62.1% NPV = 93.2%
Jackson & Baldwin, 1993 Quality assessed: +	GDS-15	GMSS - AGECAT	N = 59, mean age = 77.4 years, % male – not reported Hospitalised medically ill older adults *Prevalence of depression* – **21/59 (36%)**	**Depression** **Cut-off ≥ 4 – GDS-15** Sensitivity = 100% Specificity = 50% PPV = 53% **Cut-off ≥ 5 – GDS-15** Sensitivity = 86% Specificity = 66% PPV = 58% **Cut-off ≥ 6 – GDS-15** Sensitivity = 67% Specificity = 79% PPV = 64%
Koenig *et al.*, 1992b (followed on from Koenig *et al.*, 1992a, but used a different sample in the validation study) Quality assessed: +	GDS-11	DSM-III-R	N = 78, mean age (of whole 117 sample) = 34.4 years (SD = 4.7), 100% male Participants completed GDS-11 and psychiatric interview out of 117 participants who completed the GDS-11 (only those in the first two months of the study had a psychiatric interview); participants were all recruited from a neurology unit *Prevalence of depression* – **12/78**	**Depression** **Cut-off ≥ 3 - GDS-11** Sensitivity = 83% Specificity = 77%

Geriatric Depression Scale – 15 item (and Brief GDS)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Lee *et al.*, 2008 Quality assessed: +	GDS-15 – Chinese version	DSM-IV	N = 253, mean age = not reported, 62.8% male Stroke patients 1 month after admission to the stroke unit *Prevalence of depression* – **116/253**	**Depression** **Cut-off ≥ 5 – GDS-15** Sensitivity = 83.6% Specificity = 76.6% PPV = 75.2% NPV = 84.7%
Tang *et al.*, 2004a Quality assessed: +	GDS–15 – Chinese version	DSM-III-R	N = 60 Chinese patients receiving 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 *et al.*, 2006 Quality assessed: +	GDS -15	DSM-IV	N = 148, mean age = 71 years Participants with idiopathic PD receiving specialist care 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% 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%

Geriatric Depression Scale – 15 item (and Brief GDS)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				Cut-off 6/7 Sensitivity = 66% Specificity = 97% PPV = 84% NPV = 91% **Cut-off 7/8** Sensitivity = 50% Specificity = 97% PPV = 84% NPV = 88%
Community				
De Craen *et al.*, 2003 Quality assessed: +	GDS-15	DSM-IV	N=79, median age = 87 years, 24 male, 55 female Community dwelling, older adults, Netherlands	**Cut-off 3** True Positive = 7 False Positive = 17 False Negative = 1 True Negative =54
Orcos *et al.*, 2007 Unable to quality assess as full translation required (detailed English abstract containing information on population and all results)	GDS-15 GDS-5	DSM-IV	N = 301 Non-selected older community-dwelling adults *Prevalence of depression* – **14.6%**	**Depression** **GDS-15** Sensitivity = 0.818 (0.704-0.932) Specificity = 0.977 (0.958-0.995) PPV = 0.857 (0.751-0.963) NPV = 0.969 (0.948-0.99) **GDS-5** Sensitivity = 0.864 (0.762-0.965) Specificity = 0.856 (0.813-0.899) PPV = 0.507 (0.394-0.62) NPV = 0.973 (0.952-0.994)
Rait *et al.*, 1999 Quality assessed: +	GDS-15	DSM-IV	N = 130, mean age = >60 years, no information on gender *Prevalence of depression* – **13/130**	**Depression** Sensitivity = 91% Specificity = 72%

Hospital Anxiety and Depression Scale (HADS)

Hospital Anxiety and Depression Scale (HADS – Depression only)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Consultation				
Hahn *et al.*, 2006 Quality assessed: +	HADS	CIDI (DSM-IV/ICD-10)	N = 204, age range 18-80 years, mean age = 49.6 years, 52% male 13 rehabilitation inpatient clinics in Germany, chronically ill in-patients; 5.9% cardiovascular diseases, 8.8% orthopaedic diseases, 5.4% cancer, 18.6% endocrinologic disease, 53.4% pneumological disease *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 *et al.*, 2001 Quality assessed: +	HADS	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 = 0.79 (0.73, 0.85)** **Cut-off ≥ 16:** Sensitivity = 78.3% Specificity = 70.6% PPV = 28.6%
Harter *et al.*, 2006 Quality assessed: +	HADS	M-CIDI	N = 569, age range 22-83 years, mean age = 54 years, 50% male 36% musculoskeletal diseases, 29% CVD and 35% cancer *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%
Healey *et al.*, 2008 Quality assessed: ++	HADS	DSM-IV (SCID)	N = 49, mean age = 78.9 years (SD = 6.79), 43% male Stroke patients recruited from inpatient rehabilitation units *Prevalence of MDD* –	**Any depression** **Cut-off ≥ 8 – HADS** Sensitivity = 62% (36-82) Specificity = 69% (53-82) PPV = 42% (23-64) NPV = 83% (66-93)

