

## Depression: Summary table of the psychometric properties of screening tools

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### Beck Depression Inventory (BDI)

Beck Depression Inventory (BDI-21)				
Study	Identification tool	Comparator	Population	Results
<b>Consultation</b>				
Dutton 2004  Quality assessed: ++	BDI-21	DSM-IV	N=220, Age: 49 years Gender: 105 males, 115 females  African American primary care patients  <i>Prevalence of depression -</i> <b>63/220</b>	<b>Major Depression</b> True Positive = 57 False Positive = 25 False Negative = 8 True Negative = 130
Laprise 1998  Quality assessed: +	BDI-21	DSM-III-R	N=66, age = 78 years, gender: 31 males, 35 females  Nursing home residents, Canada (French)  <i>Prevalence of depression -</i> <b>27/66</b>	<b>Major depression</b>  BDI: <b>Cut-off 10</b> Sensitivity =0.963 Specificity = 0.462

Beck Depression Inventory (BDI-21)				
Study	Identification tool	Comparator	Population	Results
Whooley 1997  Quality assessed: +	BDI-30 item	DSM-III- Diagnostic Interview Schedule (DIS)	N = 543 Patients visiting urgent care clinic  Mean age = 53 (S.D. 14)  Male = 97%  USA, San Francisco  <i>Prevalence of depression -</i> <b>97/536</b>	<b>Major depression</b>  <b>Standard cut-off <math>\geq 10</math> - BDI-30 item</b> AUC - 87% (82-91) Sensitivity -89% (81-95) Specificity -64% (59-68)
Yeung 2002  Quality assessed: +	BDI-21	DSM-III-R	N = 815; mean age = 50 years; 304 female, 199 male  Chinese-American primary care patients; US  <i>Prevalence of depression -</i> <b>53/180</b>  <i>Only those who screened positive on the BDI &amp; agreed to be interviewed for DSM and a selective sample of those who screened negative on the BDI were interviewed with a DSM</i>	<b>Depression: major depressive disorder</b>  <b>Cut-off <math>\geq 16</math></b> Sensitivity - 79% Specificity - 91% PPV - 79% NPV - 91%
Zich 1990  Quality assessed: +	BDI-21	DSM-III (Diagnostic Interview Schedule)	N = 31 primary care patients who completed both the BDI and DIS  US, San Francisco  [does not give demographic information specific to this sub-group of patients]  <i>Prevalence of depression -</i> <b>3/31</b>	<b>Depressive disorders</b>  <b>Cut-off <math>\geq 10</math> - BDI</b> Sensitivity - 100% Specificity - 75% <b>Cut-off <math>\geq 16</math> - BDI</b> Sensitivity - 100% Specificity - 89%
<b>Community</b>				
Viinamaki 1995  Quality assessed: +	BDI-13	DSM-III-R	N=55  Mean age: 48 years  Participants recruited from a wood factory  <i>Prevalence of depression -</i> <b>23/55</b>	<b>Depression</b>  <b>Cut-off 8/9</b> Sensitivity - 61% Specificity- 78% PPV - 67% NPV- 74%  <b>Standard cut-off <math>\geq 10</math></b>

Beck Depression Inventory (BDI-21)				
Study	Identification tool	Comparator	Population	Results
				Sensitivity - 45% Specificity- 84% PPV - 67% NPV- 68%  <b>Cut-off 10/11</b> 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
<b>Consultation</b>				
Parker 2002  Quality assessed: +	Beck Depression Inventory for Primary Care (BDI-PC)	DSM-IV (CIDI)	N= 302 outpatients from cardiology (29.5%), respiratory (23.2%), gastroenterology (11.6%). Nephrology (14.9%), haematology (7.9%), rheumatology (5.0%), radiation oncology (4.6%), endocrinology (3.3%)  Mean age = 46.5 (SD = 12.9); 63.2% male  111 (36.8%) patients had chronic physical illness; mean duration = 9 years  Australia, Sydney  <u>Prevalence of depression</u> - <b>14/160</b>	<b>Depression</b>  <b>Cut-off ≥ 4 - BDI-PC</b> AUC - 0.848 Sensitivity - 83.3% (62.2, 100) Specificity - 67.0% (57.4, 76.7) <b>Optimal cut-off ≥ 5 - BDI-PC</b> AUC - 0.848 Sensitivity - 83.3% (62.2, 100) Specificity - 75.8% (67.0, 84.6) <b>Cut-off ≥ 6 - BDI-PC</b> AUC - 0.848 Sensitivity - 66.7% (40.0, 90.3) Specificity - 82.4% (74.6, 90.2)
Scheinthal 2001  Quality assessed: ++	BDI-Fast Screen	DSM-IV	N=75, Age: 74 years, Gender: 33 males, 42 females  US geriatric medical setting  <u>Prevalence of depression</u> - <b>8/75</b>	<b>Depression</b>  <b>Cut-off 4</b> Sensitivity 1 Specificity 0.84

Beck Depression Inventory- Short Form (BDI-SF); Beck Depression Inventory- Fast Screen (BDI-FS);				
Study	Identification tool	Comparator	Population	Results
Whooley 1997  Quality assessed: +	BDI-13	DSM-III- Diagnostic Interview Schedule (DIS)	N = 543 Patients visiting urgent care clinic  Mean age = 53 (S.D. 14)  Male = 97%  USA, San Francisco  <i>Prevalence of depression - 97/536</i>	<b>Major depression</b>  <b>Cut-off <math>\geq</math> 5 BDI-13 item</b> AUC - 86% (82-90) Sensitivity -92% (85-97) Specificity -61% (56-66)
Wilhelm 2004  Quality assessed: +	Beck Depression Inventory for Primary Care (BDI-PC)	DSM-IV	N= 212 medical out- and in- patients; 2.8% neurological disorders, 25.5% cardiopulmonary disease, 9.4% malignancy, 12.3% loss of mobility, 13.7% endocrine disorder, 3.8% infectious & inflammatory disorder, 12.3% renal disease, 20.2% other disease  Age range = 16 - 91 y/o; 55.2% female  <i>Prevalence of depression (major depression) - 49/212</i>	<b>Major depression</b>  <b>BDI</b> AUC - 0.85 (79, 92) Sensitivity - 91% (73, 98) Specificity - 0.62 (0.55, 0.69)  <b>Any depression (major or minor)</b> <b>BDI</b> AUC - 0.86 (80, 91) Sensitivity - 0.87 (0.75, 0.94) Specificity - 0.69 (0.62, 0.76)  <b>Affective disorder</b> <b>BDI</b> AUC - 0.89 (84, 94) Sensitivity - 0.89 (0.77, 0.95) Specificity - 0.72 (0.64, 0.78)
<b>Community</b>				
Stukenberg1990  Quality assessed: +	BDI - SF	DSM-III-R (SCID)	N=177 community dwelling adults, over 55 years  Mean age = 67.4 (SD=7.20yrs)  Age range 56-88years  33% male  <i>Prevalence of depression (any)- 27/178</i>	<b>Any depression</b>  <b>BDI</b> AUC - 0.82(SE .06)  <b>Mild Depression</b>  <b>Optimal cut-off<math>\geq</math> 5 - BDI-SF</b> Sensitivity - 0.71 Specificity - 0.83 PPV - 74%  <b>Moderate Depression</b>  <b>Optimal cut-off<math>\geq</math> 8 - BDI-SF</b> Sensitivity - 0.59 Specificity - 0.93 PPV - 88%

Beck Depression Inventory- Short Form (BDI-SF); Beck Depression Inventory- Fast Screen (BDI-FS);				
Study	Identification tool	Comparator	Population	Results
				<b>Severe Depression -</b>  <b>Optimal cut-off <math>\geq 16</math> - BDI-SF</b> Sensitivity - 0.29 Specificity - 0.99 PPV - 99%
Viinamaki 1995  Quality assessed: +	BDI-13	DSM-III-R	N=55  Mean age: 48 years  Participants recruited from a wood factory  <u>Prevalence of depression - 23/55</u>	<b>Depression</b>  <b>Cut-off 8/9</b> Sensitivity - 61% Specificity- 78% PPV - 67% NPV- 74%  <b>Standard cut-off <math>\geq 10</math></b> Sensitivity - 45% Specificity- 84% PPV - 67% NPV- 68%  <b>Cut-off 10/11</b> 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
<b>Consultation</b>				
Blank2004  Quality assessed: +	CES-D	Diagnostic Interview Schedule	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  Male = 37%  <u>Prevalence of major depression - 9%</u>  <u>Prevalence of any depression -</u>	<b>Major depression</b>  <b>Primary care sample</b>  <b>CES-D</b> <b>Cut-off <math>\geq 16</math></b> Sensitivity - 79% (51-94) Specificity - 75% (71-77)  AUC - 0.86 (0.77-0.95)  <b>Cut-off <math>\geq 20</math> - recommended</b> Sensitivity - 79% (51-94) Specificity - 80% (77-82)  <b>Nursing Home sample</b>

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	Identification tool	Comparator	Population	Results
			<p><b>16%</b></p> <p><u>Prevalence of major depression in primary care – 11%</u></p> <p><u>Prevalence of major depression in hospital – 8%</u></p> <p><u>Prevalence of major depression in nursing homes – 9%</u></p>	<p><b>CES-D</b>  <b>Cut-off ≥16</b>                      Sensitivity - 71% (32-95)                      Specificity - 85% (81-87)</p> <p>AUC - 0.82 (0.60- 1.03)</p> <p><b>Cut-off ≥14 - recommended</b>                      Sensitivity - 86% (44-99)                      Specificity - 78% (74-79)</p> <p><b>Hospital sample</b></p> <p><b>CES-D</b>  <b>Cut-off ≥16</b>                      Sensitivity - 75% (44-93)                      Specificity - 76% (73-78)</p> <p>AUC - 0.91 (0.84- 0.98)</p> <p><b>Cut-off ≥14 - recommended</b>                      Sensitivity - 100% (70-100)                      Specificity - 70% (62-78)</p>
Klinkman 1997	CES-D	DSM-III-R	<p>N=425 weighted sub-sample of 1580 people attending primary care.</p> <p>Mean age - 39.6 years</p> <p>Male - 23.3%</p> <p><u>Prevalence of depression - 57/425</u></p>	<p><b>Depression</b></p> <p><b>Cut-off ≥ 16 - CES-D</b>                      Sensitivity - 0.807                      Specificity - 0.717                      PPV - 0.307</p> <p><b>Cut-off ≥ 22 - CES-D</b>                      Sensitivity - 0.614                      Specificity - 0.848                      PPV - 0.385</p>
Robison 2002	CES-D	CIDI	<p>N=303, Primary care, Hispanic population in US</p> <p>Mean Age = 61 years</p> <p>gender: 88 males, 215 females</p> <p><u>Prevalence of depression - 67/303</u></p>	<p><b>Depression</b></p> <p><b>Standard cut-off - CES-D</b>                      Sensitivity - 0.73                      Specificity - 0.72</p>
Schein 1997	CES-D	DSM-III-R	<p>N=76, Age = 70 years                      Gender= 41 males, 35 females</p> <p>US, Medically ill inpatients</p> <p><u>Prevalence of depression -:</u></p>	<p><b>Depression</b>                      Sensitivity 0.73                      Specificity 0.84</p> <p><b>Major Depression</b>                      Sensitivity 0.90</p>

