National Institute for Health and Care Excellence

Final draft

Depression in adults: treatment and management

Appendix J2: study characteristics, included and excluded studies for recognition, assessment and initial management

NICE Guideline

Appendices

March 2018

Contents

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 male, 35 female 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 (S.D. 14), male 97% 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: + *Community*	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] *Prevalence of depression* – **3/31**	**Depressive disorders** **Cut-off ≥ 10 - BDI** Sensitivity = 100% Specificity = 75% **Cut-off ≥ 16 - BDI** Sensitivity = 100% Specificity = 89%
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%

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 (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)
Scheinthal *et al*., 2001 Quality assessed: ++	BDI-Fast Screen	DSM-IV	N=75, age = 74 years, 33 males, 42 females 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 (S.D. 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)

Beck Depression Inventory- Short Form (BDI-SF); Beck Depression Inventory- Fast Sc en (BDI-FS);				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
Wilhelm *et al.*, 2004 Quality assessed: + *Community*	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 & inflammatory disorder, 12.3% 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)
Stukenberg *et al.*, 1990 Quality assessed: +	BDI - SF	DSM-III-R (SCID)	N=177 community dwelling adults, age range = 56 - 88 years, mean age = 67.4 (SD=7.20), 33% male *Prevalence of depression (any)*– **27/178**	**Any depression** **BDI** AUC =0.82 (SE .06) **Mild depression** **Optimal cut-off≥ 5 - BDI-SF** Sensitivity = 0.71 Specificity = 0.83 PPV = 74% **Moderate depression** **Optimal cut-off≥ 8 - BDI-SF** Sensitivity = 0.59 Specificity = 0.93 PPV = 88% **Severe depression** **Optimal cut-off≥ 16 - BDI-SF** Sensitivity = 0.29 Specificity = 0.99 PPV = 99%
Viinamaki *et al.*, 1995 Quality assessed: +	BDI-13	DSM-III-R	N=55, mean age = 48 years Participants recruited from a wood factory	**Depression** **Cut-off 8/9** Sensitivity = 61% Specificity = 78% PPV = 67%

Beck Depression I ventory- Short Form (BDI-SF); Beck Depression Inventory- Fast Sc en (BDI-FS);				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
			Prevalence of depression – **23/55**	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: +	CES-D	Diagnostic Interview Schedule (DIS)	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%**	**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**

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
				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)
Klinkman *et al*., 1997 Quality assessed: +	CES-D	DSM-III-R	N=425 weighted sub-sample of 1580 people attending primary care, mean age = 39.6 years, 23.3% male *Prevalence of depression* – **57/425**	**Depression** **Cut-off ≥ 16 – CES-D** Sensitivity = 0.807 Specificity = 0.717 PPV = 0.307 **Cut-off ≥ 22 – CES-D** Sensitivity = 0.614 Specificity = 0.848 PPV = 0.385
Robison *et al*., 2002 Quality assessed: +	CES-D	CIDI	N=303, mean age = 61 years, 88 males, 215 females 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 males, 35 females 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 = .209) **Cut-off ≥ 16** Sensitivity = 95% Specificity = 70% PPV = 28.4% NPV = 99.1% **Cut-off ≥ 34** Sensitivity = 45% Specificity = 95% PPV = 52.9%

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
				NPV = 93.2%
Watson *et al.*, 2004 Quality assessed: +	CES-D	DSM-IV	N = 84, age = > 70. 26% male, mean age 82 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 = 0.0.88 **GDS-30 Alternative cut-offs** **Cut-off ≥ 6** Sensitivity = 100% Specificity = 54% **Cut-off ≥ 7** Sensitivity = 90% Specificity = 60% **Cut-off ≥ 8** Sensitivity = 90% Specificity = 68% **Cut-off ≥ 9** Sensitivity = 90% Specificity = 69% **Cut-off ≥ 10** Sensitivity = 90% Specificity = 72% **Cut-off ≥ 11** Sensitivity = 80% Specificity = 77% **Cut-off ≥ 12** Sensitivity = 80% Specificity = 78% ROC analysis – captured 80% of cases **Cut-off ≥ 13** Sensitivity = 70% Specificity = 81% **Cut-off ≥ 14** Sensitivity = 70% Specificity = 86%

