

Depression Screening Tools for Patients with Kidney Failure: A Systematic Review Supplementary Material

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Supplemental Material. Search Strategies (Parent VA systematic review)

Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations and Daily 1946 to June 24, 2020

#	Searches
1	Kidney Failure, Chronic/
2	((((chronic or endstage or end-stage or endstate or end-state or failure or long-term or maintenance) adj2 (kidney or renal)) or ESKD or ESKF or ESRD or ESRF).ti,ab,kf.
3	Renal Dialysis/ or Hemofiltration/ or Hemodiafiltration/ or Hemodialysis, Home/ or Peritoneal Dialysis/ or Peritoneal Dialysis, Continuous Ambulatory/
4	(dialysis or haemodiafiltration or hemodiafiltration or haemo-diafiltration or hemo-diafiltration or haemofiltration or hemofiltration or haemo-filtration or hemo-filtration or haemodialysis or hemodialysis or haemo-dialysis or hemo-dialysis).ti,ab,kf.
5	or/1-4
6	Depression/ or Depressive Disorder/ or Depressive Disorder, Major/ or Depressive Disorder, Treatment-Resistant/
7	(depressed or depressive or depression* or suicidal or suicide or suicides).ti,ab,kf.
8	or/6-7
9	and/5,8
10	Brief Psychiatric Rating Scale/ or Diagnostic Self Evaluation/ or "Diagnostic Techniques and Procedures"/ or Mental Status Schedule/ or Neuropsychological Tests/ or Patient Health Questionnaire/ or Psychiatric Status Rating Scales/ or exp Psychological Tests/ or exp "Surveys and Questionnaires"/
11	(checklist* or check-list* or questionnaire or questionnaires or instrument or instruments or inventory or inventories or scale or scales or schedule or schedules or screen or screened or screening or "Beck Depression" or BDI or BDI2 or "geriatric depression scale" or GDS or "Hamilton Rating Scale for Depression" or "Hospital Anxiety and Depression Scale" or HADS or "Kidney Disease Quality of Life" or KDQOL or "Medical Outcomes Study Short Form Health Survey 36" or MOS-SF36 or "Minnesota Multiphasic Personality Inventory" or MMPI or "Multiple Affect Adjective Check List" or MAACL or "Patient Health Questionnaire" or PHQ2 or PHQ-2 or PHQ9 or PHQ-9 or "PRIME-MD" or "Epidemiologic Studies Depression Scale" or CED or CESD or BREF or DASS21 or IDID or "Quick Inventory of Depressive Symptomatology Self-Report" or QIDS-SR or "RAND 36-Item Health Survey" or RAND-36 or "short form 36" or SF-36 or "Structured Clinical Interview" or SCID or "self-rating depression scale" or SDS or "Short Form Health Survey 36" or SF36).ti,ab,kf.
12	exp Behavior Therapy/ or exp Cognitive Behavioral Therapy/ or exp Mental Health Services/ or exp Psychotherapy/ or Psychosocial Support Systems/ or Social Support/ or Motivational Interviewing/ or Patient Participation/
13	(cognitive-behavior* or cognitive-behaviour* or intervention or interventions or nondrug or non-drug or nonpharmac* or non-pharmac* or pharmac* or program* or psych* or psychosocial or psycho-social or rehabilitation or therapy or therapies or treat*).ti,ab,kf.
14	Antidepressive Agents/ or Antidepressive Agents, Second-generation/ or Serotonin Uptake Inhibitors/ or "Serotonin and Noradrenaline Reuptake Inhibitors"/ or Adrenergic Uptake Inhibitors/ or 5-hydroxytryptophan/ or Amisulpride/ or Bupropion/ or Citalopram/ or Fluoxetine/ or Fluvoxamine/ or Maprotiline/ or Mianserin/ or Paroxetine/ or Quipazine/ or Ritanterin/ or Sulpiride/ or Trazodone/ or Tryptophan/ or Venlafaxine Hydrochloride/ or Viloxazine/
15	(antidepress* or anti-depress* or 5-hydroxytryptophan or Amisulpride or Bupropion or Citalopram or Escitalopram or Fluoxetine or Fluvoxamine or Maprotiline or Mianserin or Paroxetine or Quipazine or Ritanterin or Sulpiride or Trazodone or Tryptophan or Venlafaxine Hydrochloride or Viloxazine or SSRI or SSRIs or "selective serotonin reuptake" or "selective serotonin re-uptake" or SNRI or SNRIs or "Serotonin and Noradrenaline Reuptake Inhibitor" or "Serotonin and Noradrenaline Reuptake Inhibitors" or NRI or NRIs or "norepinephrine reuptake inhibitor" or "norepinephrine reuptake inhibitors").ti,ab,kf.