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	Identification tool	Comparator	Population	Results
			26/76	Specificity 0.84
Thomas 2001  Quality assessed: +	CES-D	DSM-IV	N= 179 women  Mean age: 44 years  Participants were all low income women attending primary care clinics  <u>Prevalence of depression</u> - 9/179	<b>Major depressive disorder</b>  AUC - 0.89 (SE = .209)  <b>Cut-off ≥ 16</b> Sensitivity -95% Specificity -70% PPV - 28.4% NPV - 99.1% AUC -  <b>Cut-off ≥ 34</b> Sensitivity -45% Specificity -95% PPV - 52.9% NPV - 93.2%
Watson 2004  Quality assessed: +	CES-D	DSM-IV	N = 84 Age over 70 and residing in two Continuing Care Retirement Communities in US. 26% male, mean age 82  <u>Prevalence of depression</u> - 10/78	<b>Major Depression</b>  <b>CES-D</b> <b>Standard cut-off ≥ 16</b> Sensitivity -60% (50, 70) Specificity -89% (82, 96) PPV - 43% NPV - 94% AUC - 0.0.88  <b>GDS-30 Alternative cut-offs</b> <b>Cut-off ≥ 6</b> Sensitivity - 100% Specificity - 54%  <b>Cut-off ≥ 7</b> Sensitivity - 90% Specificity - 60%  <b>Cut-off ≥ 8</b> Sensitivity - 90% Specificity - 68%  <b>Cut-off ≥ 9</b> Sensitivity - 90% Specificity - 69%  <b>Cut-off ≥ 10</b> Sensitivity - 90% Specificity - 72%  <b>Cut-off ≥ 11</b>

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	Identification tool	Comparator	Population	Results
				<p>Sensitivity - 80% Specificity - 77%</p> <p><b>Cut-off <math>\geq 12</math></b> Sensitivity - 80% Specificity - 78% ROC analysis - captured 80% of cases</p> <p><b>Cut-off <math>\geq 13</math></b> Sensitivity - 70% Specificity - 81%</p> <p><b>Cut-off <math>\geq 14</math></b> Sensitivity - 70% Specificity - 86%</p> <p><b>Cut-off <math>\geq 15</math></b> Sensitivity - 70% Specificity - 88%</p> <p><b>Cut-off <math>\geq 16</math></b> Sensitivity - 60% Specificity - 89%</p> <p><b>Cut-off <math>\geq 17</math></b> Sensitivity - 60% Specificity - 93%</p> <p><b>Cut-off <math>\geq 18</math></b> Sensitivity - 50% Specificity - 97%</p> <p><b>Cut-off <math>\geq 21</math></b> Sensitivity - 40% Specificity - 99%</p> <p><b>Minor depression CES-D</b> <b>Standard cut-off <math>\geq 16</math></b> Sensitivity -50% (39, 61) Specificity -86% (79.93) PPV - 21% NPV - 96% AUC - 0.72</p>
Whooley 1997	CES-D	DSM-III-Diagnostic Interview Schedule (DIS)	N = 543 Patients visiting urgent care clinic  Mean age = 53 (S.D. 14)	<p><b>Major depression</b></p> <p><b>Standard cut-off <math>\geq 16</math> - CES-D</b> AUC - 89% (85-92) Sensitivity -93% (85-97)</p>
Quality assessed: +				



Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	Identification tool	Comparator	Population	Results
			Male = 97%  USA, San Francisco  <i>Prevalence of depression</i> – <b>97/536</b>	Specificity –69% (65-74)  <b>Cut-off ≥ 10 -CES-D (10 item)</b> AUC – 87% (83-91) Sensitivity –90% (82-95) Specificity –72% (67-76)
Williams 1999  Quality assessed: +	CES-D	DSM-IV	N=296 age: 59 years, gender: 77 males, 219 females  US  <i>Prevalence of depression:</i> <b>36/296</b>	<b>Depression</b> Sensitivity 0.88 Specificity 0.75
Zich 1990  Quality assessed: +	CES-D	DSM-III (Diagnostic Interview Schedule)	N = 31 primary care patients who completed both the BDI and DIS  US, San Francisco  [does not give demographic information specific to this sub-group of patients]  <i>Prevalence of depression</i> – <b>3/31</b>	<b>Depressive disorders</b>  <b>Cut-off ≥ 16 – CES-D</b> Sensitivity – 100% Specificity – 53%
<b>Community</b>				
Papassotiropoulos 1999  Quality assessed: +	CES-D	ICD-10	N = 287; mean age = 76 years; 171 female, 116  Older people from the community; Germany  <i>Prevalence of depression</i> = <b>10/287</b>	<b>Depression</b>  <b>Optimal cut-off ≥ 10</b> Sensitivity – 75% Specificity – 72% AUC – 0.78
Sanchez-Garcia 2008  Quality assessed: ++	GDS-30	DSM-IV	N =534, older adults receiving IMSS, living in Mexico City, 206 individuals randomly selected for a clinical assessment.  Mean age – 71.5 years (SD 7.0years)  Male – 32%  <i>Prevalence of major depression:-</i> <b>19/206</b>	<b>Any depression</b>  <b>Standard cut-off CES-D</b> 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)

Center for Epidemiological Studies-Depression Scale (CES-D)				
Study	Identification tool	Comparator	Population	Results
			<i>Prevalence of any depression-:</i> <b>62/206</b>	
Suthers 2004  Quality assessed: +	CES-D11	CIDI-SF	N = 1056 (used in table for analysis, 1284 included in study)  Community sample responding to telephone screen  <i>Prevalence of depression -</i> <b>79/1256</b>	<b>Depression</b>  <b>Standard cut-off 9</b> Sensitivity - 48.1% Specificity - 88.27% PPV - 21.59% NPV - 96.20%
Tuuaninen 2001  Quality assessed: +	CES-D- Burnham Screen	DSM-IV	N=436 age: 68 years gender: all female  US  <i>Prevalence of depression -</i> <b>30/436</b>	<b>Usual cut-off (0.06)</b>  Sensitivity = 74% Specificity = 87%
Wada 2007  Quality assessed: +	CES-D	DSM-IV	N = 2219; mean age = 42 years; 351 women, 1868 male  Community sample (workers in a company); Japan  <i>Prevalence of depression -</i> <b>49/2219</b>	<b>Depression: major depressive disorder</b>  <b>Standard cut-off ≥ 16- CES-D</b> 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
<b>Consultation</b>				
Evans 1993  Quality assessed: +	GHQ-12	Geriatric Mental State (GMS)	N = 408, older adults attending primary care, London. N = 136 randomly selected for analysis of GHQ  Mean age of total sample - 73 years (SD - 8.4)  Male - 38% of total sample	<b>Depression</b>  <b>GHQ</b> Sensitivity - 0.7692 Specificity - 0.7619

General Health Questionnaire-12				
Study	Identification tool	Comparator / caseness	Population	Results
			<u>Prevalence of depression – 52/136</u>	
Goldberg1997  Quality assessed: +	GHQ-12;  GHQ-28	CIDI (DSM-IV/ICD-10)	N = 5438 consecutive primary care patients in 15 countries.	<p><b>Common mental health problems</b></p> <p><b>GHQ-12</b></p> <p><b>Ankara – threshold 1/2:</b> Sensitivity -70.6% Specificity – 82.3% PPV – 55.7%</p> <p><b>Athens – threshold 2/3:</b> Sensitivity - 80.6% Specificity – 84.7% PPV – 62.4%</p> <p><b>Bangalore – threshold 6/7:</b> Sensitivity – 86.7% Specificity – 88.9% PPV – 71.2%</p> <p><b>Berlin – threshold 2/3:</b> Sensitivity – 72.6% Specificity – 75.0% PPV – 47.8%</p> <p><b>Groningen – threshold 2/3:</b> Sensitivity - 80.3% Specificity – 86.4% PPV – 65.1%</p> <p><b>Ibadan – threshold 1/2:</b> Sensitivity – 77.8% Specificity – 79.4% PPV – 54.4%</p> <p><b>Mainz – threshold 2/3:</b> Sensitivity – 73.5% Specificity – 81.2% PPV – 55.2%</p> <p><b>Manchester – threshold 3/4:</b> Sensitivity – 84.6% Specificity – 89.3% PPV – 71.4%</p> <p><b>Nagasaki – threshold 1/2:</b> Sensitivity – 76.2%</p>

General Health Questionnaire-12				
Study	Identification tool	Comparator / caseness	Population	Results
				Specificity – 85.9% PPV – 63.1%  <b>Paris – threshold 1/2:</b> Sensitivity – 78.2% Specificity – 79.4% PPV – 54.3%  <b>Rio de Janeiro – threshold 1/2:</b> Sensitivity – 70.2% Specificity – 77.3% PPV – 49.4%  <b>Santiago – threshold 2/3:</b> Sensitivity – 84.8% Specificity – 82.2% PPV – 60.0%  <b>Seattle – threshold 1/2:</b> Sensitivity – 82.1% Specificity – 76.5% PPV – 52.4%  <b>Shanghai – threshold 1/2:</b> Sensitivity – 80.6% Specificity – 84.7% PPV – 62.4%  <b>Verona – threshold 1/2:</b> Sensitivity – 75.8% Specificity – 65.3% PPV – 40.6%
Hahn 2006  Quality assessed: +	GHQ-12	CIDI (DSM-IV/ICD-10)	N = 204 chronically ill in-patients; 5.9% cardiovascular diseases, 8.8% orthopaedic diseases, 5.4% cancer, 18.6% endocrinologic disease, 53.4% pneumological disease  Mean age = 49.6; age range 18-80  52% male  13 rehabilitation inpatient clinics in Germany  <u>Prevalence of depression</u> – 35/204	<b>Affective disorder</b> (single episode or recurrent major depression, dysthymia)  <b>Optimal cut-off <math>\geq 7</math> - GHQ</b> AUC – 0.779 (0.716-0.834) Sensitivity – 77.1% Specificity – 69.2% PPV – 34.2%