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
				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% 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 (S.D. 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 males, 219 females US *Prevalence of depression:* **36/296**	**Depression** Sensitivity = 0.88 Specificity = 0.75

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
Zich *et al.*, 1990 Quality assessed: + *Community*	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%
Papassotiro-poulos & Heun, 1999 Quality assessed: +	CES-D	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 ≥ 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	CES-D – Burnham Screen	DSM-IV	N=436, age = 68 years, all female	**Usual cut-off (0.06)** Sensitivity = 74%

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
Quality assessed: +			US *Prevalence of depression -* **30/436**	Specificity = 87%
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

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 = 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** **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%

General Health Questionnaire-12				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				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% **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%

General Health Questionnaire-12				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				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, age range 18-80, mean age = 49.6, 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%) *Prevalence of depression* – **10/206**	**AUC** = 0.65 (0.57, 0.72) **Cut-off ≥ 5:** Sensitivity = 75% Specificity = 51.7% PPV = 17.3%
Harter *et al*., 2006 Quality assessed: +	GHQ-12	M-CIDI	N= 569, age range 22-83, mean age 54, 50% male 36% musculo-skeletal 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%

General Health Questionnaire-12				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
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
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%

General Health Questionnaire-12				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				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	Clinical Interview Schedule (Revised - 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% **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	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

General Health Questionnaire-12				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Quality assessed: +				AUC = 0.76 (SD=0.026)
Community				
Costa *et al*., 2006 Quality assessed: +	GHQ-12	ICD-10	N=126, age = 81 years, 36 male, 90 female Elderly people, Brazil *Prevalence of depression* - **65/126**	Sensitivity = 0.661 Specificity = 0.623
Donath, 2001 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 & 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

General Health Questionnaire-12				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
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%

General Health Questionnaire-28				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				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% 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%

Geriatric Depression Scale (GDS)

Geriatric Depression Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Consultation				
Blank *et al.*, 2004 Quality assessed: +	GDS – 30	Diagnostic Interview Schedule (DIS)	N = 360, age = >60 years, mean age 77, 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) *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%**	**Major depression** **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 (SD 6.5), 34% male Cognitively intact outpatients	**Depression** **Cut-off ≥ 11** Sensitivity = 81% Specificity = 61%

Geriatric Depressic Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
			Prevalence of depression – **16/67**	**Cut-off ≥ 14** Sensitivity = 44% Specificity = 75% **Cut-off ≥ 17** Sensitivity = 31% Specificity = 94%
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 males, 122 females Primary care, Spain *Prevalence of depression* - **60/192** (mainly psychotic depression)	**Depression** **Cut-off ≥11** Sensitivity = 0.817 Specificity = 0.68
Jongenelis *et al*., 2007 Quality assessed: +	GDS-30	DSM-IV	N= 333, age = 79 years, 104 males, 229 females 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 (S.D. 4.1), 100% male Medically ill hospitalised patients, Durham, US Mean MMSE score = 25.7 (S.D. 3.3) *Prevalence of depression* – **11/109**	**Major depression** **Cut-off ≥ 11 - GDS** Sensitivity = 82% Specificity = 76% PPV = 27% NPV = 97%
Laprise & Vezina, 1998	GDS-30	DSM-III-R	N=66, mean age = 78 years, 31 males, 35 females	**Depression**

Geriatric Depressic Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Quality assessed: +			Nursing home residents, Canada (French) *Prevalence of depression –* **27/66**	**Cut-off 10-GDS** Sensitivity = 0.92 Specificity = 0.513
Lyness *et al*., 1997 Quality assessed: +	GDS–30	DSM-III-R	N = 130, mean age = 71 years (SD – 6.8), 41.5% male Older adults attending primary care *Prevalence of major depression –* **14/130** *Prevalence of any depression –* **24/130**	**Major depression** **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), male – 35% 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	**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