16	Antidepressive Agents, Tricyclic/ or Amitriptyline/ or Amoxapine/ or Clomipramine/ or Desipramine/ or Dothiepin/ or Doxepin/ or Imipramine/ or Iprindole/ or Lofepramine/ or Nortriptyline/ or Opipramol/ or Protriptyline/ or Trimipramine/
17	(Amitriptyline or Amoxapine or Clomipramine or Desipramine or Dothiepin or Doxepin or Imipramine or Iprindole or Lofepramine or Nortriptyline or Opipramol or Protriptyline or Trimipramine or Gabapentin or Sildenafil or Vardenafil).ti,ab,kf,nm.
18	(nondrug or non-drug or nonpharmacolog* or non-pharmacolog*).ti,ab,kf.
19	Exercise Therapy/ or Resistance Training/
20	((((aerobic or resistance) adj2 (exercis* or program* or therap* or train*)) or (exercise adj2 (program* or therap* or train*)) or cross-training).ti,ab,kf.
21	Music Therapy/
22	music therapy.ti,ab,kf.
23	or/10-22
24	and/9,23
25	limit 24 to english language

PsycINFO 1806 to week of June 24, 2020

	Searches
1	Kidney Diseases/
2	((((chronic or endstage or end-stage or endstate or end-state or failure or long-term or maintenance) adj2 (kidney or renal)) or ESKD or ESKF or ESRD or ESRF).ti,ab.
3	Dialysis/ or Hemodialysis/
4	(dialysis or haemodiafiltration or hemodiafiltration or haemo-diafiltration or hemo-diafiltration or haemofiltration or hemofiltration or haemo-filtration or hemo-filtration or haemodialysis or hemodialysis or haemo-dialysis or hemo-dialysis).ti,ab.
5	or/1-4
6	"Depression (Emotion)"/ or Major Depression/ or Reactive Depression/ or Recurrent Depression/ or Treatment Resistant Depression/
7	(depressed or depressive or depression* or suicidal or suicide or suicides).ti,ab.
8	or/6-7
9	and/5,8
10	exp Measurement/ or exp Attitude Measures/ or exp "Checklist (Testing)"/ or exp Inventories/ or exp Psychological Assessment/ or exp Questionnaires/ or exp Rating Scales/ or exp Screening/ or exp Screening Tests/ or exp Standardized Tests/ or exp "Stress and Coping Measures"/ or exp Testing/
11	(checklist* or check-list* or questionnaire or questionnaires or instrument or instruments or inventory or inventories or scale or scales or schedule or schedules or screen or screened or screening or "Beck Depression" or BDI or BDI2 or "geriatric depression scale" or GDS or "Hamilton Rating Scale for Depression" or "Hospital Anxiety and Depression Scale" or HADS or "Kidney Disease Quality of Life" or KDQOL or "Medical Outcomes Study Short Form Health Survey 36" or MOS-SF36 or "Minnesota Multiphasic Personality Inventory" or MMPI or "Multiple Affect Adjective Check List" or MAACL or "Patient Health Questionnaire" or PHQ2 or PHQ-2 or PHQ9 or PHQ-9 or "PRIME-MD" or "Epidemiologic Studies Depression Scale" or CED or CESD or BREF or DASS21 or IDID or "Quick Inventory of Depressive Symptomatology Self-Report" or QIDS-SR or "RAND 36-Item Health Survey" or RAND-36 or "short form 36" or SF-36 or "Structured Clinical Interview" or SCID or "self-rating depression scale" or SDS or "Short Form Health Survey 36" or SF36).ti,ab.
12	("Beck Depression" or BDI or BDI2 or "geriatric depression scale" or GDS or "Hamilton Rating Scale for Depression" or "Hospital Anxiety and Depression Scale" or HADS or "Kidney Disease Quality of Life" or KDQOL or "Medical Outcomes Study Short Form Health Survey 36" or MOS-SF36 or "Minnesota Multiphasic Personality Inventory" or MMPI or "Multiple Affect Adjective Check List" or MAACL or "Patient Health