Hospital Anxiety and Depression Scale (HADS – Depression only)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
			7/49 *Prevalence of minor depression* – **6/49** *Prevalence of any depression* – **13/49**	**MDD** **Cut-off ≥8 - HADS** Sensitivity = 86% (49-97) Specificity = 69% (54-81) PPV = 32% (15-54) NPV = 97% (83-99)
Herrero *et al.*, 2003 Quality assessed: +	HADS	DSM-IV (SCID)	N = 385, mean age = 38 years, 204 male, 181 female General Hospital – all participants were outpatients with severe medical pathology, from neurosurgery, pulmonary, cardiology, neurology and infectious illness settings, Spain *Prevalence of depression* – **87/385**	**Cut-off 7** Sensitivity = 0.92 Specificity = 0.644
Lam *et al.*, 1995 Quality assessed: +	HADS	DSM-III-R	N = 100, age = 69 years, 44 male, 56 female Elderly primary care patients, Hong Kong *Prevalence of depression* – **9/100**	Sensitivity = 0.78 Specificity = 0.91
Lowe *et al.*, 2004a Lowe *et al.*, 2004b – duplicate report Quality assessed: +	HADS	DSM-IV (SCID)	N = 501, mean age = 41.7 years (SD = 13.8), 32.9% male 395 outpatients from Heidelberg University Medical Hospital, 106 patients from 12 GPs in Heidelberg 21% musculoskeletal disease, 16% endocrine, nutritional & metabolic disease, 10% cardiovascular/circulatory disease, 7% gastrointestinal disease, 6% respiratory system disease *Prevalence of depression* –	**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** Sensitivity = 88% (78, 95)

Hospital Anxiety and Depression Scale (HADS – Depression only)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
			66/501	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 *et al*., 2002 Quality assessed: +	HADS	DSM-IV (CIDI)	N = 302, mean age = 46.5 (SD = 12.9), 63.2% male 111 (36.8%) patients had chronic physical illness; mean duration = 9 years 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%) Australia, Sydney <u>*Prevalence of depression*</u> – **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)

Hospital Anxiety and Depression Scale (HADS – Depression only)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Upadhyaya & Stanely, 1997 Quality assessed: +	HADS	GMS-AGECAT	N = 72, age = 71.2 years, 37 male, 35 female Attendees over 65years old at a medical centre (80 approached to take part in study), Liverpool, UK *Prevalence of depression* – **20/72**	**Depression** **Optimal cut-off 8/9** Sensitivity = 70% Specificity = 87%
Physical health problems				
Aben *et al.*, 2002 Quality assessed: +	HADS-D	DSM-IV	N = 202 (N=176 completed HADS-D), mean age = 68 years, 91 female, 111 male Stroke patients, Maastricht, Netherlands *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 ≥ 8** Sensitivity = 72.5% Specificity = 78.9% PPV = 50.9% NPV = 90.5% AUC = 0.83
Akizuki *et al.*, 2003 Quality assessed: +	HADS	DSM-IV	N = 275, mean age = 52 years, 164 female, 111 male Cancer patients, Tokyo and Kashiwa, Japan *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 *et al.*, 2005 Quality assessed: +	HADS	DSM-IV	N = 295; mean age = 51 years, 164 female, 131 male Cancer patients; Japan *Prevalence of depression* – **53/295**	**Depression: major depression** **Optimal cut-off ≥ 15** Sensitivity = 77% Specificity = 74%
Berard *et al.*, 1998 Quality assessed: +	HADS	DSM-IV	N=100, age = 50 years, 13 male, 87 female Cancer patients, South Africa	**Depression:** **Cut-off 8** Sensitivity = 0.71 Specificity = 0.95

Hospital Anxiety and Depression Scale (HADS – Depression only)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
			Prevalence of depression :- **21/100**	
Golden *et al.*, 2007 Quality assessed: +	HADS	DSM-IV (SCID-CV)	N = 88, 74% male Outpatients at a hepatitis C service *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)
Hall *et al.*, 1999 Quality assessed: +	HADS	DSM-IV	N = 266, age = <75 years, 100% female Women with early breast cancer, UK *Prevalence of depression* – **99/266**	**Depression:** **Cut-off 8** Sensitivity = 0.333 Specificity = 0.934
Haworth *et al.*, 2007 Quality assessed: +	HADS	DSM-IV (SCID)	N = 88, age = 70 years, 73 male, 15 female Heart failure patients, US *Prevalence of any depression* – **22/88** *Prevalence of MDD* – **13/88**	**Depression** **Cut-off 6** Sensitivity = 77.3% Specificity = 89.4%
Ibbotson *et al.*, 1994 Quality assessed: +	HADS	DSM-III	N = 513, median age = 50-59 years, 231 male, 282 female Cancer patients, UK *Prevalence of depression* – **20/161**	**Anxiety and Depression** **Optimal cut-off >14 – HADS** Sensitivity = 80% Specificity = 76% PPV = 41%

Hospital Anxiety and Depression Scale (HADS – Depression only)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Johnson *et al.*, 1995 Quality assessed: +	HADS	DSM-III (SCID)	N = 204, mean age (whole sample) = 71 years, male : female = 1.27 : 1 Participants received at least one screen and underwent the psychiatric assessment GHQ-26: N = 66 HADS N = 93 GDS: N= 120 *Prevalence of depression (whole sample)* – **26/204** *Prevalence of major depression (whole sample)*- **17/204**	**Any depression** **Threshold 3/4** Sensitivity = 94% Specificity = 32% PPV = 25% NPV = 96% **Threshold 4/5** Sensitivity = 83% Specificity = 44% PPV = 26% NPV = 92% **Threshold 5/6** Sensitivity = 61% Specificity = 50% PPV = 23% NPV = 84%
Love *et al.*, 2004 Quality assessed: +	HADS	DSM-IV	N = 227, mean age = 52 years (SD = 9), 100% female Women with stage IV breast cancer involved in RCT, 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 (HADS – Depression only)				
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%
Poole & Morgan, 2006 Quality assessed: +	HADS	DSM-III-R (SCID)	N = 115, median age = 43 years, age range = 23–63 years, 59.1% male Patients from a hypertrophic cardiomyopathy clinic, London, UK *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**