Geriatric Depressic Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
			from the study. *Prevalence of depression –* **62/154**	
Neal & Baldwin, 1994 Quality assessed: +	GDS-30	GMS-AGECAT	N = 45, mean age – 77.2, 38% male Older adults attending medical outpatient clinics in three UK hospitals. *Prevalence of depression:-* **10/45 (22%)**	**Depression** **Cut-off ≥ 9 – GDS-30** Sensitivity = 0.63 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 (SD – 7.7), 40% male Patients over the age of 60 admitted to medical rehabilitation wards or attending day rehabilitation facilities	**Depressive episode** **GDS-30** **Optimal cut-off ≥ 11** Sensitivity = 100% Specificity = 62.9% AUC = 0.85 (0.77, 0.94) PPV = 39.5%

Geriatric Depressic Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
			Prevalence of depression – **17/87**	NPV = 100%
Robison *et al.*, 2002 Quality assessed: +	GDS-30	CIDI	N=303, age = 61 years, 88 males, 215 females Primary care, Hispanic population, US *Prevalence of depression* - 67/303	Sensitivity = 0.81 Specificity = 0.65
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 males, 349 females 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 males, 276 females General Outpatient Clinic, Portugal *Prevalence of depression* - **210/484**	Cut-off 12 Sensitivity = 0.87 Specificity = 0.73

Geriatric Depressic Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
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 *Prevalence of depression* – **10/78**	**Major depression** **GDS-30** **Standard cut-off ≥ 12** Sensitivity = 60% (50, 70) Specificity = 93% (88, 98) PPV = 55% NPV = 95% AUC = 0.88 **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%

Geriatric Depressic Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				Specificity = 97% **Cut-off ≥ 14** Sensitivity = 60% Specificity = 99% **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
Community				
Carrete *et al.*, 2001 Quality assessed: +	GDS-30	DSM-IV (SCID)	N= 169, mean age = 72 years, 57 males, 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 males, 90 females 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 Symptom Checklist and the research diagnostic criteria/	N = 439, mean age = 74 years, % male - not reported Community dwelling older adults attending either an activity centre or dining facility *Prevalence of depression*- **36/439**	**Major depression** **Cut-off 11 – GDS 30** False Positive = 53 (18%) False Negative = 6 (17%)
Sanchez-Garcia, *et al*., 2008	GDS-30	DSM-IV	N =534, mean age = 71.5 years (SD 7.0), 32% male	**Any depression**

Geriatric Depressic Scale – 30 item				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Quality assessed: ++			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**	**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 SCAN	N = 201 All people aged over 75 in one large GP practice list undergoing a health check, Leicester, UK *Prevalence of depression* - **12/201 – 6%**	**Depression** **Cut-off ≥2** Sensitivity = 100% Specificity = 49.9% PPV = 11.2% NPV = 100.0% **Cut-off ≥3** Sensitivity = 100% Specificity = 71.9% PPV = 18.4% NPV = 100.0% **Cut-off ≥4** Sensitivity = 80% Specificity = 81.6% PPV = 21.6%

Geriatric Depressic Scale – 15 item (and Brief GDS)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				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%** *Prevalence of major depression in primary care* – **11%** *Prevalence of major depression in hospital* – **8%** *Prevalence of major depression in nursing homes* – **9%**	**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** **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)

Geriatric Depressic Scale – 15 item (and Brief GDS)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				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 years), 41% male Interview sample: mean age = 80.3 years (SD 7.49 years), 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 Quality assessed: +	GDS-15	GMS	N=194, age = 74 years, 126 females, 72 males *Prevalence of depression -* **67/194**	**Depression** Sensitivity = 91% Specificity = 72%
Friedman *et al.*, 2005 Quality assessed: +	GDS-15	Mini International Neuropsych-iatric Interview (MINI)	N = 960, mean age = 79.3 years (SD 7.4), 25.4% male Functionally impaired but cognitively intact older adults participating in a RCT	**Depression** **Standard Cut-off ≥6** Sensitivity = 81.45% Specificity = 75.36% AUC = 0.858 (SE – 0.018)