	Questionnaire" or PHQ2 or PHQ-2 or PHQ9 or PHQ-9 or PHQ-ADS or "PRIME-MD" or "Epidemiologic Studies Depression Scale" or CED or CESD or BREF or DASS21 or IDID or "Quick Inventory of Depressive Symptomatology Self-Report" or QIDS-SR or "RAND 36-Item Health Survey" or RAND-36 or "short form 36" or SF-36 or "Structured Clinical Interview" or SCID or "self-rating depression scale" or SDS or "Short Form Health Survey 36" or SF36).tm.
13	exp Treatment/
14	exp Behavior Modification/ or exp Behavior Therapy/ or Biofeedback Training/ or Contingency Management/ or Self-management/ or Anxiety Management/ or Cognitive Therapy/ or Readiness to Change/ or Relaxation Therapy/ or Self-help Techniques/ or Self-monitoring/ or Stress Management/
15	(cognitive-behavior* or cognitive-behaviour* or intervention or interventions or nondrug or non-drug or nonpharmac* or non-pharmac* or pharmac* or program* or psych* or psychosocial or psycho-social or rehabilitation or therapy or therapies or treat*).ti,ab.
16	Antidepressant Drugs/ or Serotonin Norepinephrine Reuptake Inhibitors/ or Serotonin Reuptake Inhibitors/ or Tricyclic Antidepressant Drugs/ or Bupropion/ or Citalopram/ or Fluoxetine/ or Fluvoxamine/ or "Hydroxytryptophan (5-)" or MAPROTILINE/ or Mianserin/ or Paroxetine/ or RITANSERIN/ or Sulpiride/ or Trazodone/ or Tryptophan/ or Venlafaxine/
17	(antidepress* or anti-depress* or 5-hydroxytryptophan or Amisulpride or Bupropion or Citalopram or Escitalopram or Fluoxetine or Fluvoxamine or Maprotiline or Mianserin or Paroxetine or Quipazine or Ritanserin or Sulpiride or Trazodone or Tryptophan or Venlafaxine Hydrochloride or Viloxazine or SSRI or SSRIs or "selective serotonin reuptake" or "selective serotonin re-uptake" or SNRI or SNRIs or "Serotonin and Noradrenaline Reuptake Inhibitor" or "Serotonin and Noradrenaline Reuptake Inhibitors" or NRI or NRIs or "norepinephrine reuptake inhibitor" or "norepinephrine reuptake inhibitors").ti,ab.
18	(Amitriptyline or Amoxapine or Clomipramine or Desipramine or Dothiepin or Doxepin or Imipramine or Iprindole or Lofepramine or Nortriptyline or Opipramol or Protriptyline or Trimipramine or Gabapentin or Sildenafil or Vardenafil).ti,ab.
19	(nondrug or non-drug or nonpharmacolog* or non-pharmacolog* or coping or psychosocial* or psycho-social* or "social support" or "social work*" or stress).ti,ab.
20	exp Exercise/
21	((((aerobic or resistance) adj2 (exercis* or program* or therap* or train*)) or (exercise adj2 (program* or therap* or train*)) or cross-training).ti,ab.
22	Music Therapy/
23	music therapy.ti,ab.
24	or/10-23
25	and/9,24
26	limit 25 to english language

Embase.com

Date searched: **June 24, 2020**

#	Search
#26	#25 AND [embase]/lim NOT ([embase]/lim AND [medline]/lim)
#25	#9 AND #23 AND [english]/lim
#24	#9 AND #23
#23	#10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22
#22	'music therapy':ti,ab,kw
#21	'music therapy'/de
#20	((((aerobic OR resistance) NEAR/2 (exercis* OR program* OR therap* OR train*)):ti,ab,kw) OR ((exercise NEAR/2 (program* OR therap* OR train*)):ti,ab,kw) OR 'cross training':ti,ab,kw
#19	'kinesiotherapy'/de OR 'resistance training'/de
#18	nondrug:ti,ab,kw OR 'non drug':ti,ab,kw OR nonpharmacolog*:ti,ab,kw OR 'non pharmacolog*':ti,ab,kw