Hospital Anxiety and Depression Scale (HADS – Depression only)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				Sensitivity = 96% Specificity = 79% PPV = 74% NPV = 96% **Cut-off ≥ 8 - HADS-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%
Reuter & Harter, 2000 Quality assessed: +	HADS	DSM-IV	N = 188, mean age = 54 years, 137 male, 51 female Cancer patients, Germany *Prevalence of depression* – **14/188**	**HADS** **Cut-off 17** Sensitivity = 0.79 Specificity = 0.76
Stafford *et al.*, 2007 Quality assessed: ++	HADS – depression subscale	DSM-IV	N = 193, mean age = 64.14 years (SD = 10.37), age range 38–91 years, 80.8% male Patients hospitalised for percutaneous transluminal coronary angioplasty or coronary artery bypass graft surgery, Geelong, Australia	**Any depression** **HADS-Depression subscale** AUC = 0.85 (SE = 0.03) **Cut-off ≥ 5 - HADS-Depression subscale** Sensitivity = 77.8% Specificity = 80.6%

Hospital Anxiety and Depression Scale (HADS – Depression only)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
			Prevalence of depression – **54/193**	PPV = 60.9% NPV = 90.3% **Cut-off ≥ 8 - HADS-Depression subscale** Sensitivity = 38.9% Specificity = 94.2% PPV = 72.4% NPV = 79.9%
Strik *et al.*, 2001 Quality assessed: +	HADS	DSM-IV (SCID-I)	N = 206, male mean age = 59 years (SD = 10.6), male age range = 34–84 years, female mean age = 62.9 (SD = 10.7), female age range = 38–78, 76.1% male Post-myocardial infarction *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 *et al.*, 2004a Quality assessed: +	HADS – Chinese version	DSM-III-R	N = 100, age = 74 years, 55% male First acute stroke patients, recruited from consecutive admissions to the Stroke Recovery Unit *Prevalence of depression – All disorders* – **17/100** *Prevalence of MDD* – **8/100**	**Any depression** **Cut-off 5/6** Sensitivity = 0.88 Specificity = 0.51 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 *et al.*, 2004b	HADS – Chinese version	DSM-III-R	N = 60	**All depressive disorders**

Hospital Anxiety and Depression Scale (HADS – Depression only)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Quality assessed: +			Chinese patients received rehabilitation after stroke *Prevalence of depression* – **14/60**	**Optimal cut-off ≥ 4** AUC = 0.838 Sensitivity = 86% Specificity = 78% PPV = 55% NPV = 93%
Walker *et al.*, 2007 Quality assessed: +	HADS (total; depression subscale; anxiety subscale)	SCID	N = 361 33.5% males Cancer patients: 69.3% breast cancer, 12.5% prostate and bladder cancer; 78.9% had no active disease present, outpatients in clinic in Edinburgh, UK *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% **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%

Hamilton Depression Rating Scale (HDRS)

Hamilton Depression Rating Scale (HDRS)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Physical health problems				
Aben *et al.*, 2002 Quality assessed: +	HDRS	DSM-IV	N = 202 (N=171 completed BDI), mean age = 68 years, 91 female, 111 male Stroke patients, Maastricht, Netherlands, <u>*Prevalence of major and minor depression*</u> **– 51/202**	**Depression: major depressive and minor disorder** **Standard cut-off ≥ 12** Sensitivity = 78.4% Specificity = 81.3% PPV = 58.8% NPV = 91.7% AUC = 0.86
Agrell & Dehlin, 1989 Quality assessed: +	HRSD	Psychiatric interview	N = 40, mean age = 80 years, 45% male Adults attending an outpatient clinic following a stroke <u>*Prevalence of depression*</u> – **17/40**	**Depression** **Recommended cut-off ≥ 10 – HRSD** Sensitivity = 71% Specificity = 87% PPV = 60% NPV = 80%
Leentjens *et al.*, 2000b Quality assessed: +	HDRS	DSM-IV (SCAN)	N = 63, mean age = 68 years, 63% male Patients with Parkinson's disease (without the presence of dementia). <u>*Prevalence of depression*</u> – **16/63**	**Depressive Disorder** **Standard cut-off 11/12 - HDRS** Sensitivity = 94% Specificity = 75% PPV = 56% NPV = 97% **Optimal cut-off 13/14 - HDRS** Sensitivity = 88% Specificity = 89% PPV = 74% NPV = 96% **AUC =** 0.9497
Serrano-Duenas & Serrano, 2008 Quality assessed: +	HDRS – 21 item HDRS – 6 Item	DSM-IV	N = 115, mean age = 70.33 (SD = 10.31), 71.3% male Patients with Parkinson's disease, Quito, Ecuador <u>*Prevalence of depression*</u> – **49/115**	**Major depressive episode** **Optimal cut-off 18/19 – HDRS-21** Sensitivity = 86% (76-92) Specificity = 95% (83-98) **AUC** = 0.94 (0.90-0.98)