Geriatric Depressic Scale – 15 item (and Brief GDS)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
			assessing a primary care health intervention, US *Prevalence of depression: -* **124/960 (12.9%)**	
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*., 2007 Quality assessed: +	GDS-15	DSM-IV	N= 333, age = 79 years, 104 males, 229 females 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 –* **14/130** *Prevalence of any depression –* **24/130**	**Major depression** **Cut-off 5 GDS-15** Sensitivity = 92% Specificity = 81% AUC = 0.935 (0.046)
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	**Depression** **Optimal cut off ≥ 5 – GDS-15** Sensitivity = 71.8% Specificity = 78.2% AUC = 0.7933 (SE – 0.0308)

Geriatric Depressic Scale – 15 item (and Brief GDS)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
			were excluded from the study (492 cases used in the analysis due to missing data) *Prevalence of depression: -* **81/526 (15.4%)**	**Standard cut off ≥ 5 – GDS-15** Sensitivity = 60.6% Specificity = 86.2%
Nam Bae & Cho, 2004 Quality assessed: ++	Short GDS – Korean version (SGDG-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 males, 27 females *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 (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-4** **Optimal cut-off ≥ 1** Sensitivity = 82.4% Specificity = 67.1% AUC = 0.80 (0.68, 0.93) PPV = 37.8% NPV = 94.0% **GDS-15** **Optimal cut-off ≥ 5** Sensitivity = 82.4% Specificity = 60.0 AUC = 0.82 (0.71, 0.93) PPV = 33.3% NPV = 93.3%
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	**Any depression** **GDS-15** Sensitivity = 0.92 (0.88, 0.96) Specificity = 0.83 (0.78, 0.88)

Geriatric Depressic Scale – 15 item (and Brief GDS)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
			from three settings: an acute geriatric ward (33%), a geriatric outpatient clinic (28%) and a nursing home (39%) *Prevalence of depression* – **87/181**	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 males, 42 females US geriatric medical setting *Prevalence of depression* – **8/75**	**Cut-off ≥ 7** Sensitivity = 1 Specificity = 0.79
Van Marwijk *et al.*, 1995 Quality assessed: +	GDS–15	DSM-III	N=586, age = 65-94 years, 237 males, 349 females 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%
Community				
De Craen *et al.*, 2003 Quality assessed: +	GDS-15	DSM-IV	N=79, median age = 87 years, 24 males, 55 females 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	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)

Geriatric Depressic Scale – 15 item (and Brief GDS)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
information on population and all results)				**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, mean age = 49.6, 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 ≥ 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%

Hospital Anxiety and Depression Scale (HADS – Depression only)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Harter *et al*., 2006 Quality assessed: +	HADS	M-CIDI	N= 569, age range 22-83, mean age 54, 50% male 36% musculo-skeletal 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 (6.79), male = 43% 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 ≥ 8 – HADS** Sensitivity = 62% (36-82) Specificity = 69% (53-82) PPV = 42% (23-64) NPV = 83% (66-93) **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 males, 181 females 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 males, 56 females Elderly primary care patients, Hong Kong *Prevalence of depression* – **9/100**	Sensitivity = 0.78 Specificity = 0.91