#17	amitriptyline:ti,ab,kw OR amoxapine:ti,ab,kw OR clomipramine:ti,ab,kw OR desipramine:ti,ab,kw OR dothiepin:ti,ab,kw OR doxepin:ti,ab,kw OR imipramine:ti,ab,kw OR iprindole:ti,ab,kw OR lofepramine:ti,ab,kw OR nortriptyline:ti,ab,kw OR opipramol:ti,ab,kw OR protriptyline:ti,ab,kw OR trimipramine:ti,ab,kw OR gabapentin:ti,ab,kw OR sildenafil:ti,ab,kw OR vardenafil:ti,ab,kw
#16	'tricyclic antidepressant agent'/de OR 'amitriptyline'/de OR 'clomipramine'/de OR 'desipramine'/de OR 'dosulepin'/de OR 'doxepin'/de OR 'imipramine'/de OR 'iprindole'/de OR 'lofepramine'/de OR 'nortriptyline'/de OR 'opipramol'/de OR 'protriptyline'/de OR 'trimipramine'/de
#15	((antidepress*:ti,ab,kw OR 'anti depress*:ti,ab,kw OR '5 hydroxytryptophan':ti,ab,kw OR amisulpride:ti,ab,kw OR bupropion:ti,ab,kw OR citalopram:ti,ab,kw OR escitalopram:ti,ab,kw OR fluoxetine:ti,ab,kw OR fluvoxamine:ti,ab,kw OR maprotiline:ti,ab,kw OR mianserin:ti,ab,kw OR paroxetine:ti,ab,kw OR quipazine:ti,ab,kw OR ritanserin:ti,ab,kw OR sulpiride:ti,ab,kw OR trazodone:ti,ab,kw OR tryptophan:ti,ab,kw OR 'venlafaxine hydrochloride':ti,ab,kw OR viloxazine:ti,ab,kw OR ssri:ti,ab,kw OR ssris:ti,ab,kw OR 'selective serotonin reuptake':ti,ab,kw OR 'selective serotonin re-uptake':ti,ab,kw OR snri:ti,ab,kw OR snris:ti,ab,kw OR serotonin:ti,ab,kw) AND 'noradrenaline reuptake inhibitor':ti,ab,kw OR serotonin:ti,ab,kw) AND 'noradrenaline reuptake inhibitors':ti,ab,kw OR nri:ti,ab,kw OR nrri:ti,ab,kw OR 'norepinephrine reuptake inhibitor':ti,ab,kw OR 'norepinephrine reuptake inhibitors':ti,ab,kw
#14	'antidepressant agent'/de OR 'serotonin uptake inhibitor'/de OR 'serotonin noradrenalin reuptake inhibitor'/de OR 'adrenergic receptor affecting agent'/de OR '5 hydroxytryptophan'/de OR 'amisulpride'/de OR 'amfebutamone'/de OR 'citalopram'/de OR 'fluoxetine'/de OR 'fluvoxamine'/de OR 'maprotiline'/de OR 'mianserin'/de OR 'paroxetine'/de OR 'quipazine'/de OR 'ritanserin'/de OR 'sulpiride'/de OR 'trazodone'/de OR 'tryptophan'/de OR 'venlafaxine'/de OR 'viloxazine'/de
#13	'cognitive behavior*:ti,ab,kw OR 'cognitive behaviour*:ti,ab,kw OR intervention:ti,ab,kw OR interventions:ti,ab,kw OR nondrug:ti,ab,kw OR 'non drug':ti,ab,kw OR nonpharmac*:ti,ab,kw OR 'non pharmac*:ti,ab,kw OR pharmac*:ti,ab,kw OR program*:ti,ab,kw OR psych*:ti,ab,kw OR psychosocial:ti,ab,kw OR 'psycho social':ti,ab,kw OR rehabilitation:ti,ab,kw OR therapy:ti,ab,kw OR therapies:ti,ab,kw OR treat*:ti,ab,kw