				Optimal cut-off 7/8 – HDRS-6 Sensitivity = 79% (69- 87) Specificity = 91% (78-97) **AUC** = 0.92 (0.87-0.97)
Strik *et al.*, 2001 Quality assessed: + 	HDRS	DSM-IV (SCID-I)	N = 206, male mean age = 59 years (SD = 10.6), male age range = 34–84 years, female mean age = 62.9 years (SD = 10.7), age range = 38–78 years, 76.1% male Post-myocardial infarction patients *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
Weintraub *et al.*, 2006 Quality assessed: + 	HDRS	DSM-IV	N = 148, mean age = 71 years Participants with idiopathic PD receiving specialist care MMSE = 27 *Prevalence of depression* – **32/148**	**Optimal cut-off 9/10** Sensitivity = 0.88 Specificity = 0.78 PPV = 0.52 NPV = 0.96
Community				
Stukenberg *et al.*, 1990 Quality assessed: + 	HDRS	DSM-III-R (SCID)	N = 177 community dwelling adults over 55 years, age range 56-88 years, mean age = 67.4 years (SD = 7.20), 33% male *Prevalence of depression* – **27/178**	**Any depression** **HDRS** AUC = 0.85 (SE = 0.05)
Mixed community and consultation sample				
Mottram *et al.*, 2000 Quality assessed: + 	HDRS	DSM-IV	N = 414, mean age = 77 years, 111 male, 303 female *Prevalence of depression* – **330/414**	**Depression** **Cut-off ≥ 16** Sensitivity = 0.875 Specificity = 0.991

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				
Laska *et al.*, 2007 Quality assessed: +	MADRS	DSM-IV	N = 89, age range = 45-94 years, mean age = 74 years, 100% aphasic stroke patients, 56% male Aphasic stroke patients involved in a randomised placebo-controlled trial of myoclobemide *Prevalence of depression* – **7/60**	**Depression** **Cut-off ≥ 10 – MADRS** Sensitivity = 66% Specificity = 93% PPV = 29%
Leentjens *et al.*, 2000 Quality assessed: +	MADRS	DSM-IV (SCAN)	N = 63, mean age = 68 years, 63% male Patients with Parkinson's disease (without the presence of dementia) *Prevalence of depression* – **16/63**	**Depressive Disorder** **Optimal cut-off 14/15-MADRS** Sensitivity = 88% Specificity = 89% PPV = 74% NPV = 96% **AUC =** 0.8976
Lightbody *et al.*, 2007	MADRS (10 item)	ICD-10 (psychiatric	N = 28, median age = 72 years (interquartile range 61-78),	**Depression**

Quality assessed: +		assessment)	50% male Participants in hospital for a second week post-stroke; although 36 participants originally consented to the study, only 28 were seen by both the psychiatrist and the nurse to complete both assessments <u>*Prevalence of depression*</u> – **7/28**	**Standard cut-off (not specified in paper)** Sensitivity = 100% Specificity = 65% PPV = 54% NPV = 100%
Mixed community and consultation				
Mottram *et al.*, 2000 Quality assessed: +	MADRS	DSM-IV	N = 414 older adults, mean age = 77 years, 111 male, 303 female <u>*Prevalence of depression*</u> – **330/414**	**Depression** **Cut-off ≥ 21** Sensitivity = 0.72 Specificity = 0.989

Patient Health Questionnaire (PHQ)

Patient Health Questionnaire-2 item (PHQ-2)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Consultation				
Kroenke *et al.*, 2001; Spitzer *et al.*, 1999; Kroenke, 2003; Huang *et al.*, 2005 – all use same participants. Kroenke *et al.*, 2001; Huang *et al.*, 2005 – PHQ-9 Spitzer *et al.*, 1999; Kroenke, 2003 – 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 profession-als)	N = 580 (6000 in total study) The total sample screened = 6000; of these 580 had a mental health practitioner 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-gynaecology sites <u>*Prevalence of depression*</u> - **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%

Patient Health Questionnaire-2 item (PHQ-2)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				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** AUC = 0.93 The AUC was greater for those aged <60 (0.94 versus 0.86) **Any Depressive disorder – N = 106/580** **PHQ-2** **Cut-off ≥ 1** Sensitivity = 90.6% 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**

Patient Health Questionnaire-2 item (PHQ-2)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				Sensitivity = 12.3% Specificity = 99.8% PPV = 92.6% **AUC** **PHQ-2** 0.90 The AUC was lower for those aged <60 (0.88 versus 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% **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%

Patient Health Questionnaire-2 item (PHQ-2)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Lowe *et al.*, 2005 – PHQ-2 (sub-group of Lowe *et al.*, 2004) Lowe *et al.*, 2004a – PHQ-9 results Lowe *et al.*, 2004a – duplicate report Quality assessed: +	PHQ-2	DSM-IV (SCID)	N = 520, mean age = 41.3 years (SD = 14), 36% male Medical outpatients: from 12 GPs, Heidelberg, Germany *Prevalence of major depression* – **71/520** *Prevalence of any depressive disorder* – **132/520**	**Any depression** **Standard cut-off ≥ 3 – PHQ** Sensitivity = 79% Specificity = 86% **Major depression** **Standard cut-off ≥ 3 – PHQ** Sensitivity = 87% Specificity = 78%
Physical health problems				
Williams *et al.*, 2005 Quality assessed: +	Patient Health Questionnaire 2 (PHQ-2)	DSM-IV	N = 316, 100% stroke patients Post-stroke depressed patients recruited from an RCT; non-depressed stroke patients from longitudinal cohort study *Prevalence of depression* - **145/316**	**Major depression** **Cut-off ≥ 3 – PHQ-2** Sensitivity = 83.0% (75.9, 90.2) Specificity = 83.8% (78.8, 88.8) **Any depression** **Cut-off ≥ 3 – PHQ-2** Sensitivity = 77.9% (71.2, 84.7) Specificity = 94.7% (91.4, 90.1)
McManus *et al.*, 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 = 1024, mean age = 67 years, 82% male Participants with coronary heart disease *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**