Hospital Anxiety and Depression Scale (HADS – Depression only)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
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% musculo-skeletal disease, 16% endocrine, nutritional & metabolic disease, 10% cardiovascular/circulatory disease, 7% gastrointestinal disease, 6% respiratory system disease *Prevalence of depression* – **66/501**	**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) 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 *Prevalence of depression* – **14/160**	**Depression** **Cut-off ≥ 2 – BDI-PC** AUC = 0.892 Sensitivity = 100% (not calculated] Specificity = 20.5% (5.5, 32.4) **Cut-off ≥ 5 – BDI-PC** AUC = 0.892 Sensitivity = 100% (not calculated] Specificity = 50.0% (35.2, 64.8) **Cut-off ≥ 6 – BDI-PC** AUC = 0.892 Sensitivity = 100% (not calculated] Specificity = 65.9% (51.9, 79.9) **Cut-off ≥ 8 – BDI-PC** AUC = 0.892 Sensitivity = 75% (32.6, 100]

Hospital Anxiety and Depression Scale (HADS – Depression only)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				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)
Upadhyaya & Stanley, 1997 Quality assessed: +	HADS	GMS-AGECAT	N = 72, age = 71.2, 37 males, 35 females 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%

Hamilton Depression Rating Scale (HDRS)

Hamilton Depression Rating Scale (HDRS)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
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 (SD=7.20), 33% male *Prevalence of depression* – **27/178**	**Any depression** **HDRS** AUC = 0.85(SE .05)
Mixed community and consultation sample				
Mottram *et al.*, 2000 Quality assessed: +	HDRS	DSM-IV	N=414. mean age = 77 years, 111 males, 303 males *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, Stockholm, Sweden *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**
Mixed community and consultation				
Mottram *et al.*, 2000 Quality assessed: +	MADRS	DSM-IV	N=414 older adults, mean age = 77 years, 111 males, 303 males *Prevalence of depression* - **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, Huang2005 – PHQ-9	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-	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.	**MDD** Sensitivity = 0.88 Specificity = 0.88 **Major depressive disorder** **PHQ-2** **Cut-off ≥ 1** Sensitivity = 97.6% Specificity = 59.2% PPV = 15.4%

Patient Health Questionnaire-2 item (PHQ-2)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Spitzer *et al*., 1999, Kroenke, 2003 – PHQ-2 Quality assessed: +		als)	The total sample was recruited from 5 general practices, 3 family practices and 7 obstetrics-gynecology sites) *Prevalence of depression* - **41/580**	**Cut-off ≥ 2** Sensitivity = 92.7% Specificity = 73.7% PPV = 21.1% **Cut-off ≥ 3** Sensitivity = 82.9% Specificity = 90.0% PPV = 38.4% **Cut-off ≥ 4** Sensitivity = 73.2% Specificity = 93.3% PPV = 45.5% **Cut-off ≥ 5** Sensitivity = 53.7% Specificity = 96.8% PPV = 56.4% **Cut-off ≥ 6** Sensitivity = 26.8% Specificity = 99.4% PPV = 78.6% AUC = 0.93 The AUC was greater for those aged <60 (0.94 vs 0.86) **Any depressive disorder – N = 106/580** **PHQ-2** **Cut-off ≥ 1** Sensitivity = 90.6% 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%

Patient Health Questionnaire-2 item (PHQ-2)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				Cut-off ≥ 5 Sensitivity = 31.1% Specificity = 98.7% PPV = 84.6% **Cut-off ≥ 6** Sensitivity = 12.3% Specificity = 99.8% PPV = 92.6% AUC = 0.90 The AUC was lower for those aged <60 (0.88 vs 0.95) **MDD** Sensitivity = 0.88 Specificity = 0.88 **Major depressive disorder** **PHQ-9** **Cut-off ≥ 9** Sensitivity = 95% Specificity = 84% **Cut-off ≥ 10** Sensitivity = 88% Specificity = 88% **Cut-off ≥ 11** Sensitivity = 83% Specificity = 89% **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.*, 2004a) Lowe *et al.*, 2004a – PHQ-9 results Lowe *et al.*, 2004b – 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 in Heidelberg *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%
Community				
Li *et al.*, 2007 Quality assessed: +	Patient Health Questionnaire 2 (PHQ-2)	DSM-IV	N=8, mean age = 74.1, 29.5% male 205 adults aged ≥ 65 who participated in the National Epidemiologic Survey on Alcohol and Related Conditions The participants were a subset of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) sample which is representative of the U.S. non-institutionalised population. *Prevalence of depression* – **323/8205**	**Depression** **PHQ-2** **Two Questions:** Sensitivity = 100% Specificity = 77% (75.8, 78.0) AUC = 0.88 (0.87, 0.89) PPV = 14.3% (12.5, 16.1) Paper further reports criterion validity of the PHQ-2 for different breakdowns of the population for example, >85, Hispanic, etc.