#12	'behavior therapy'/de OR 'cognitive behavioral therapy'/de OR 'mental health service'/de OR 'psychotherapy'/de OR 'psychosocial care'/de OR 'social support'/de OR 'motivational interviewing'/de OR 'patient participation'/de
#11	(checklist*:ti,ab,kw OR 'check list*:ti,ab,kw OR questionnaire:ti,ab,kw OR questionnaires:ti,ab,kw OR instrument:ti,ab,kw OR instruments:ti,ab,kw OR inventory:ti,ab,kw OR inventories:ti,ab,kw OR scale:ti,ab,kw OR scales:ti,ab,kw OR schedule:ti,ab,kw OR schedules:ti,ab,kw OR screen:ti,ab,kw OR screened:ti,ab,kw OR screening:ti,ab,kw OR 'beck depression':ti,ab,kw OR bdi:ti,ab,kw OR bdi2:ti,ab,kw OR 'geriatric depression scale':ti,ab,kw OR gds:ti,ab,kw OR 'hamilton rating scale for depression':ti,ab,kw OR 'hospital anxiety':ti,ab,kw) AND 'depression scale':ti,ab,kw OR hads:ti,ab,kw OR 'kidney disease quality of life':ti,ab,kw OR kdqol:ti,ab,kw OR 'medical outcomes study short form health survey 36':ti,ab,kw OR 'mos sf36':ti,ab,kw OR 'minnesota multiphasic personality inventory':ti,ab,kw OR mmpi:ti,ab,kw OR 'multiple affect adjective check list':ti,ab,kw OR maacl:ti,ab,kw OR 'patient health questionnaire':ti,ab,kw OR phq2:ti,ab,kw OR 'phq 2':ti,ab,kw OR phq9:ti,ab,kw OR 'phq 9':ti,ab,kw OR 'prime-md':ti,ab,kw OR 'epidemiologic studies depression scale':ti,ab,kw OR ced:ti,ab,kw OR cesd:ti,ab,kw OR bref:ti,ab,kw OR dass21:ti,ab,kw OR idid:ti,ab,kw OR 'quick inventory of depressive symptomatology self-report':ti,ab,kw OR 'qids sr':ti,ab,kw OR 'rand 36-item health survey':ti,ab,kw OR 'rand 36':ti,ab,kw OR 'short form 36':ti,ab,kw OR 'sf 36':ti,ab,kw OR 'structured clinical interview':ti,ab,kw OR scid:ti,ab,kw OR 'self-rating depression scale':ti,ab,kw OR sds:ti,ab,kw OR 'short form health survey 36':ti,ab,kw OR sf36:ti,ab,kw
#10	'brief psychiatric rating scale'/de OR 'diagnostic procedure'/de OR 'neuropsychological test'/de OR 'patient health questionnaire'/de OR 'psychological rating scale'/de OR 'psychologic test'/de OR 'questionnaire'/de
#9	#5 AND #8
#8	#6 OR #7
#7	depressed:ti,ab,kw OR depressive:ti,ab,kw OR depression*:ti,ab,kw OR suicidal:ti,ab,kw OR suicide:ti,ab,kw OR suicides:ti,ab,kw
#6	'depression'/exp
#5	#1 OR #2 OR #3 OR #4
#4	dialysis:ti,ab,kw OR haemodiafiltration:ti,ab,kw OR hemodiafiltration:ti,ab,kw OR 'haemo diafiltration':ti,ab,kw OR 'hemo diafiltration':ti,ab,kw OR haemofiltration:ti,ab,kw OR hemofiltration:ti,ab,kw OR 'haemo filtration':ti,ab,kw OR 'hemo filtration':ti,ab,kw OR haemodialysis:ti,ab,kw OR hemodialysis:ti,ab,kw OR 'haemo dialysis':ti,ab,kw OR 'hemo dialysis':ti,ab,kw