Patient Health Questionnaire-2 item (PHQ-2)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				Sensitivity = 90% Specificity = 69%
Community				
Li *et al.*, 2007 Quality assessed: +	Patient Health Questionnaire 2 (PHQ-2)	DSM-IV	N = 8 205, mean age = 74.1, 29.5% male Adults aged ≥ 65 who participated in the National Epidemiologic Survey on Alcohol and Related Conditions. The participants were a subset of the NESARC sample which is representative of the US non - institutionalised population, US *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, such as >85, Hispanic and so on.

Patient Health Questionnaire-Whooley questions				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Consultation				
Arroll *et al.*, 2003 Quality assessed: +	Two screening questions from B-PHQ: (1) during the past 2 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?	CIDI	N = 421, median age = 46 years Primary care patients *Prevalence of depression* - **29/421**	**Depression** **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 *et al.*, 2005 Quality assessed: +	Two screening questions: (1) during the past month, have you	Composite International Diagnostic Interview	N = 1025 Primary care patients	**Depression** **Help question alone –** Sensitivity = 75% (60, 85)

Patient Health Questionnaire-Whooley questions				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
	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? Help question: Is this something with which you would like help with?		<u>*Prevalence of depression*</u> - **29/421**	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)
Haughey *et al.*, 2005 Quality assessed: +	PHQ-2 Whooley	DSM-IV	N = 226, mean age = 40 years (SD = 19) People presenting to an urgent care clinic <u>*Prevalence of depression*</u> – **31/226**	**Depression** Sensitivity = 0.9677 Specificity = 0.5179
Robison *et al.*, 2002 Quality assessed: +	PHQ-2 Whooley	CIDI	N = 303, age = 61 years, 88 male, 215 female Primary care, Hispanic population in US <u>*Prevalence*</u> – **67/303**	Sensitivity = 0.92 Specificity = 0.44
Whooley *et al.*, 1997 Quality assessed: +	PHQ-2 (Yes or No scale)	DSM-III – Diagnostic Interview Schedule (DIS)	N = 543, mean age = 53 (SD = 14), 97% male Patients visiting urgent care clinic US, San Francisco <u>*Prevalence of depression*</u> – **97/536**	**Major Depression** **Two Questions:** AUC = 82% (78-86) Sensitivity = 96% (90-99) Specificity = 57% (53-62)
Physical health problems				
Mohr *et al.*, 2007	PHQ-2 Whooley	DSM-IV,	N = 260, age = 51 years (SD =	**Major depression**

Patient Health Questionnaire-Whooley questions				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Quality assessed: +		SCID	10.5) Multiple sclerosis *Prevalence of depression* – **67/260**	**Two Questions:** Sensitivity = 0.51 (0.38-0.63) Specificity = 0.98 (0.94-0.99) **Question 1 or 2:** Sensitivity = 0.99 (0.91-0.00) Specificity = 0.87 (0.81-0.91)
McManus *et al.*, 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?	DSM-IV	N = 1024, mean age = 67 years, 82% male People with coronary heart disease *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%

Patient Health Questionnaire-9 item (PHQ-9)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Consultation				
Azah *et al.*, 2005 Quality assessed: +	PHQ-9 – Malay version	CIDI	N = 265, mean age = 38.7 (SD = 13.8), 38.3% male Patients attending a primary care clinic; those scoring >5 and a selection of those scoring <5 were interviewed by a psychiatrist *Prevalence of depression* –	**Depression** **Optimal cut-off ≥ 5 – PHQ-9** Sensitivity = 69% Specificity = 60.5 % PPV = 60.3% AUC = 0.399

Patient Health Questionnaire-9 item (PHQ-9)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
			97/180	
Corapcioglu & Ozer, 2004 Quality assessed: +	PHQ-9	DSM-IV	N = 1387, age = 29 years, 857 male, 530 female Primary care, Turkey *Prevalence of depression* – **267/1387** *Prevalence of major depression* – **91/1387**	**Depression:** **Standard cut-off – PHQ-9** Sensitivity = 0.76 Specificity = 0.853 **MDD:** **Standard cut-off – PHQ-9** Sensitivity = 0.714 Specificity = 0.919
Diez-Quevedo *et al.*, 2001 Quality assessed: +	PHQ-9	DSM-III-R	N = 1003, mean age = 43 years, 552 male, 451 female Medical and surgical inpatients, Spain *Prevalence of depression*: **263/1003** *Prevalence of major depression* – **148/1003**	**Any depression:** **Standard cut-off – PHQ-9** Sensitivity = 0.89 Specificity = 0.87 **MDD**: **Standard cut-off – PHQ-9** Sensitivity = 0.84 Specificity = 0.92
Eack *et al.*, 2006 Quality assessed: +	PHQ-9	SCID	N= 50, mean age = 39 years, all female Women in psychiatric services seeking treatment for their children *Prevalence of depression* – **17/50**	**MDD** **Standard cut-off – PHQ-9** True Positive = 9 False Positive = 9 False Negative = 5 True Negative = 27 **Any depression** **Standard cut-off – PHQ-9** True Positive = 11 False Positive = 10 False Negative = 6 True Negative = 22
Gilbody *et al.*, 2007 Quality assessed: +	PHQ-9	SCID	N = 96, mean age = 43 years, gender: 22 males, 74 females UK *Prevalence of Major depression* – **36/96**	**MDD** **Standard cut-off – PHQ-9** Sensitivity = 0.917 Specificity = 0.783
Hahn *et al.*, 2006 Quality assessed:	Brief Patient Health Questionnaire (B-	CIDI (DSM-IV/ICD-10)	N = 204, age range = 18-80 years, mean age = 49.6 years	**Affective disorder** (single or recurrent major depression or dysthymia)