General Health Questionnaire-12				
Study	Identification tool	Comparator / caseness	Population	Results
Harter 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%)  <u>Prevalence of depression</u> - <b>10/206</b>	<b>AUC = 0.65 (0.57, 0.72)</b>  <b>Cut-off ≥ 5:</b> Sensitivity - 75% Specificity - 51.7% PPV - 17.3%
Harter 2006  Quality assessed: +	GHQ-12	M-CIDI	N= 569; 36% musculo-skeletal diseases; 29% CVD and 35% Cancer; 50% male;  Mean age 54; Age range 22-83  <u>Prevalence of depression</u> - <b>59/130</b>	<b>Any depression</b>  <b>GHQ</b> AUC - 0.72 (0.68, 0.76)  <b>Cut-off ≥ 8 GHQ</b> Sensitivity - 52.5% Specificity - 77.9% PPV - 22.1%
Henkel 2004  Secondary paper Henkel 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  <u>Prevalence of depression (any)</u> - <b>82/431</b>  <u>Prevalence of depression (major)</u> - <b>50/431</b>  <u>Prevalence of depression</u> <u>(dysthymia disorder)</u> - <b>24/431</b>  <u>Prevalence of depression (minor)</u> - <b>54/431</b>	<b>Any depression</b>  <b>GHQ-12</b> <b>Standard cut-off ≥2</b> Sensitivity - 85% Specificity - 63% PPV - 34% NPV - 95%  <b>Any depression according to ICD-10 GHQ-12</b> AUC - 0.833  <b>Any depression according to ICD-10 including minor depression (per DSM-IV research criteria)</b> <b>GHQ-12</b> AUC - 0.817  <b>Types of depression according to ICD-10 and DSM-IV research criteria:</b>

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

General Health Questionnaire-12				
Study	Identification tool	Comparator / caseness	Population	Results
Patel 2008  Quality assessed: ++	GHQ-12	CIS-R	N = 598 participants attending 5 primary care clinics in Goa, India  Mean age = 37.5 years (Sd 14.2 years)  Male - 43.6%  <u>Prevalence of common mental disorders - 92/598</u>	<b>Common mental disorders</b>  <b>Threshold 5/6 - GHQ-12</b> Sensitivity - 73% Specificity - 90% PPV - 61.2%  <b>Threshold 6/7 - GHQ-12</b> Sensitivity - 60% Specificity - 93% PPV - 64.5%  <b>Threshold 7/8- GHQ-12</b> Sensitivity - 52% Specificity - 97% PPV - 77.1%  AUC = 0.8969
Schmitz 1999a  Schmitz 1999b - secondary study  Schmitz 2001 - secondary study  Quality assessed: +	GHQ-12	DSM-III-R (SCID)	N = 572 outpatients attending primary care practices in Dusseldorf, Germany. Of these 421 completed the GHQ-12  Mean age - 42.7years (SD - 15.7 years)  Male - 31.3%  <u>Prevalence of common mental disorder - 36.8%</u>	<b>Common mental disorders</b>  <b>Cut-off 11/12</b> Sensitivity - 0.70 Specificity - 0.68 PPV - 0.56  <b>Cut-off 7/8</b> Sensitivity - 0.88 Specificity - 0.41  AUC - 0.76 (SD=0.026)
<b>Community</b>				
Costa 2006  Quality assessed: +	GHQ-12	ICD-10	N=126 age = 81 years, gender: 36 males, 90 females  Elderly people, Brazil  <u>Prevalence of depression:-:</u> <b>65/126</b>	Sensitivity = 0.661 Specificity = 0.623
Donath 2008  Quality assessed: +	GHQ-12	ICD-10 or DSM-IV based on the CIDI	N = 10 641 part of the 1997 Australian National Survey of Health and Wellbeing, conducted on a community sample.  Male - 44%  <u>Prevalence of affective or anxiety</u>	<b>Affective or anxiety disorder</b>  <b>Cut-off 0/1</b> Sensitivity - 75.4% (72.5 - 78.4) Specificity- 69.9% (69.5 - 70.3)  <b>Cut-off 1/2</b>

General Health Questionnaire-12				
Study	Identification tool	Comparator / caseness	Population	Results
			<u>disorder – 7.3%</u>	Sensitivity – 58.8% (55.7 – 61.9) Specificity- 83.8% (83.0 – 84.5)  <b>Cut-off 2/3</b> Sensitivity – 48.0% (44.9 – 51.0) Specificity- 90.7% (89.9 – 91.4)  <b>Cut-off 3/4</b> Sensitivity – 38.6% (35.5 – 41.7) Specificity- 94.1% (93.2 – 94.9)  AUC – 0.78 (0.76-0.80)
Papassotiropoulos 1999  Quality assessed: +	GHQ-12	ICD-10	N = 287; mean age = 76 years; 171 female, 116  Older people from the community; Germany  <u>Prevalence of depression – 10/287</u>	<b>Depression</b>  <b>Optimal cut-off ≥ 4</b> Sensitivity – 63% Specificity – 91% AUC – 0.794
Viinamaki 1995  Quality assessed: +	GHQ-12	DSM-III-R	N=56  Mean age: 48 years  Employers from factory  <u>Prevalence of depression – 23/56</u>	<b>Depression</b>  <b>Cut-off 2/3</b> Sensitivity - 70% Specificity- 75% PPV – 73% NPV- 72%

General Health Questionnaire-28				
Study	Identification tool	Comparator / caseness	Population	Results
<b>Consultation</b>				
Goldberg1997  Quality assessed: +	GHQ-28	CIDI (DSM-IV/ICD-10)	N = 5438 consecutive primary care patients in 15 countries.	<b>Common mental health problems</b>  <b>GHQ-28</b>  <b>Ankara – threshold 3/4</b> Sensitivity -74.6% Specificity – 77.1%



General Health Questionnaire-28				
Study	Identification tool	Comparator / caseness	Population	Results
				PPV - 50.7%  <b>Athens - threshold 5/6:</b> Sensitivity - 89.5% Specificity - 82.8% PPV - 62.2%  <b>Bangalore - threshold 8/9:</b> Sensitivity - 93.4% Specificity - 85.0% PPV - 66.4%  <b>Berlin - threshold 5/6:</b> Sensitivity - 81.9% Specificity - 72.9% PPV - 48.8%  <b>Groningen - threshold 5/6:</b> Sensitivity - 84.9% Specificity - 81.9% PPV - 59.8%  <b>Ibadan - threshold 4/5:</b> Sensitivity - 80.8% Specificity - 75.6% PPV - 51.2%  <b>Mainz - threshold 5/6:</b> Sensitivity - 80.7% Specificity - 72.9% PPV - 48.5%  <b>Manchester - threshold 6/7:</b> Sensitivity - 84.4% Specificity - 86.2% PPV - 65.8%  <b>Nagasaki - threshold 3/4:</b> Sensitivity - 76.7% Specificity - 77.6% PPV - 51.9%  <b>Paris - threshold 3/4:</b> Sensitivity - 79.3% Specificity - 74.9% PPV - 49.9%  <b>Rio de Janeiro - threshold 3/4:</b> Sensitivity - 82.0% Specificity - 71.8%

General Health Questionnaire-28				
Study	Identification tool	Comparator / caseness	Population	Results
				PPV - 47.9%  <b>Santiago - threshold 6/7:</b> Sensitivity - 89.0% Specificity - 85.8% PPV - 66.4%  <b>Seattle - threshold 3/4:</b> Sensitivity - 80.5% Specificity - 74.8% PPV - 50.2%  <b>Shanghai - threshold 7/8:</b> Sensitivity - 84.6% Specificity - 85.5% PPV - 64.8%  <b>Verona - threshold 5/6:</b> 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
<b>Consultation</b>				
Blank2004  Quality assessed: +	GDS - 30	Diagnostic Interview Schedule	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  Male = 37%  <u>Prevalence of major depression - 9%</u>  <u>Prevalence of any depression - 16%</u>	<b>Major depression</b>  <b>Primary care sample</b>  <b>GDS-30</b> <b>Cut-off ≥10</b> Sensitivity - 79% (50-94) Specificity - 67% (63-69)  AUC - 0.87 (0.77-0.97)  <b>Cut-off ≥17 - recommended</b> Sensitivity - 79% (51-94) Specificity - 87% (84-89)  <b>Nursing Home sample</b>  <b>GDS-30</b>

Geriatric Depression Scale – 30 item				
Study	Identification tool	Comparator/ caseness	Population	Results
			<p><u>Prevalence of major depression in primary care – 11%</u></p> <p><u>Prevalence of major depression in hospital – 8%</u></p> <p><u>Prevalence of major depression in nursing homes – 9%</u></p>	<p><b>Cut-off ≥10</b> Sensitivity – 86% (44-99) Specificity – 72% (68-73)</p> <p>AUC – 0.88 (0.74- 1.02)</p> <p><b>Cut-off ≥13 – recommended</b> Sensitivity – 86% (44-99) Specificity – 85% (81-86)</p> <p><b>Hospital sample</b></p> <p><b>GDS-30</b> <b>Cut-off ≥10</b> Sensitivity – 83% (52-97) Specificity – 78% (75-79)</p> <p>AUC – 0.90 (0.81- 1.00)</p> <p><b>Cut-off ≥15 – recommended</b> Sensitivity – 83% (54-97) Specificity – 93% (90-94)</p>
Burke 1992  Quality assessed: +	GDS-30	DSM-III-R	<p>N = 67 cognitively intact outpatients</p> <p>Mean age = 77.2 (SD 6.5)</p> <p>Male = 34%</p> <p><u>Prevalence of depression – 16/67</u></p>	<p><b>Depression</b></p> <p><b>Cut-off ≥ 11</b> Sensitivity – 81% Specificity – 61%</p> <p><b>Cut-off ≥ 14</b> Sensitivity – 44% Specificity – 75%</p> <p><b>Cut-off ≥ 17</b> Sensitivity – 31% Specificity – 94%</p>
Evans 1993  Quality assessed: +	GDS-30	Geriatric Mental State (GMS)	<p>N = 408, older adults attending primary care, London. N = 144 randomly selected for analysis of GDS</p> <p>Mean age of total sample – 73 years (SD – 8.4)</p> <p>Male – 38% of total sample</p> <p><u>Prevalence of depression – 59/144</u></p>	<p><b>Depression</b></p> <p><b>GDS</b> Sensitivity – 0.8475 Specificity – 0.7176</p>