#3	'hemodialysis'/exp OR 'hemofiltration'/exp OR 'hemodiafiltration'/exp OR 'peritoneal dialysis'/exp
#2	((((chronic OR endstage OR 'end stage' OR endstate OR 'end state' OR failure OR 'long term' OR maintenance) NEAR/2 (kidney OR renal)):ti,ab,kw) OR eskd:ti,ab,kw OR eskf:ti,ab,kw OR esrd:ti,ab,kw OR esrf:ti,ab,kw
#1	'chronic kidney failure'/exp

EBM Reviews:

Cochrane Central Register of Controlled Trials

Cochrane Database of Systematic Reviews 2005 to June 24, 2020

Database of Abstracts of Reviews of Effects 1st Quarter 2016

Health Technology Assessment 4th Quarter 2016

Date searched: **June 24, 2020**

#	Searches
1	((((chronic or endstage or end-stage or endstate or end-state or failure or long-term or maintenance) adj2 (kidney or renal)) or ESKD or ESKF or ESRD or ESRF).ti,ab.
2	(dialysis or haemodiafiltration or hemodiafiltration or haemo-diafiltration or hemo-diafiltration or haemofiltration or hemofiltration or haemo-filtration or hemo-filtration or haemodialysis or hemodialysis or haemo-dialysis or hemo-dialysis).ti,ab.
3	or/1-2
4	(depressed or depressive or depression* or suicidal or suicide or suicides).ti,ab.
5	and/3-4
6	(checklist* or check-list* or questionnaire or questionnaires or instrument or instruments or inventory or inventories or scale or scales or schedule or schedules or screen or screened or screening or "Beck Depression" or BDI or BDI2 or "geriatric depression scale" or GDS or "Hamilton Rating Scale for Depression" or "Hospital Anxiety and Depression Scale" or HADS or "Kidney Disease Quality of Life" or KDQOL or "Medical Outcomes Study Short Form Health Survey 36" or MOS-SF36 or "Minnesota Multiphasic Personality Inventory" or MMPI or "Multiple Affect Adjective Check List" or MAACL or "Patient Health Questionnaire" or PHQ2 or PHQ-2 or PHQ9 or PHQ-9 or "PRIME-MD" or "Epidemiologic Studies Depression Scale" or CED or CESD or BREF or DASS21 or IDID or "Quick Inventory of Depressive Symptomatology Self-Report" or QIDS-SR or "RAND 36-Item Health Survey" or RAND-36 or "short form 36" or SF-36 or "Structured Clinical Interview" or SCID or "self-rating depression scale" or SDS or "Short Form Health Survey 36" or SF36).ti,ab.
7	(cognitive-behavior* or cognitive-behaviour* or intervention or interventions or nondrug or non-drug or nonpharmac* or non-pharmac* or pharmac* or program* or psych* or psychosocial or psycho-social or rehabilitation or therapy or therapies or treat*).ti,ab.
8	(antidepress* or anti-depress* or 5-hydroxytryptophan or Amisulpride or Bupropion or Citalopram or Escitalopram or Fluoxetine or Fluvoxamine or Maprotiline or Mianserin or Paroxetine or Quipazine or Ritanserin or Sulpiride or Trazodone or Tryptophan or Venlafaxine Hydrochloride or Viloxazine or SSRI or SSRIs or "selective serotonin reuptake" or "selective serotonin re-uptake" or SNRI or SNRIs or "Serotonin and Noradrenaline Reuptake Inhibitor" or "Serotonin and Noradrenaline Reuptake Inhibitors" or NRI or NRIs or "norepinephrine reuptake inhibitor" or "norepinephrine reuptake inhibitors").ti,ab.
9	(Amitriptyline or Amoxapine or Clomipramine or Desipramine or Dothiepin or Doxepin or Imipramine or Iprindole or Lofepramine or Nortriptyline or Opipramol or Protriptyline or Trimipramine or Gabapentin or Sildenafil or Vardenafil).ti,ab.
10	(nondrug or non-drug or nonpharmacolog* or non-pharmacolog*).ti,ab.
11	((((aerobic or resistance) adj2 (exercis* or program* or therap* or train*)) or (exercise adj2 (program* or therap* or train*)) or cross-training).ti,ab.
12	music therapy.ti,ab.
13	or/6-12
14	and/5,13

ClinicalTrials.gov

Date searched: **June 24, 2020**

(depressed OR depressive OR depression* OR suicidal OR suicide OR suicides) AND
INFLECT EXACT ("Active, not recruiting" OR "Completed" OR "Suspended" OR
"Terminated" OR "Withdrawn" OR "Unknown status") [OVERALL-STATUS] AND ((chronic OR endstage OR end-stage OR failure) AND (kidney OR renal) OR ESKD OR
ESKF OR ESRD OR ESRF OR dialysis OR haemodiafiltration OR hemodiafiltration OR
haemo-diafiltration OR hemo-diafiltration OR haemofiltration OR hemofiltration OR
haemo-fi) [DISEASE]