Patient Health Questionnaire-9 item (PHQ-9)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
+	PHQ)		13 rehabilitation inpatient clinics in Germany, chronically ill in-patients; 5.9% cardiovascular diseases, 8.8% orthopaedic diseases, 5.4% cancer, 18.6% endocrinologic disease, 53.4% pneumological disease *Prevalence of depression* **– 35/204**	**Optimal cut-off ≥ 11- PHQ-Brief** AUC = 0.844 (0.786-0.891) Sensitivity = 80% Specificity =75.7% PPV = 40.6%
Henkel *et al.*, 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 years (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% Specificity = 86% PPV = 55% NPV = 95%
Kroenke *et al.*, 2001; Spitzer *et al.*, 1999; Kroenke, 2003; Huang *et al.*, 2005 – all use same participants. Kroenke *et al.*, 2001; Huang *et*	PHQ-9	DSM-III-R (SCID and diagnostic questions from the PRIME-MD conducted over the telephone by mental health	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	**Major Depressive disorder** **PHQ-9** **Cut-off ≥ 9** Sensitivity = 95% Specificity = 84% **Cut-off ≥ 10** Sensitivity = 88% Specificity = 88%

Patient Health Questionnaire-9 item (PHQ-9)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
al., 2005 – PHQ-9 Spitzer *et al.*, 2005 1999; Kroenke, 2003 – PHQ-2 Quality assessed: +		profession-als)	The total sample was recruited from 5 general practices, 3 family practices and 7 obstetrics-gynaecology sites) <u>*Prevalence of depression*</u> – **41/580**	**Cut-off ≥ 11** Sensitivity = 83% Specificity = 89% **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%
Lotrakul *et al.*, 2008 Quality assessed: +	PHQ-9 – Thai version	DSM-IV (MINI)	N = 924, mean age = 45.0 years, 26.3% male Patients at a family care clinic. N = 279 were included in a convenience sample assessed with the MINI <u>*Prevalence of major depression*</u> – **13/279** <u>*Prevalence of any depression*</u> – **69/279**	**Major depression** **Optimal cut-off ≥ 9– PHQ** Sensitivity = 84% Specificity = 77% PPV = 21% NPV = 99% **Standard cut-off ≥ 10– PHQ** Sensitivity =74% Specificity = 85% PPV = 27% NPV = 98% **AUC =** 0.89 (0.85–0.92)
Lowe *et al.*, 2004a Lowe *et al.*, 2004b – duplicate report Lowe *et al.*, 2005 – PHQ-2 data Quality assessed: +	PHQ-9	DSM-IV (SCID)	N= 501, mean age = 41.7 years (SD = 13.8), 32.9% male 395 outpatients from Heidelberg University Medical Hospital, 106 patients from 12 GPs in Heidelberg, Germany 21% musculoskeletal disease, 16% endocrine, nutritional & metabolic disease, 10% cardiovascular/circulatory disease, 7% gastrointestinal disease, 6% respiratory	**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**

Patient Health Questionnaire-9 item (PHQ-9)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
			system disease <u>*Prevalence of depression*</u> – **66/501**	**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)
Yeung *et al.*, 2008 Quality assessed: +	PHQ-9 – Chinese Bilingual version	DSM-IV (SCID – Chinese version)	N = 1940 completed the PHQ-9 questionnaires. Of these, 184 had both a PHQ-9 screen and completed the SCID interview. All participants were Chinese Americans attending primary care clinics <u>*Prevalence of depression*</u> – **42/184**	**MDD** **PHQ-9 optimal cut-off ≥ 10** Sensitivity = 81% Specificity = 98% PPV = 92% NPV = 95% AUC = 97 (SE = 0.01)
Physical health problems				
Lamers *et al.*, 2008 Quality assessed: +	PHQ-9	DSM-IV (MINI)	N = 713, mean age = 71.4 years, 51.8% male Chronically ill older adults attending primary care clinics with a diagnosis of diabetes and/ or COPD, recruited as part of the Delta RCT, Netherlands <u>*Prevalence of major depression*</u> – **10.7%** <u>*Prevalence of any depression*</u> – **19.3%**	**Any depression** **PHQ-9 – summed score** **Cut-off point ≥ 5** Sensitivity = 100% (99.5-100) Specificity = 75.1% (73.6-76.6) PPV = 54.9% (52.6-57.2) NPV = 100.0% (99.8-100) **Cut-off point ≥ 6** Sensitivity = 95.6% (94.1-96.8) Specificity = 81.0% (79.6-82.3) PPV = 60.4% (57.9-62.8) NPV = 98.4% (97.8-98.8) **Cut-off point ≥ 7** Sensitivity = 89.0% (86.9-90.8) Specificity = 85.1% (83.9-86.3) PPV = 64.4% (61.8-66.9) NPV = 96.2% (95.5-96.9) **Optimal cut-off point ≥ 6** AUC = 0.94 (0.93-0.94)