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Geriatric Depression Scale – 30 item				
Study	Identification tool	Comparator/ caseness	Population	Results
Fernandez-San Martin 2002  Quality assessed: +	GDS-30	DSM-IV	N=192 age >65 years, gender: 70 males, 122 females  Primary care, Spain  <i>Prevalence of depression -</i> <b>60/192</b> (mainly psychotic depression)	<b>Depression</b>  <b>Cut-off ≥11</b> Sensitivity = 0.817 Specificity = 0.68
Jongenelis 2005  Quality assessed: +	GDS-30	DSM-IV	N= 333, age = 79 years, gender: 104 males, 229 females  Nursing home, Netherlands  <i>Prevalence of depression -:</i> <b>74/333</b>	<b>Any depression</b>  <b>Cut-off 11</b> Sensitivity - 0.85 Specificity - 0.69
Koenig 1992A  Quality assessed: +	GDS-30	DSM-III-R	N = 109 medically ill hospitalized patients  Mean age = 74 (S.D. 4.1)  100% men  Mean MMSE score = 25.7 (S.D. 3.3)  US, Durham  <i>Prevalence of depression -</i> <b>11/109</b>	<b>Major depression</b>  <b>Cut-off ≥ 11 - GDS</b> Sensitivity - 82% Specificity - 76% PPV - 27% NPV - 97%
Laprise 1998  Quality assessed: +	GDS-30	DSM-III-R	N=66, Nursing home residents, Canada (French)  Mean age = 78 years,  gender: 31 males, 35 females  <i>Prevalence of depression -</i> <b>27/66</b>	<b>Depression</b>  <b>Cut-off 10-GDS</b> Sensitivity = 0.92 Specificity = 0.513
Lynes 1997  Quality assessed: +	GDS - 30	DSM-III-R	N = 130 older adults attending primary care.  Mean age - 71.0 years (SD - 6.8 years)  Male - 41.5%	<b>Major depression</b>  <b>Cut-off 10 GDS-30</b> Sensitivity = 100% Specificity = 84%  AUC - 0.936 (0.031)

Geriatric Depression Scale – 30 item				
Study	Identification tool	Comparator/ caseness	Population	Results
			<u>Prevalence of major depression – 14/130</u>  <u>Prevalence of any depression – 24/130</u>	
Magni 1986  Quality assessed: ++	GDS-30	DSM-III	N = 220, Consecutive admissions to general medical ward, Italy  Mean age = 76 years,  Gender: 111 males, 109 females  <u>Prevalence of depression (MDD and dysthymia) – 67/220</u> <u>MDD only – 18/220</u>	<b>Depression</b>  <b>Cut-off 11 -GDS</b> Sensitivity = 0.86 Specificity = 0.74  <b>Cut-off 14 - GDS</b> Sensitivity = 0.65 Specificity = 0.91
McGivney 1994  Quality assessed: +	GDS - 30	DSM-III-R	N = 66 new admissions to two nursing homes.  Mean age - 83 years (SD=4)  Male - 29%  <u>Prevalence of major depression::- 6/66</u>  <u>Prevalence of any depression::- 30/66</u>	<b>Any depression</b>  <b>Cut-off ≥ 10 - GDS-30</b> Sensitivity - 63% Specificity - 83%
Nam Bae 2004  Quality assessed: ++	GDS - Korean version (GDS-K)	DSM-III-R	N = 154 (91.1% of eligible participants)  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.  Mean age = 66 years (SD = 6.48yrs)  Male - 35%  <u>Prevalence of depression – 62/154</u>	<b>Major depression</b>  <b>GDS-K</b> <b>Optimal cut-off ≥ 16</b> Sensitivity = 0.9032 Specificity = 0.7174  <b>Optimal cut-off ≥ 18 (indicated by ROC curve)</b> Sensitivity = 0.8387 Specificity = 0.8152

Geriatric Depression Scale – 30 item				
Study	Identification tool	Comparator/ caseness	Population	Results
Neal 1994  Quality assessed: +	GDS-30	GMS- AGECAT	N = 45 older adults attending medical outpatient clinics in three UK hospitals.  Mean age – 77.2  Male – 38%  <u>Prevalence of depression:-</u> <b>10/45 (22%)</b>	<b>Depression</b>  <b>Cut-off <math>\geq 9</math> – GDS-30</b> Sensitivity – 0.63 Specificity – 0.80 PPV – 0.92 NPV – 0.38  <b>Cut-off <math>\geq 10</math> – GDS-30</b> Sensitivity – 0.74 Specificity – 0.80 PPV – 0.93 NPV – 0.47  <b>Cut-off <math>\geq 11</math> – GDS-30</b> Sensitivity – 0.73 Specificity – 0.80 PPV – 0.94 NPV – 0.57  <b>Cut-off <math>\geq 12</math> – GDS-30</b> Sensitivity – 0.83 Specificity – 0.80 PPV – 0.94 NPV – 0.57  <b>Cut-off <math>\geq 13</math> – GDS-30</b> Sensitivity – 0.83 Specificity – 0.70 PPV – 0.91 NPV – 0.54  <b>Cut-off <math>\geq 14</math> – GDS-30</b> Sensitivity – 0.83 Specificity – 0.60 PPV – 0.88 NPV – 0
Pomeroy 2001  Quality assessed: +	GDS - 30	ICD-10	N = 87 patients over the age of 60 admitted to medical rehabilitation wards or attending day rehabilitation facilities; 40% male, mean age 78.4 (SD – 7.7 yrs)  <u>Prevalence of depression –</u> <b>17/87</b>	<b>Depressive episode</b>  <b>GDS-30</b> <b>Optimal cut-off <math>\geq 11</math></b> Sensitivity – 100% Specificity – 62.9% AUC – 0.85 (0.77, 0.94) PPV – 39.5% NPV – 100%
Robison 2002	GDS-30	CIDI	N=303 Age = 61 years gender:	Sensitivity = 0.81

Geriatric Depression Scale – 30 item				
Study	Identification tool	Comparator/ caseness	Population	Results
Quality assessed: +			88 males, 215 females  Primary care, Hispanic population in US  Prevalence: 67/303	Specificity = 0.65
Snowdon 1990  Quality assessed: +/- unable to assess due to lack of information.	GDS-30	DSM-III	N = 69 residents in old age hostels or nursing homes  Mean age – not reported  Male – percentage not reported  <u>Prevalence of major depression – 12/69</u>  <u>Prevalence of any depression – 15/69</u>	<b>Any depression</b>  <b>All participants</b> <b>Cut-off ≥11 – GDS-30</b> Sensitivity – 93% Specificity – 83%  <b>Cut-off ≥14 GDS-30</b> Sensitivity – 60% Specificity – 94%  <b>Nursing home participants only</b> <b>Cut-off ≥11 – GDS-30</b> Sensitivity – 100% Specificity – 66%  <b>Cut-off ≥14 GDS-30</b> Sensitivity – 71% Specificity – 92%
Van Marwijk 1995  Quality assessed: +	GDS – 30 item	DSM-III	N=586 age = 65-94 years, gender: 237 males, 349 females  Older people in primary care, Netherlands  <u>Prevalence of depression - 33/586</u>	<b>Any depression</b>  <b>Cut-off 10 – GDS-30</b> Sensitivity = 0.55 Specificity = 0.86
Vargas 2007  Quality assessed: +	GDS-30	DSM-IV	N=484 age = 70 years, gender: 208 males, 276 females  General Outpatient Clinic, Portugal  <u>Prevalence of depression -: 210/484</u>	Cut-off 12 Sensitivity = 0.87 Specificity = 0.73
Watson 2004  Quality assessed: +	GDS-30	DSM-IV	N = 84, Age over 70 and residing in two Continuing Care Retirement Communities in US.	<b>Major Depression</b>  <b>GDS-30</b> <b>Standard cut-off ≥ 12</b>

Geriatric Depression Scale - 30 item				
Study	Identification tool	Comparator/ caseness	Population	Results
			Mean age 82  Male - 26%  <u>Prevalence of depression - 10/78</u>	Sensitivity -60% (50, 70) Specificity -93% (88, 98) PPV - 55% NPV - 95% AUC - 0.88  <b>GDS-30 Alternative cut-offs</b> <b>Cut-off ≥ 4</b> Sensitivity - 100% Specificity - 42%  <b>Cut-off ≥ 5</b> Sensitivity - 90% Specificity - 57%  <b>Cut-off ≥ 6</b> Sensitivity - 80% Specificity - 68%  <b>Cut-off ≥ 7</b> Sensitivity - 80% Specificity - 73%  <b>Cut-off ≥ 8</b> Sensitivity - 88% Specificity - 77%  <u><b>Cut-off ≥ 9</b></u> Sensitivity - 80% Specificity - 85% ROC analysis - captured 80% of cases  <b>Cut-off ≥ 10</b> Sensitivity - 60% Specificity - 88%  <b>Cut-off ≥ 11</b> Sensitivity - 60% Specificity - 89%  <b>Cut-off ≥ 12</b> Sensitivity - 60% Specificity - 93%  <b>Cut-off ≥ 13</b> Sensitivity - 60% Specificity - 97%  <b>Cut-off ≥ 14</b> Sensitivity - 60%