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 month, have you often been bothered by feeling down,	CIDI	N=421, median age = 46 years Primary care patients *Prevalence of depression* - **29/421**	**Depression** **2 items:** Sensitivity = 97% Specificity = 67% PPV = 18%

Patient Health Questionnaire-Whooley questions Study	Identification tool	Comparator/ caseness	Population	Results
	depressed or hopeless?; (2) During the past month, have you often been bothered by little interest or pleasure in doing things?			**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 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)
Haughey *et al.*, 2005 Quality assessed: +	PHQ-2 Whooley	DSM-IV	N = 226, mean age = 40 years (SD =19 years) People presenting to an urgent care clinic. *Prevalence of depression* – **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 males, 215 females Primary care, Hispanic population in US *Prevalence of depression* – **67/303**	Sensitivity = 0.92 Specificity = 0.44

Patient Health Questionnaire-Whooley questions				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Whooley *et al.*, 1997 Quality assessed: +	PHQ-2 (Yes or No scale)	DSM-III-Diagnostic Interview Schedule (DIS)	N = 543, mean age = 53 (S.D. 14), 97% male Patients visiting urgent care clinic, San Francisco, US *Prevalence of depression* - **97/536**	**Major Depression** **Two Questions:** AUC = 82% (78-86) Sensitivity = 96% (90-99) Specificity = 57% (53-62)

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: -* **97/180**	**Depression** **Optimal cut-off ≥ 5 – PHQ-9** Sensitivity = 69% Specificity = 60.5 % PPV = 60.3% AUC = 0.399
Corapcioglu & Ozer, 2004 Quality assessed: +	PHQ-9	DSM-IV	N=1387, age = 29 years, 857 males, 530 females 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 males, 451 females 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	**MDD** **Standard cut-off – PHQ-9** True Positive = 9

Patient Health Questionnaire-9 item (PHQ-9)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
+			Women in psychiatric services seeking treatment for their children *Prevalence of depression:* - **17/50**	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, 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-PHQ)	CIDI (DSM-IV/ICD-10)	N = 204, age range = 18-80, mean age = 49.6 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 or recurrent major depression or dysthymia) **Optimal cut-off ≥ 11- PHQ-Brief** AUC = 0.844 (0.786-0.891) Sensitivity = 80% Specificity = 75.7% PPV = 40.6%
Henkel *et al.*, 2004a & b Quality assessed: +	Brief Patient Health Questionnaire (B-PHQ)	CIDI – ICD-10 (and DSM-IV research criteria for minor depression)	N = 448, of which 431 had an independent clinical diagnosis, mean age 48.98 (same participants as study above) Primary care patients *Prevalence of depression (any)* - **82/431** *Prevalence of depression (major)* - **50/431** *Prevalence of depression (dysthymia disorder)* – **24/431**	**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

Patient Health Questionnaire-9 item (PHQ-9)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
			Prevalence of depression (minor) - **54/431**	**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 2005 – all use same participants Kroenke *et al.*, 2001, Huang2005 – PHQ-9 Spitzer *et al.*, 1999, Kroenke, 2003 – PHQ-2 Quality assessed: +	PHQ-9	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 MHP interview within 48 hours and were used in the analysis. They did not differ from the total sample on any demographic or functional item. The total sample was recruited from 5 general practices, 3 family practices and 7 obstetrics-gynecology sites). *Prevalence of depression* - **41/580**	**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%
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. *Prevalence of major depression* – **13/279** *Prevalence of any depression* – **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%