Patient Health Questionnaire-9 item (PHQ-9)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				Major depression **PHQ-9 – summed score** **Cut-off point ≥ 6** Sensitivity = 96.7% (94.9-97.9) Specificity = 73.4% (71.9-74.8) PPV = 38.0% (35.6-40.5) NPV = 99.2% (98.8-99.5) **Cut-off point ≥ 7** Sensitivity = 92.2% (89.8-94.1) Specificity = 78.1% (76.7-79.4) PPV = 41.6% (39.0-44.2) NPV = 98.3% (97.8-98.8) **Cut-off point ≥ 8** Sensitivity = 87.8% (84.9-90.2) Specificity = 81.8% (80.5-83.0) PPV = 44.9% (42.1-47.7) NPV = 97.5% (96.9-98.0) **Optimal cut-off point ≥ 7** AUC = 0.92 (0.92-0.93) **Any depression** **PHQ-9 Algorithm scoring** Sensitivity = 49.4% (46.7-52.2) Specificity = 92.4% (91.5-93.3) PPV = 71.8% (68.7-74.6) NPV = 82.4% (81.1-83.6) **Major depression** **PHQ-9 Algorithm scoring** Sensitivity = 41.3% (37.9-44.7) Specificity = 95.8% (95.1-96.4) PPV = 67.2% (62.9-71.2) NPV = 88.6% (87.6-89.5)
McManus *et al.*, 2005 Quality assessed: ++	PHQ-9	DSM-IV	N = 1024, mean age = 67 years, 82% male People with coronary heart disease <u>*Prevalence of depression*</u> – **224/1024**	**Depression** **PHQ-9** AUC **=** 0.86 (0.84, 0.89) **Cut-off point ≥ 10** Sensitivity = 54% Specificity = 90%

Patient Health Questionnaire-9 item (PHQ-9)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Picardi *et al.*, 2005 Quality assessed: +	PHQ-9	SCID	N = 141, age = 38 years, 62 male, 79 female Dermatology patients, Italy <u>*Prevalence of depression*</u> – **44/141** <u>*Prevalence of major depression*</u> – **12/141**	**Depression (MDD) Standard cut-off –PH-9** Sensitivity = 0.55 Specificity = 0.91
Stafford *et al.*, 2007 Quality assessed: ++	PHQ-9	DSM-IV	N = 193, mean age = 64.14 years (SD = 10.37), age range 38–91 years, 80.8% male Patients hospitalised for percutaneous transluminal coronary angioplasty or coronary artery bypass graft surgery, Geelong, Australia <u>*Prevalence of depression*</u> – **54/193**	**Any depression** **PHQ-9** AUC = 0.85 (SE = 0.03) **Cut-off ≥ 5 – PHQ-9** Sensitivity = 81.5% Specificity = 80.6% PPV = 62.0% NPV = 91.8%
Watnick *et al.*, 2005 Quality assessed: +	PHQ-9	DSM-IV	N = 62, age = 63 years, 42 male, 20 female Dialysis patients <u>*Prevalence of major depression*</u> – **12/62**	**Any depression** **Cut-off 10 – PHQ-9** Sensitivity = 0.91 Specificity = 0.92 PPV= 0.71 NPV = 0.98
Williams *et al.*, 2005 Quality assessed: +	PHQ-9	DSM-IV	N = 316, 100% stroke patients Post-stroke depressed patients recruited from an RCT; non-depressed stroke patients from longitudinal cohort study <u>*Prevalence of depression*</u> – **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**

Patient Health Questionnaire-9 item (PHQ-9)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				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)
Community				
Adewuya *et al.*, 2006 Quality assessed: +	PHQ-9	MINI	N = 512, age = 25, 59% male Nigeria, student sample at university *Prevalence: major depression* – **13/512**	**MDD only** **Cut-off ≥ 10 –PHQ-9** Sensitivity = 0.846 Specificity = 0.994 PPV = 0.750 NPV = 0.996
Han *et al.*, 2008 Quality assessed: +	PHQ-9	DSM-IV	N = 1060, age = >60 years, no information on gender Population based geriatric sample, South Korea *Prevalence of depression* – **175/1060** *Prevalence of major depression* – **62/1060**	**Any depression:** **Cut-off 5 – PHQ-9** Sensitivity = 0.80 Specificity = 0.78

Single question

Single Question and two-item screens				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Consultation				
Arroll *et al.*, 2003 Quality assessed: +	Two screening questions from B-PHQ: (1) during the past 2 weeks, have you often been bothered by feeling down, depressed or hopeless?; (2) during the past	CIDI	N = 421, median age = 46 years Primary care patients *Prevalence of depression* – **29/421**	**Depression** **Depression only question:** Sensitivity = 86% Specificity = 72% PPV = 18% **Pleasure only question:** Sensitivity = 83% Specificity = 79%