Geriatric Depression Scale – 30 item				
Study	Identification tool	Comparator/ caseness	Population	Results
				Specificity - 99%  <b>Cut-off <math>\geq 16</math></b> Sensitivity - 60% Specificity - 100%  <b>Minor depression</b>  <b>GDS-30</b> <b>Standard cut-off <math>\geq 12</math></b> Sensitivity - 33% (23, 43) Specificity - 88% (81, 95) PPV - 18% NPV - 95% AUC - 0.71
<b>Community</b>				
Carrete 2001  Quality assessed: +	GDS-30	DSM-IV (SCID)	N= 169 Mean age = 72 years gender: 57 males, 112 female  Ambulatory older adults were contacted by telephone, Argentina  <i>Prevalence of depression -</i> <b>22/169</b>	<b>Cut-off 11</b> Sensitivity = 0.88 Specificity = 0.84
Costa 2006  Quality assessed: +	GDS-30	ICD-10	N=126, Older adults, Brazil  Mean age = 81 years,  gender: 36 males, 90 females  <i>Prevalence of depression -</i> <b>65/126</b>	<b>GDS</b> Sensitivity = 0.733 Specificity = 0.654
Dunn 1989  Quality assessed: +	GDS-30	DSM-III measured used the Depression symptom checklist and the research diagnostic criteria/	N = 439 community dwelling older adults attending either an activity centre or dining facility  Mean age - 74 years  Male - % not reported  <i>Prevalence of depression-</i> <b>36/439</b>	<b>Major depression</b> <b>Cut-off 11 – GDS 30</b> False Positive - 53 (18%) False Negative - 6 (17%)
Sanchez-Garcia 2008  Quality assessed:	GDS-30	DSM-IV	N =534, older adults receiving IMSS, living in Mexico City, 206 individuals randomly selected for a	<b>Any depression</b>  <b>Standard cut-off GDS</b> Sensitivity - 53.8% (53.1-54.5)

Geriatric Depression Scale – 30 item				
Study	Identification tool	Comparator/ caseness	Population	Results
++			clinical assessment.  Mean age – 71.5 years (SD 7.0years)  Male – 32%  <u>Prevalence of major depression:-</u> <b>19/206</b>  <u>Prevalence of any depression:-</u> <b>62/206</b>	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
<b>Consultation</b>				
Abas 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  <u>Prevalence of depression – 22/82</u>  <u>Prevalence of depression based on whole sample – 20% (95%CI 17-23)</u>	<b>Major depression</b>  <b>Cut-off ≥4</b> Sensitivity – 89.1% Specificity – 65.8%  <b>Cut-off ≥5</b> Sensitivity – 81.5% Specificity – 81.5%  <b>Cut-off ≥6</b> Sensitivity – 74.0% Specificity – 85.5%
Arthur1999  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  <u>Prevalence of depression - 12/201 – 6%</u>	<b>Depression</b>  <b>Cut-off ≥2</b> Sensitivity – 100% Specificity – 49.9% PPV – 11.2% NPV – 100.0%  <b>Cut-off ≥3</b> Sensitivity – 100% Specificity – 71.9% PPV – 18.4% NPV – 100.0%  <b>Cut-off ≥4</b> Sensitivity – 80% Specificity – 81.6%

Geriatric Depression Scale - 15 item (and Brief GDS)				
Study	Identification tool	Comparator/ caseness	Population	Results
				PPV - 21.6% NPV - 98.5%  <b>Cut-off ≥5</b> Sensitivity - 60.0% Specificity - 89.2% PPV - 26.1% NPV - 97.2%  <b>Cut-off ≥6</b> Sensitivity - 50.0% Specificity - 93.7% PPV - 33.3% NPV - 96.7%  <b>Cut-off ≥7</b> Sensitivity - 43.3% Specificity - 96.0% PPV - 40.6% NPV - 96.4%
Blank2004  Quality assessed: +	GDS - 15	Diagnostic Interview Schedule	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  Male = 37%  <u>Prevalence of major depression - 9%</u>  <u>Prevalence of any depression - 16%</u>  <u>Prevalence of major depression in primary care - 11%</u>  <u>Prevalence of major depression in hospital - 8%</u>  <u>Prevalence of major depression in nursing homes - 9%</u>	<b>Major depression</b>  <b>Primary care sample</b>  <b>GDS-15</b> <b>Cut-off ≥6</b> Sensitivity - 79% (51-94) Specificity - 75% (71-77)  AUC - 0.81 (0.67-0.97)  <b>Cut-off ≥9 - recommended</b> Sensitivity - 71% (45-90) Specificity - 91% (88-93)  <b>Nursing Home sample</b>  <b>GDS-15</b> <b>Cut-off ≥6</b> Sensitivity - 86% (44-99) Specificity - 82% (78-83)  AUC - 0.87 (0.74- 1.00)  <b>Cut-off ≥7 - recommended</b> Sensitivity - 86% (44-99) Specificity - 83% (80-85)  <b>Hospital sample</b>

Geriatric Depression Scale – 15 item (and Brief GDS)				
Study	Identification tool	Comparator/ caseness	Population	Results
				<b>GDS-15</b> <b>Cut-off <math>\geq 6</math></b> Sensitivity – 83% (52-97) Specificity – 80% (77-81)  AUC – 0.82 (0.68- 0.96)  <b>Cut-off <math>\geq 6</math> – recommended</b> Sensitivity – 83% (53-97) Specificity – 80% (77-81)
Cullum 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.  Mean age (whole sample) – 80.2years (SD 7.48 years)  Mean age (interview sample) – 80.3 years (SD 7.49 years)  Male (whole sample) – 41%  Male (interview sample) – 40%  <u>Prevalence of depression:</u> - <b>17.7% (weighted prevalence)</b>	<b>Depression</b>  <b>Cut-off <math>\geq 5</math> – GDS-15</b> Sensitivity – 0.91 (0.71-0.98) Specificity – 0.63 (0.55-0.71)  <b>Cut-off <math>\geq 6</math> – GDS-15</b> Sensitivity – 0.78 (0.58-0.90) Specificity – 0.74 (0.66-0.80)  <b>Cut-off <math>\geq 7</math> – GDS-15</b> Sensitivity – 0.74 (0.54-0.87) Specificity – 0.81 (0.75-0.86)  <b>Cut-off <math>\geq 8</math> – GDS-15</b> Sensitivity – 0.61 (0.43-0.76) Specificity – 0.86 (0.82-0.89)  <b>Cut-off <math>\geq 9</math> – GDS-15</b> Sensitivity – 0.50 (0.35-0.65) Specificity – 0.92 (0.88-0.94)  <b>Cut-off <math>\geq 10</math> – GDS-15</b> Sensitivity – 0.39 (0.27-0.52) Specificity – 0.94 (0.92-0.96)
D’Ath 1994  Quality assessed: +	GDS-15	GMS	N=194, Age: 74 years, Gender: 126 females, 72 males  <u>Prevalence of depression</u> - <b>67/194</b>	<b>Depression</b>  Sensitivity 91% Specificity 72%
Friedman 2005  Quality assessed: +	GDS-15	MINI	N = 960 functionally impaired but cognitively intact older adults participating in a RCT assessing a primary care health intervention. USA  Mean age – 79.3years (SD 7.4	<b>Depression</b>  <b>Standard Cut-off <math>\geq 6</math></b> Sensitivity – 81.45% Specificity – 75.36%  AUC – 0.858 (SE – 0.018)

Geriatric Depression Scale – 15 item (and Brief GDS)				
Study	Identification tool	Comparator/ caseness	Population	Results
			years)  Male – 25.4%  <u>Prevalence of depression: - 124/960 (12.9%)</u>	
Hoyl 1999  Quality assessed: +	GDS-15  GDS-5	Clinical evaluation – including MINI, PRIME-MD and psychiatric consultation	N=74, frail older adult outpatients.  California, USA  Mean age – 74 years  Male – 98%  <u>Prevalence of depression – 34 / 74 (46%)</u>	<b>Any depression</b>  <b>GDS-15</b> Sensitivity - 0.94 Specificity - 0.82 PPV – 0.82 NPV – 0.94 AUC – 0.91  <b>GDS-5</b> <b>Optimal cut off ≥ 2</b> Sensitivity - 0.97 Specificity - 0.85 PPV – 0.85 NPV – 0.97 AUC – 0.94
Jongenelis 2005  Quality assessed: +	GDS-15	DSM-IV	N= 333, age = 79 years, gender: 104 males, 229 females  Nursing home, Netherlands  <u>Prevalence of depression -: 74/333</u>	<b>Any depression</b>  <b>Cut-off 5</b> Sensitivity - 0.81 Specificity - 0.63
Lynes 1997  Quality assessed: +	GDS - 15	DSM-III-R	N = 130 older adults attending primary care.  Mean age – 71.0 years (SD – 6.8 years)  Male – 41.5%  <u>Prevalence of major depression – 14/130</u>  <u>Prevalence of any depression – 24/130</u>	<b>Major depression</b>  <b>Cut-off 5 GDS-15</b> Sensitivity = 92% Specificity = 81%  AUC – 0.935 (0.046)
Marc 2008  Quality assessed: +	GDS-15	DSM-IV using SCID and expert consensus	N = 526 older adults who were newly admitted to receive home nursing care. Participants with cognitive	<b>Depression</b>  <b>Optimal cut off ≥ 5 – GDS-15</b> Sensitivity – 71.8%

Geriatric Depression Scale – 15 item (and Brief GDS)				
Study	Identification tool	Comparator/ caseness	Population	Results
			<p>impairment were excluded from the study. (492 cases used in the analysis due to missing data)</p> <p>Mean age = 78.3years (SD – 7.5 years)</p> <p>Male – 34.9%</p> <p><u>Prevalence of depression:</u> - <b>81/526 (15.4%)</b></p>	<p>Specificity – 78.2%</p> <p>AUC – 0.7933 (SE – 0.0308)</p> <p><b>Standard cut off <math>\geq 5</math> – GDS-15</b></p> <p>Sensitivity – 60.6%</p> <p>Specificity – 86.2%</p>
<p>Nam Bae 2004</p> <p>Quality assessed: ++</p>	Short GDS – Korean version (SGDG-K)	DSM-III-R	<p>N = 154 (91.1% of eligible participants)</p> <p>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.</p> <p>Mean age = 66 years (SD = 6.48yrs)</p> <p>Male – 35%</p> <p><u>Prevalence of depression –</u> <b>62/154</b></p>	<p><b>Major depression</b></p> <p><b>SGDS-K</b></p> <p><b>Optimal cut-off <math>\geq 8</math></b></p> <p>Sensitivity = 0.8548</p> <p>Specificity = 0.6957</p> <p><b>Optimal cut-off <math>\geq 10</math> (indicated by ROC curve)</b></p> <p>Sensitivity = 0.7419</p> <p>Specificity = 0.8587</p>
<p>Neal 1994</p> <p>Quality assessed: +</p>	GDS-15	DSM (GMS)	<p>N=45, Age = 77years, Gender: 18 males, 27 females</p> <p><u>Prevalence of depression –</u> <b>8/45</b></p>	<p><b>Depression</b></p> <p><b>Optimal cut-off - GDS-15</b></p> <p>Sensitivity 0.67</p> <p>Specificity 0.80</p>
<p>Pomeroy 2001</p> <p>Quality assessed: +</p>	GDS - 4 GDS - 15	ICD-10	<p>N = 87 patients over the age of 60 admitted to medical rehabilitation wards or attending day rehabilitation facilities; 40% male, mean age 78.4 (SD – 7.7 yrs)</p> <p><u>Prevalence of depression –</u> <b>17/87</b></p>	<p><b>Depressive episode</b></p> <p><b>GDS-4</b></p> <p><b>Optimal cut-off <math>\geq 1</math></b></p> <p>Sensitivity – 82.4%</p> <p>Specificity – 67.1%</p> <p>AUC – 0.80 (0.68, 0.93)</p> <p>PPV – 37.8%</p> <p>NPV – 94.0%</p> <p><b>GDS-15</b></p> <p><b>Optimal cut-off <math>\geq 5</math></b></p> <p>Sensitivity – 82.4%</p>