Patient Health Questionnaire-9 item (PHQ-9)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
				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 21% musculo-skeletal disease, 16% endocrine, nutritional & metabolic disease, 10% cardiovascular/circulatory disease, 7% gastrointestinal disease, 6% respiratory system disease *Prevalence of depression* - **66/501**	**Any depression** **Cut-off ≥ 9– PHQ** Sensitivity = 87% (79, 92) Specificity = 76% (72, 80) **Cut-off ≥ 10– PHQ** Sensitivity = 81% (73, 87) Specificity = 82% (78, 86) **Cut-off ≥ 11– PHQ** Sensitivity = 79% (70, 85) Specificity = 85% (81, 89) **Major depression** **Cut-off ≥ 11– PHQ** Sensitivity = 98% (92, 100) Specificity = 80% (76, 83) **Cut-off ≥ 12– PHQ** Sensitivity = 95% (87, 99) Specificity = 84% (80, 87) **Cut-off ≥ 13– PHQ** Sensitivity = 88% (78, 95) Specificity = 87% (84, 90)
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 *Prevalence of depression* – **42/184**	**MDD** **PHQ-9 optimal cut-off ≥ 10** Sensitivity = 81% Specificity = 98% PPV = 92% NPV = 95% AUC = 97 (SE 0.01)
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

Patient Health Questionnaire-9 item (PHQ-9)				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Han *et al*., 2008 Quality assessed: +	PHQ-9	DSM-IV	N=1060, age = >60 years, no information on gender South Korea, population based geriatric sample *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 month, have you often been bothered by feeling down, depressed or hopeless?; (2) During the past month, have you often been bothered by little interest or pleasure in doing things?	Composite International Diagnostic Interview (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% 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	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)

Single Question and two-item screens				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
	bothered by little interest or pleasure in doing things? Help question: Is this something with which you would like help with?			**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 males, 62 females Older adults from UK primary care settings *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, 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.*, 2001 Quality assessed: +	MHI-1 (Are you depressed?]	ICD-10	N = 87, mean age 78.4 (SD – 7.7 yrs), 40% male Patients over the age of 60 admitted to medical rehabilitation wards or attending day rehabilitation facilities *Prevalence of depression* – **17/87**	**Depression** Sensitivity = 88.2% Specificity = 71.4% AUC = 0.88 (0.79-0.97) PPV = 42.9% NPV = 96.1%
Robison *et al.*, 2002 Quality assessed: ++	Yale-1	CIDI	N=303, age = 61 years, 88 males, 215 females Primary care, Hispanic population in US *Prevalence of depression* – **67/303**	**Depression** Sensitivity = 0.86 Specificity = 0.42

Single Question and two-item screens				
Study	**Identification tool**	**Comparator/ caseness**	**Population**	**Results**
Williams *et al.*, 1999 Quality assessed: +	CES-D	DSM-IV	N=291, age = 58 years, 93 males, 198 females US *Prevalence of depression -* 40/291	**Depression** Sensitivity = 0.85 Specificity = 0.66

Zung's Self-Rating Depression Scale

Zung's Self-Rating Depression Scale				
Study	**Identification tool**	**Comparator**	**Population**	**Results**
Community				
Adalberto, 2006 Quality assessed: +	SDS (20 item)	DSM-IV	N = 266; mean age = 37.4 years Community sample, Colombia, Bucaramanga *Prevalence of depression -* **44/266**	**Depression: major depressive disorder** **Standard cut-off ≥ 40** Sensitivity = 88.6% Specificity = 74.8% PPV = 41.1% NPV = 97.1% AUC = 0.901

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Grafe, K., Zipfel, S., Herzog, W., *et al.* (2004) Screening psychischer storungen mit dem gesundheitsfragebogen fur patienten (PHQ-D). *Diagnostica, 50,* 171-181.