WHO ICTRP

Date searched: **June 24, 2020**

((((chronic OR endstage OR end-stage OR failure) AND (kidney OR renal)) OR ESKD OR
ESKF OR ESRD OR ESRF) AND (depress* OR suicid*))

VA HSR&D

<https://www.hsr.dresearch.va.gov/research/>

Date searched: **June 24, 2020**

Separately searched terms: kidney and renal. Reviewed result lists

Table S1. PICOTS by Key Question

Key Question:	KQ1: What are the performance characteristics of screening tools for depression in patients with kidney failure?	KQ2: What is the impact of screening for depression in patients with kidney failure on intermediate and/or patient outcomes?	KQ4: In patients with ESRD, what are the potential harms of screening?	KQ5: Do the benefits or harms of screening differ by: a. patient characteristics or other social determinants of health? b. setting? c. screening characteristics/ process? d. other (e.g., patient engagement/ receptivity to treatment, social support)? e. Timing and type of follow up?
Population	Adults with kidney failure			
Intervention	Depression screening			
Comparators	Clinical evaluation, Other screening tools. Exclude DSM-III and earlier	No screening, other screening tool.		
Outcomes	<u>Diagnostic test performance:</u> sensitivity, specificity, positive predictive value, and negative predictive value	<u>Therapeutic impact:</u> timing, setting, or type of treatment. <u>Intermediate and Patient outcomes:</u> depressive symptoms, mortality, suicide attempts or completion, hospitalization, ED/urgent care utilization, patient satisfaction, adherence to dialysis, medication, or treatment, pain	Adverse effects or unintended consequences	<u>Intermediate and Patient outcomes:</u> depressive symptoms, mortality, suicide attempts or completion, hospitalization, ED/urgent care utilization, patient satisfaction, adherence to dialysis, medication, or treatment, pain medication reduction, BP/metabolic control, quality of life, other outcomes (e.g., employment)

		medication reduction, BP/metabolic control, quality of life, other outcomes (e.g., employment)		
Timing	Any			
Settings	All settings in U.S. or international (VHA, hospital community, community mental health, ED, urgent care, other community)			
Study design	Systematic reviews, RCTs, NRCTs, Observational studies			

Note. Subpopulations may include: Patient demographic characteristics or social determinants of health; ESRD subgroup (w/o treatment; treated by kidney transplant; treated by HD (home or clinic); treated by PD (home or clinic); clinical severity (ESRD or depression); setting (*eg* VHA, community hospitals, community mental health, ED, urgent care visits for mental health, home vs clinic-based dialysis); other.

Abbreviations: CES-D = Center for Epidemiologic Studies Depression Scale; BDI = Beck Depression Inventory; BP = blood pressure; ED = emergency department; ESRD = End-stage Renal Disease; HADS = Hospital Anxiety and Depression Scale; HAM-D = Hamilton Depression Rating Scale; NRCT = Non-randomized controlled trial; PHQ-9 = Patient Health Questionnaire-9; RCT = Randomized controlled trial; VHA = Veterans Health Administration