Geriatric Depression Scale – 15 item (and Brief GDS)				
Study	Identification tool	Comparator/ caseness	Population	Results
				Specificity – 60.0 AUC – 0.82 (0.71, 0.93) PPV – 33.3% NPV – 93.3%
Rinaldi 2003  Quality assessed: +	GDS-15  5-item GDS (Hoyl1999) – (GDS-5)	DSM-IV	N= 181 Participants were 65yrs and older, with normal cognitive function enrolled from three settings: an acute geriatric ward (33%), a geriatric outpatient clinic (28%) and a nursing home (39%); mean age 79.4 (SD- 7.3yrs)  <i>Prevalence of depression –</i> <b>87/181</b>	<b>Any depression</b>  <b>GDS-15</b> 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  <b>GDS-5</b> Sensitivity – 0.94 (0.91, 0.98) Specificity – 0.81 (0.75, 0.87) PPV – 0.81 (0.75, 0.87) NPV – 0.94 (0.90, 0.97) AUC – 0.85
Scheinthal 2001  Quality assessed: ++	GDS-15	DSM-IV	N=75, Age: 74 years, Gender: 33 males, 42 females  US geriatric medical setting  <i>Prevalence of depression –</i> <b>8/75</b>	<b>Cut-off ≥ 7</b> Sensitivity 1 Specificity 0.79
Van Marwijk 1995  Quality assessed: +	GDS – 15 item	DSM-III	N=586 age = 65-94 years, gender: 237 males, 349 females  Older people in primary care, Netherlands  <i>Prevalence of depression -</i> <b>33/586</b>	<b>Any depression</b>  <b>Cut-off &lt;3/3 – GDS-15</b> Sensitivity – 67% Specificity – 73% PPV – 13% NPV – 97%  <b>Cut-off &lt;2/2+</b> Sensitivity – 76% Specificity – 53% PPV – 9% NPV – 97%
<b>Community</b>				
De Craen 2003  Quality assessed: +	GDS-15	DSM-IV	N=79, Community dwelling, older adults  Median age = 87 years, gender: 24 males, 55 females	<b>Cut-off 3</b> True Positive = 7 False Positive = 17 False Negative =1 True Negative =54

Geriatric Depression Scale - 15 item (and Brief GDS)				
Study	Identification tool	Comparator/ caseness	Population	Results
			Netherlands	
Orcos 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.  <u>Prevalence of depression:</u> - <b>14.6%</b>	<b>Depression</b>  <b>GDS-15</b> 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)  <b>GDS-5</b> 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 1999  Quality assessed: +	GDS-15	DSM-IV	N=130,  Mean age = >60 years,  Gender: no information  <u>Prevalence of depression - :</u> <b>13/130</b>	<b>Depression</b>  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
<b>Consultation</b>				
Hahn 2006  Quality assessed: +	HADS	CIDI (DSM-IV/ICD-10)	N = 204 chronically ill in-patients; 5.9% cardiovascular diseases, 8.8% orthopaedic diseases, 5.4% cancer, 18.6% endocrinologic disease, 53.4% pneumological disease  Mean age = 49.6; age range 18-80  52% male	<b>Affective disorder</b> (single episode or recurrent major depression, dysthymia)  <b>Optimal cut-off <math>\geq 18</math> - HADS</b> AUC - 0.785 (0.722-0.839) Sensitivity - 71.4% Specificity - 74.6% PPV - 36.8%



Hospital Anxiety and Depression Scale (HADS – Depression only)				
Study	Identification tool	Comparator/ caseness	Population	Results
			13 rehabilitation inpatient clinics in Germany  <i>Prevalence of depression – 35/204</i>	
Harter 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%)  <i>Prevalence of depression – 10/206</i>	<b>AUC = 0.79 (0.73, 0.85)</b>  <b>Cut-off ≥ 16:</b> Sensitivity – 78.3% Specificity – 70.6% PPV – 28.6%
Harter 2006  Quality assessed: +	HADS	M-CIDI	N = 569; 36% musculo-skeletal diseases; 29% CVD and 35% Cancer; 50% male; Mean age 54; Age range 22-83  <i>Prevalence of depression – 59/130</i>	<b>Any depression</b>  <b>HADS</b> AUC – 0.82 (0.79, 0.86)  <b>Cut-off ≥ 18- HADS</b> Sensitivity – 73.7% Specificity – 79.5% PPV – 30.7%
Healey 2008  Quality assessed: ++	HADS	DSM-IV (SCID)	N = 49 stroke patients recruited from inpatient rehabilitation units  Mean age = 78.9 (6.79)  Male = 43%  <i>Prevalence of MDD- 7/49</i>  <i>Prevalence of minor depression – 6/49</i>  <i>Prevalence of any depression – 13/49</i>	<b>Any depression</b> <b>Cut-off ≥ 8 – HADS</b> Sensitivity – 62% (36-82) Specificity – 69% (53-82) PPV – 42% (23-64) NPV – 83% (66-93)  <b>MDD</b> <b>Cut-off ≥ 8 – HADS</b> Sensitivity – 86% (49-97) Specificity – 69% (54-81) PPV – 32% (15-54) NPV – 97% (83-99)

Hospital Anxiety and Depression Scale (HADS – Depression only)				
Study	Identification tool	Comparator/ caseness	Population	Results
Herrero 2003  Quality assessed: +	HADS	DSM-IV (SCID)	N=385, Mean age = 38 years, gender: 204 males, 181 females  General Hospital - all participants were outpatients with severe medical pathology, from neurosurgery, pulmonary, cardiology, neurology and infectious illness settings, Spain  <i>Prevalence of depression -</i> <b>87/385</b>	Cut-off 7 Sensitivity = 0.92 Specificity = 0.644
Lam 1995  Quality assessed: +	HADS	DSM-III-R	N=100, age = 69 years, gender: 44 males, 56 females  Elderly primary care patients, Hong Kong  <i>Prevalence of depression -</i> <b>9/100</b>	Sensitivity = 0.78 Specificity = 0.91
Lowe 2004A  Lowe2004B - duplicate report  Quality assessed: +	HADS	DSM-IV (SCID)	N= 501; 21% musculo-skeletal disease, 16% endocrine, nutritional & metabolic disease, 10% cardiovascular/circulatory disease, 7% gastrointestinal disease, 6% respiratory system disease; mean age = 41.7 y/o (SD = 13.8); 32.9% male  395 outpatients from Heidelberg University Medical Hospital  106 patients from 12 GPs in Heidelberg  <i>Prevalence of depression -</i> <b>66/501</b>	<b>Any depression</b>  <b>Cut-off <math>\geq 7</math>- HADS</b> Sensitivity - 86% (78, 91) Specificity - 70% (65, 74) <b>Cut-off <math>\geq 8</math>- HADS</b> Sensitivity - 81% (73, 87) Specificity - 75% (71, 80) <b>Cut-off <math>\geq 10</math>- HADS</b> Sensitivity - 75% (66, 82) Specificity - 82% (78, 86)  <b>Major depression</b>  <b>Cut-off <math>\geq 8</math>- HADS</b> Sensitivity - 88% (78, 95) Specificity - 69% (64, 73) <b>Cut-off <math>\geq 9</math>- HADS</b> Sensitivity - 85% (78, 95) Specificity - 76% (64, 73) <b>Cut-off <math>\geq 10</math>- HADS</b> Sensitivity - 74% (62, 84) Specificity - 83% (79, 86)

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

### Hamilton Depression Rating Scale (HDRS)

Hamilton Depression Rating Scale (HDRS)				
Study	Identification tool	Comparator/ caseness	Population	Results

Community				
Stukenberg 1990 Quality assessed: +	HDRS	DSM-III-R (SCID)	N=177 community dwelling adults, over 55 years; Mean age = 67.4 (SD=7.20) Age range 56-88years 33% male  <i>Prevalence of depression -</i> <b>27/178</b>	<b>Any depression</b>  <b>HDRS</b> AUC - 0.85(SE .05)
Mixed community and consultation sample				
Mottram 2000 Quality assessed: +	HDRS	DSM-IV	N=414 mean age = 77 years, gender: 111 males, 303 males  <i>Prevalence of depression -</i> <b>330/414</b>	<b>Depression</b>  <b>Cut-off ≥ 16</b> 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  <i>Prevalence of depression -</i> <b>81/1093</b>	<b>Depression: major depressive disorder</b>  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 2000 Quality assessed: +	MADRS	DSM-IV	N=414 older adults  mean age = 77 years,  gender: 111 males, 303 males  <i>Prevalence of depression -</i> <b>330/414</b>	<b>Depression</b>  <b>Cut-off ≥ 21</b> Sensitivity = 0.72 Specificity = 0.989