Single Question and two-item screens				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
	month, have you often been bothered by little interest or pleasure in doing things?			PPV = 22%
Arroll *et al.*, 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? Help question: Is this something with which you would like help with?	CIDI	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)
Howe *et al.*, 2000 Quality assessed: +	Mental Health Inventory – 1-item version (MHI-1)	DSM-IV	N = 100, age = 81 years, 38 male, 62 female Older adults from primary care settings, UK *Prevalence of depression* – **30/100**	**Depression:** Sensitivity = 0.67 Specificity = 0.60
Means-Christensen *et al.*, 2006 Quality assessed: +	Screening question: (1) have you lost interest in things?; (2) have you felt sad, empty or depressed?	CIDI	N= 801, age range = 19-79 years, mean age = 41.49 years (SD = 12.48), 37.8% male Primary care patients in clinic in US *Prevalence of depression* – **41/115**	**Depression** Sensitivity = 88% Specificity = 75% PPV = 19% NPV = 99%
Pomeroy *et al.*,	MHI-1 (Are you	ICD-10	N = 87, mean age = 78.4 years	**Depression**

Single Question and two-item screens				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
2001 Quality assessed: +	depressed?)		(SD = 7.7), 40% male Patients over the age of 60 admitted to medical rehabilitation wards or attending day rehabilitation facilities <u>*Prevalence of depression*</u> – **17/87**	 Sensitivity = 88.2% Specificity = 71.4% AUC = 0.88 (0.79-0.97) PPV = 42.9% NPV = 96.1%
Robison *et al.*, 2002 Quality assessed: ++	Yale-1	CIDI	N = 303, age = 61 years, 88 male, 215 female Primary care, Hispanic population in US <u>*Prevalence of depression*</u> – 67/303	**Depression** Sensitivity = 0.86 Specificity = 0.42
Williams *et al.*, 1999 Quality assessed: +	CES-D	DSM-IV	N = 291, age = 58 years, 93 male, 198 female US <u>*Prevalence of depression*</u> – 40/291	**Depression** Sensitivity = 0.85 Specificity = 0.66
Physical health problems				
Akizuki *et al.*, 2003 Quality assessed: +	'Please grade your mood during the past week by assigning it a score from 0 to 100'	DSM-IV	N = 275; mean age = 52 years; 164 female, 111 male Cancer patients, Tokyo and Kashiwa, Japan <u>*Prevalence of depression*</u> – **168/275**	**Depression: major depression and adjustment disorder** **Standard cut-off 60/65** Sensitivity = 80% Specificity = 61% PPV = 34% NPV = 67%
Kawase *et al.*, 2006 Quality assessed: +	'Are you depressed?'	DSM-IV	N = 305, mean age = 62 Cancer patients, Japan <u>*Prevalence of depression*</u> – 26/305	**Depression: major or minor depression** **Standard cut-off ≥1** Sensitivity = 42% Specificity = 86%
Mohr *et al.*, 2007 Quality assessed: +	Two screening questions (dichotomous): (1) during the past 2 weeks,	DSM-IV (SCID)	N = 260 (502 patients contacted), 73% female, age = 51 Patients with MS attending	**Depression** **Item one only** Sensitivity = 75% Specificity = 94%

Single Question and two-item screens				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
	have you been bothered by feeling down, depressed or hopeless?; (2) during the past 2 weeks, have you often been bothered by little interest or pleasure in doing things?		the KP medical care group, California, US *Prevalence of depression* – **67/260**	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% Specificity = 87% PPV = 72% NPV = 99%
Vahter *et al.*, 2007 Quality assessed: +	'Are you depressed?'	ICD-10	N = 134, mean age = 43.8 years Inpatients from Multiple Sclerosis *Prevalence of depression* – **72/77**	**Depression** Sensitivity = 81% Specificity = 89% PPV = 94% NPV = 70%

Zung's Self-Rating Depression Scale

Zung's Self-Rating Depression Scale				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
Physical health problems				
Agrell & Dehlin, 1989 Quality assessed: +	Zung	Psychiatric interview	N = 40, mean age = 80 years, 45% male Adults attending an outpatient clinic following a stroke *Prevalence of depression* – **17/40**	**Depression** **Recommended cut-off ≥ 45 – Zung** Sensitivity = 76% Specificity = 96% PPV = 93% NPV = 84%
Leung *et al.*, 1998 Quality assessed:	SDS – 20-item Quality assessed	DSM-IV	N = 268 (N = 50 who completed DSM-IV), mean age = 54 years	**Depression:** **Cut-off ≥ 50**

+			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**	Sensitivity = 100% Specificity = 70.7% **Cut-off ≥ 55** Sensitivity = 66.7% Specificity = 90.2% **Cut-off ≥ 60** Sensitivity = 44.4% Specificity = 90.2%
Passik *et al.*, 2001 Quality assessed: +	SDS –20-item BSDS – 11-item	DSM-IV (SCID)	N = 60, mean age = 58.3 years (SD = 11.9), 47% male Oncology patients attending 25 community care cancer inc. oncology clinics in Indiana, US *Prevalence of depression* – **25/60**	**Major depression** **Cut-off ≥ 40** Sensitivity = 100% Specificity = 55.56% **Cut-off ≥ 48** Sensitivity = 66.67% Specificity = 86.11% **Cut-off ≥ 56** Sensitivity = 33.33% Specificity = 100% **Major depression and adjustment disorder** **Cut-off ≥ 40** Sensitivity = 93.94% Specificity = 66.67% **Cut-off ≥ 48** Sensitivity = 57.58% Specificity = 92.60% **Cut-off ≥ 56** Sensitivity = 24.24% Specificity = 100%
Community				
Adalberto, 2006 Quality assessed: +	SDS (20-item)	DSM-IV	N = 266, mean age = 37.4 years Community sample, Bucaramanga, Colombia *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

References to included studies

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