## Patient Health Questionnaire (PHQ)

Patient Health Questionnaire-2 item (PHQ-2)				
Study	Identification tool	Comparator/ caseness	Population	Results
<b>Consultation</b>				
<p>Kroenke2001, Spitzer 1999, Kroenke2003, Huang 2005 - All use same participants.</p> <p>Kroenke2001, Huang2005 - PHQ-9</p> <p>Spitzer1999, Kroenke2003 - PHQ-2</p> <p>Quality assessed: +</p>	<p>Patient Health Questionnaire 2 item version (PHQ-2)</p>	<p>DSM-III-R (SCID and diagnostic questions from the PRIME-MD conducted over the telephone by mental health professionals</p>	<p>N = 580 (6000 in total study)</p> <p>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.</p> <p>The total sample was recruited from 5 general practices, 3 family practices and 7 obstetrics-gynecology sites)</p> <p><u>Prevalence of depression - 41/580</u></p>	<p><b>MDD</b> Sensitivity = 0.88 Specificity = 0.88</p> <p><b>Major Depressive disorder</b></p> <p><b>PHQ-2</b> <b>Cut-off ≥ 1</b> Sensitivity - 97.6% Specificity - 59.2% PPV - 15.4%</p> <p><b>Cut-off ≥ 2</b> Sensitivity - 92.7% Specificity - 73.7% PPV - 21.1%</p> <p><b>Cut-off ≥ 3</b> Sensitivity - 82.9% Specificity - 90.0% PPV - 38.4%</p> <p><b>Cut-off ≥ 4</b> Sensitivity - 73.2% Specificity - 93.3% PPV - 45.5%</p> <p><b>Cut-off ≥ 5</b> Sensitivity - 53.7% Specificity - 96.8% PPV - 56.4%</p> <p><b>Cut-off ≥ 6</b> Sensitivity - 26.8% Specificity - 99.4% PPV - 78.6%</p> <p><b>AUC</b> <b>PHQ-2</b> 0.93 The AUC was greater for those aged &lt;60 (0.94 vs. 0.86)</p> <p><b>Any Depressive disorder - N = 106/580</b></p> <p><b>PHQ-2</b> <b>Cut-off ≥ 1</b></p>

Patient Health Questionnaire-2 item (PHQ-2)				
Study	Identification tool	Comparator/ caseness	Population	Results
				<p>Sensitivity - 90.6%                      Specificity - 65.4%                      PPV - 36.9%</p> <p><b>Cut-off ≥ 2</b>                      Sensitivity - 82.1%                      Specificity - 80.4%                      PPV - 48.3%</p> <p><b>Cut-off ≥ 3</b>                      Sensitivity - 62.3%                      Specificity - 95.4%                      PPV - 75.0%</p> <p><b>Cut-off ≥ 4</b>                      Sensitivity - 50.9%                      Specificity - 97.9%                      PPV - 81.2%</p> <p><b>Cut-off ≥ 5</b>                      Sensitivity - 31.1%                      Specificity - 98.7%                      PPV - 84.6%</p> <p><b>Cut-off ≥ 6</b>                      Sensitivity - 12.3%                      Specificity - 99.8%                      PPV - 92.6%</p> <p><b>AUC</b>  <b>PHQ-2</b>                      0.90                      The AUC was lower for those aged &lt;60 (0.88 vs. 0.95)</p> <p><b>MDD</b>                      Sensitivity = 0.88 Specificity = 0.88</p> <p><b>Major Depressive disorder</b></p> <p><b>PHQ-9</b>  <b>Cut-off ≥ 9</b>                      Sensitivity - 95%                      Specificity - 84%</p> <p><b>Cut-off ≥ 10</b>                      Sensitivity - 88%                      Specificity - 88%</p> <p><b>Cut-off ≥ 11</b>                      Sensitivity - 83%</p>

Patient Health Questionnaire-2 item (PHQ-2)				
Study	Identification tool	Comparator/ caseness	Population	Results
				Specificity – 89%  <b>Cut-off ≥ 12</b> Sensitivity – 83% Specificity – 92%  <b>Cut-off ≥ 13</b> Sensitivity – 78% Specificity – 93%  <b>Cut-off ≥ 14</b> Sensitivity – 73% Specificity – 94%  <b>Cut-off ≥ 15</b> Sensitivity – 68% Specificity – 95%
Lowe 2005 – PHQ-2 (sub-group of Lowe 2004)  Lowe 2004A – PHQ-9 results  Lowe2004B – duplicate report  Quality assessed: +	PHQ-2	DSM-IV (SCID)	N= 520; medical outpatients: from 12 GPs in Heidelberg  Mean age = 41.3 y/o (SD = 14); 36% male  <u>Prevalence of major depression – 71/520</u>  <u>Prevalence of any depressive disorder – 132/520</u>	<b>Any depression</b>  <b>Standard cut-off ≥ 3- PHQ</b> Sensitivity – 79% Specificity – 86%  <b>Major depression</b>  <b>Standard cut-off ≥ 3- PHQ</b> Sensitivity – 87% Specificity – 78%
<b>Community</b>				
Li 2007  Quality assessed: +	Patient Health Questionnaire 2 (PHQ-2)	DSM-IV	N=8, 205 adults aged ≥ 65 who participated in the National Epidemiologic Survey on Alcohol and Related Conditions.  Mean age = 74.1, 29.5% Male.  The participants were a subset of the NESARC sample which is representative of the U.S. non-institutionalised population.  <u>Prevalence of depression – 323/8205</u>	<b>Depression</b>  <b>PHQ-2</b> <b>Two Questions:</b> Sensitivity – 100% Specificity – 77% (75.8, 78.0) AUC – 0.88 (0.87, 0.89) PPV – 14.3% (12.5, 16.1)  Paper further reports criterion validity of the PHQ-2 for different break downs of the population e.g. >85, Hispanic etc.

Patient Health Questionnaire-2 item (PHQ-2)				
Study	Identification tool	Comparator/ caseness	Population	Results

Patient Health Questionnaire-Whooley questions				
Study	Identification tool	Comparator/ caseness	Population	Results
<b>Consultation</b>				
Arroll 2003  Quality assessed: +	Two screening questions from B-PHQ (1) During the past two weeks, have you often been bothered by feeling down, depressed or hopeless?; (2) During the past month, have you often been bothered by little interest or pleasure in doing things?	Composite International Diagnostic Interview (CIDI)	N=421  Median age 46 years  Primary care patients  <i>Prevalence of depression - 29/421</i>	<b>Depression</b>  <b>2 items:</b> Sensitivity - 97% Specificity - 67% PPV - 18%  <b>Depression only question:</b> Sensitivity - 86% Specificity - 72% PPV - 18%  <b>Pleasure only question:</b> Sensitivity - 83% Specificity - 79% PPV - 22%
Arroll 2005  Quality assessed: +	Two screening questions: (1) during the past month have you often been bothered by feeling down, depressed or hopeless? (2) During the past month have you often been bothered by little interest or pleasure in doing things?  Help question: Is this something with which you would like help with?	Composite International Diagnostic Interview	N=1025  Primary care patients  <i>Prevalence of depression - 29/421</i>	<b>Depression</b>  <b>Help question alone -</b> Sensitivity - 75% (60, 85) Specificity - 94% (93, 96)  <b>Two screening questions alone -</b> Sensitivity - 96% (86, 99) Specificity - 78% (76, 81)  <b>Either screening question plus help question -</b> Sensitivity - 79% (65, 88) Specificity - 94% (92, 95)
Haughey 2005	PHQ-2 Whooley	DSM-IV	N = 226 People presenting to	<b>Depression</b>



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Patient Health Questionnaire-Whooley questions				
Study	Identification tool	Comparator/ caseness	Population	Results
Quality assessed: +			an urgent care clinic.  Mean age - 40 years (SD =19 years)  Male -  <u>Prevalence of depression - 31/226</u>	Sensitivity - 0.9677 Specificity - 0.5179
Robison 2002  Quality assessed: +	PHQ-2 Whooley	CIDI	N=303 Age = 61 years gender: 88 males, 215 females  Primary care, Hispanic population in US  Prevalence: 67/303	Sensitivity = 0.92 Specificity = 0.44
Whooley 1997  Quality assessed: +	PHQ-2 (Yes or No scale)	DSM-III- Diagnostic Interview Schedule (DIS)	N = 543 Patients visiting urgent care clinic  Mean age = 53 (S.D. 14)  Male = 97%  USA, San Francisco  <u>Prevalence of depression - 97/536</u>	<b>Major Depression</b>  <b>Two Questions:</b> 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
<b>Consultation</b>				
Azah 2005  Quality assessed: +	PHQ-9 (Malay version)	CIDI	N =265 patients attending a primary care clinic  Those scoring >5 and a selection of those scoring <5 were interviewed by a psychiatrist.  Mean age (of whole sample) - 38.7 (SD = 13.8)  Male (of whole sample) - 38.3%  <u>Prevalence of depression: -</u>	<b>Depression</b> <b>Optimal cut-off ≥ 5 - PHQ-9</b> 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
			<b>97/180</b>	
Corapcioglu 2004  Quality assessed: +	PHQ-9	DSM-IV	N=1387, Age = 29 years Gender: 857 males, 530 females  Primary care, Turkey  <u>Prevalence of depression -</u> <b>267/1387</b>  <u>Prevalence of major depression -</u> <b>91/1387</b>	<b>Depression:</b> <b>Standard cut-off - PHQ-9</b> Sensitivity = 0.76 Specificity = 0.853  <b>MDD:</b> <b>Standard cut-off - PHQ-9</b> Sensitivity = 0.714 Specificity = 0.919
Diez-Quevedo 2001  Quality assessed: +	PHQ-9	DSM-III-R	N=1003 Mean age = 43 years, gender: 552 males, 451 females  Medical and surgical inpatients, Spain  <u>Prevalence of depression:</u> <b>263/1003</b>  <u>Prevalence of major depression -</u> <b>148/1003</b>	<b>Any depression:</b> <b>Standard cut-off - PHQ-9</b> Sensitivity = 0.89 Specificity = 0.87  <b>MDD:</b> <b>Standard cut-off - PHQ-9</b> Sensitivity = 0.84 Specificity = 0.92
Eack 2006  Quality assessed: +	PHQ-9	SCID	N= 50, mean age = 39 years, gender: all female  Women in psychiatric services seeking treatment for their children  <u>Prevalence of depression: -</u> <b>17/50</b>	<b>MDD</b> <b>Standard cut-off - PHQ-9</b> True Positive = 9 False Positive = 9 False Negative = 5 True Negative = 27  <b>Any depression</b> <b>Standard cut-off - PHQ-9</b> True Positive = 11 False Positive = 10 False Negative = 6 True Negative = 22
Gilbody 2007  Quality assessed: +	PHQ-9	SCID	N=96, mean age = 43 years, gender: 22 males, 74 females  UK  <u>Prevalence of Major depression -</u> <b>36/96</b>	<b>MDD</b> <b>Standard cut-off - PHQ-9</b> Sensitivity = 0.917 Specificity = 0.783
Hahn 2006  Quality assessed:	Patient Health Questionnaire - Brief	CIDI (DSM-IV/ICD-10)	N = 204 chronically ill in-patients; 5.9% cardiovascular diseases, 8.8% orthopaedic	<b>Affective disorder</b> [single or recurrent major depression or dysthymia)

Patient Health Questionnaire-9 item (PHQ-9)				
Study	Identification tool	Comparator/ caseness	Population	Results
+			diseases, 5.4% cancer, 18.6% endocrinologic disease, 53.4% pneumological disease  Mean age = 49.6; age range 18-80  13 rehabilitation inpatient clinics in Germany  <u>Prevalence of depression - 35/204</u>	<b>Optimal cut-off <math>\geq 11</math>- PHQ-Brief</b> AUC - 0.844 (0.786-0.891) Sensitivity - 80% Specificity - 75.7% PPV - 40.6%
Henkel 2004  Quality assessed: +	Brief Patient Health Questionnaire (B-PHQ)	CIDI - ICD-10 (and DSM-IV research criteria for minor depression)	N = 448, of which 431 had an independent clinical diagnosis, mean age 48.98 (same participants as study above)  Primary care patients  <u>Prevalence of depression (any) - 82/431</u>  <u>Prevalence of depression (major) - 50/431</u>  <u>Prevalence of depression (dysthymia disorder) - 24/431</u>  <u>Prevalence of depression (minor) - 54/431</u>	<b>Any depression</b>  <b>Any depression according to ICD-10</b> AUC - 0.843  <b>Any depression according to ICD-10 including minor depression (per DSM-IV research criteria)</b> AUC - 0.783  <b>Major depression</b> AUC - 0.913  <b>Dysthymia disorder</b> AUC - 0.885  <b>Minor depression</b> AUC - 0.763  <b>Standard cut-off <math>\geq 2</math> inc. 1a or 1b - B-PHQ</b> Sensitivity - 79% Specificity - 86% PPV - 55% NPV - 95%
Kroenke2001, Spitzer 1999, Kroenke2003, Huang 2005 - All use same participants.  Kroenke2001, Huang2005 - PHQ-9	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.	<b>Major Depressive disorder</b>  <b>PHQ-9 Cut-off <math>\geq 9</math></b> Sensitivity - 95% Specificity - 84%  <b>Cut-off <math>\geq 10</math></b> Sensitivity - 88% Specificity - 88%

Patient Health Questionnaire-9 item (PHQ-9)				
Study	Identification tool	Comparator/ caseness	Population	Results
Spitzer1999, Kroenke2003 – PHQ-2  Quality assessed: +		professionals	The total sample was recruited from 5 general practices, 3 family practices and 7 obstetrics-gynecology sites)  <i>Prevalence of depression - 41/580</i>	<b>Cut-off ≥ 11</b> Sensitivity – 83% Specificity – 89%  <b>Cut-off ≥ 12</b> Sensitivity – 83% Specificity – 92%  <b>Cut-off ≥ 13</b> Sensitivity – 78% Specificity – 93%  <b>Cut-off ≥ 14</b> Sensitivity – 73% Specificity – 94%  <b>Cut-off ≥ 15</b> Sensitivity – 68% Specificity – 95%
Lotrakul 2008  Quality assessed: +	PHQ-9 Thai version	DSM-IV (MINI)	N = 924 patients at a family care clinic. N = 279 were included in a convenience sample assessed with the MINI  Mean age – 45.0 years (total sample)  Male – 26.3% (total sample)  <i>Prevalence of major depression – 13/279</i>  <i>Prevalence of any depression – 69/279</i>	<b>Major depression</b>  <b>Optimal cut-off ≥ 9- PHQ</b> Sensitivity – 84% Specificity – 77% PPV – 21% NPV – 99%  <b>Standard cut-off ≥ 10- PHQ</b> Sensitivity – 74% Specificity – 85% PPV – 27% NPV – 98%  <b>AUC – 0.89 (0.85 – 0.92)</b>
Lowe 2004A  Lowe2004B – duplicate report  Lowe 2005 – PHQ-2 data  Quality assessed: +	PHQ-9	DSM-IV (SCID)	N= 501; medical outpatients: 21% musculo-skeletal disease, 16% endocrine, nutritional & metabolic disease, 10% cardiovascular/circulatory disease, 7% gastrointestinal disease, 6% respiratory system disease  Mean age = 41.7 y/o (SD = 13.8); 32.9% male  395 outpatients from	<b>Any depression</b>  <b>Cut-off ≥ 9- PHQ</b> Sensitivity – 87% (79, 92) Specificity – 76% (72, 80)  <b>Cut-off ≥ 10- PHQ</b> Sensitivity – 81% (73, 87) Specificity – 82% (78, 86)  <b>Cut-off ≥ 11- PHQ</b> Sensitivity – 79% (70, 85) Specificity – 85% (81, 89)

Patient Health Questionnaire-9 item (PHQ-9)				
Study	Identification tool	Comparator/ caseness	Population	Results
			Heidelberg University Medical Hospital  106 patients from 12 GPs in Heidelberg  <u>Prevalence of depression -</u> <b>66/501</b>	<b>Major depression</b>  <b>Cut-off <math>\geq 11</math>- PHQ</b> Sensitivity - 98% (92, 100) Specificity - 80% (76, 83)  <b>Cut-off <math>\geq 12</math>- PHQ</b> Sensitivity - 95% (87, 99) Specificity - 84% (80, 87)  <b>Cut-off <math>\geq 13</math>- PHQ</b> Sensitivity - 88% (78, 95) Specificity - 87% (84, 90)
Yeung 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> <b>42/184</b>	<b>MDD</b> <b>PHQ-9 optimal cut-off <math>\geq 10</math></b> Sensitivity - 81% Specificity - 98% PPV - 92% NPV - 95%  AUC - 97 (SE 0.01)
<b>Community</b>				
Adewuya 2006  Quality assessed: +	PHQ-9	Mini International Neuropsychi atric Interview (MINI)	N = 512, Age = 25, Males: 59%  Nigeria, student sample at university  <u>Prevalence: major depression -</u> <b>13/512</b>	<b>MDD only</b> <b>Cut-off <math>\geq 10</math> -PHQ-9</b> Sensitivity = 0.846 Specificity = 0.994 PPV = 0.750 NPV = 0.996
Han 2008  Quality assessed: +	PHQ-9	DSM-IV	N=1060, Age = >60 years Gender: No information  South Korea, population based geriatric sample  <u>Prevalence of depression -</u> <b>175/1060</b>  <u>Prevalence of major depression -</u> <b>62/1060</b>	<b>Any depression:</b>  <b>Cut-off 5 - PHQ-9</b> Sensitivity = 0.80 Specificity = 0.78

## Single Question

Single Question and two-item screens				
Study	Identification tool	Comparator/ caseness	Population	Results
<b>Consultation</b>				
Arroll 2003  Quality assessed: +	Two screening questions from B-PHQ (1) During the past two weeks, have you often been bothered by feeling down, depressed or hopeless?; (2) During the past month, have you often been bothered by little interest or pleasure in doing things?	Composite International Diagnostic Interview (CIDI)	N=421  Median age 46 years  Primary care patients  <u>Prevalence of depression - 29/421</u>	<b>Depression</b>  <b>Depression only question:</b> Sensitivity - 86% Specificity - 72% PPV - 18%  <b>Pleasure only question:</b> Sensitivity - 83% Specificity - 79% PPV - 22%
Arroll 2005  Quality assessed: +	Two screening questions: (1) during the past month have you often been bothered by feeling down, depressed or hopeless?; (2) during the past month have you often been bothered by little interest or pleasure in doing things?  Help question: Is this something with which you would like help with?	Composite International Diagnostic Interview	N=1025  Primary care patients  <u>Prevalence of depression - 29/421</u>	<b>Depression</b>  <b>Help question alone -</b> Sensitivity - 75% (60, 85) Specificity - 94% (93, 96)  <b>Two screening questions alone -</b> Sensitivity - 96% (86, 99) Specificity - 78% (76, 81)  <b>Either screening question plus help question -</b> Sensitivity - 79% (65, 88) Specificity - 94% (92, 95)
Howe 2000  Quality assessed: +	MHI-1	DSM-IV	N=100 age = 81 years, gender: 38 males 62 females.  Older adults from UK primary care settings	<b>Depression:</b>  Sensitivity = 0.67 Specificity = 0.60

Single Question and two-item screens				
Study	Identification tool	Comparator/ caseness	Population	Results
			Prevalence: 30/100	
Means-Christensen 2006  Quality assessed: +	Screening question - 1. Have you lost interest in things? 2. Have you felt sad, empty or depressed?	Composite International Diagnostic Interview	N= 801; 37.8% male; mean age 41.49 y/o (SD = 12.48), age range 19 -79.  Primary care patients in clinic in US  <i>Prevalence of depression - 41/115</i>	<b>Depression</b>  Sensitivity - 88% Specificity - 75% PPV - 19% NPV - 99%
Pomeroy 2001  Quality assessed: +	MHI-1 (Are you depressed?)	ICD-10	N = 87 patients over the age of 60 admitted to medical rehabilitation wards or attending day rehabilitation facilities; 40% male, mean age 78.4 (SD - 7.7 yrs)  <i>Prevalence of depression - 17/87</i>	<b>Depression</b>  Sensitivity - 88.2% Specificity - 71.4% AUC - 0.88 (0.79-0.97) PPV - 42.9% NPV - 96.1%
Robison 2002  Quality assessed: ++	Yale-1	CIDI	N=303 Age = 61 years gender: 88 males, 215 females  Primary care, Hispanic population in US  Prevalence: 67/303	<b>Depression</b>  Sensitivity = 0.86 Specificity = 0.42
Williams 1999  Quality assessed: +	CES-D	DSM-IV	N=291 age: 58 years, gender: 93 males, 198 females Prevalence: 40/291  US	<b>Depression</b> Sensitivity 0.85 Specificity 0.66

### Zung's Self-Rating Depression Scale

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

			<u>Prevalence of depression -</u> <b>44/266</b>	NPV - 97.1% AUC - 0.901
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