Table S2. QUADAS-2 Risk of Bias Assessment

	Could the selection of patients have introduced bias?				Could the conduct or interpretation of the index test have introduced bias?					Could the conduct or interpretation of the reference standard have introduced bias?					Could the patient flow have introduced bias?				Applicability			
	1	2	3	ROB	4	5	6	7	ROB	8	9	10	11	ROB	12	13	14	ROB	15	16	17	ROB
Alsuwaida, 2006(1)	U	Y	U	Unclear	Y	U	U	Y	Unclear	Y	Y	U	Y	Unclear	Y	NA	U	Unclear	N	N	N	Low
Balogun, 2011(2)	U	Y	Y	Unclear	Y	U	U	Y	Unclear	Y	U	U	U	Unclear	Y	Y	N	High	N	N	N	Low
Bautovich, 2018(3)	U	Y	Y	Unclear	Y	U	NA	Y	Unclear	Y	Y	N	Y	High	Y	NA	Y	Low	N	N	N	Low
Chilcot, 2008(4)	U	Y	Y	Unclear	U	U	NA	Y	Unclear	U	Y	U	U	Unclear	Y	NA	Y	Low	N	N	N	Low
Collister, 2019(5)	Y	Y	Y	Low	U	U	U	Y	Unclear	U	U	U	U	Unclear	Y	NA	Y	Low	N	N	N	Low
Gencoz, 2007(6)	Y	Y	U	Unclear	Y	Y	Y	Y	Low	Y	U	Y	U	Unclear	Y	Y	Y	Low	N	N	N	Low
Giordano, 2007(7)	Y	U	Y	Unclear	U	Y	Y	Y	Unclear	Y	Y	U	Y	Unclear	Y	NA	N	High	N	N	N	Low
Grant, 2008(8)	U	Y	Y	Unclear	U	U	NA	Y	Unclear	U	Y	U	Y	Unclear	Y	NA	Y	Low	N	N	N	Low
Hedayati, 2006(9)	U	Y	Y	Unclear	Y	U	NA	Y	Unclear	U	Y	U	Y	Unclear	Y	NA	Y	Low	N	N	N	Low
Loosman, 2010(10)	U	Y	Y	Unclear	Y	U	NA	Y	Unclear	Y	Y	Y	Y	Low	Y	NA	Y	Low	N	N	N	Low
Neitzer, 2012(11)	U	Y	Y	Unclear	U	U	NA	Y	Unclear	U	U	NA	Y	Unclear	Y	NA	Y	Low	N	N	N	Low
Preljevic, 2012(12)	U	Y	Y	Unclear	Y	U	NA	Y	Unclear	Y	U	Y	Y	Unclear	Y	NA	N	Low	N	N	N	Low
Troidle, 2003(13)	Y	Y	Y	Low	N	U	U	Y	High	U	U	U	U	Unclear	Y	NA	Y	Low	N	N	N	Low
Van den Beukel, 2012(14)	U	Y	Y	Unclear	U	U	U	Y	Unclear	U	U	U	Y	Unclear	Y	NA	Y	Low	N	N	N	Low
Wang, 2019(15)	Y	Y	Y	Low	Y	U	U	Y	Unclear	Y	U	U	Y	Unclear	Y	NA	Y	Low	N	N	N	Low
Watnick, 2005(16)	U	Y	Y	Unclear	Y	U	NA	Y	Unclear	Y	Y	U	Y	Unclear	Y	NA	Y	Low	N	N	N	Low

Abbreviations: N = no; NA = not applicable; ROB = risk of bias; U = unclear; Y = yes

Questions (QUADAS-2(17)):

1. Consecutive or random sample of patients enrolled?
2. Was a case-control design avoided?
3. Did the study avoid inappropriate exclusions?
4. Was the index test interpreted without knowledge of the reference standard results?
5. Was staff trained in the use of the index test?

6. Was the fidelity of the index test monitored and/or reported?
7. Is the reference standard likely to correctly classify the target condition?
8. Was the reference standard interpreted without knowledge of the index test results?
9. Was staff trained in the assessment of the reference standard?
10. Was the fidelity of the reference test monitored and/or reported?
11. Was there an appropriate interval between the index test and reference standard?
12. Did all patients receive the same reference standard?
13. If a partial selection of patients received the reference standard, was it adjusted?
14. Were all patients included in the analysis?
15. Are there concerns that the study population differs from the review question?
16. Are there concerns that the index test, its conduct, or its interpretation differ from the review question?
17. Are there concerns that the reference standard, its conduct, or its interpretation differ from the review question?

Table S3. Characteristics of studies examining the diagnostic accuracy of depression screening tools in patients with kidney failure

Author, Year N enrolled Country/US region Years of enrollment	Study setting Sample characteristics and demographics	Study Inclusion/Exclusion Criteria	Index Test(s): Test Administration	Reference Standard: Test Administration
Alsuwaida, 2006(1) N = 26 Saudi Arabia	Single Site: hospital-based outpatient HD unit 42% Female Age: 48.1(15.1) Education: NR HD: 100% Dialysis duration: NR History of depression: NR	Inclusion: 18+ years of age, kidney failure and on maintenance HD for 3+ months Exclusion: Inability to participate in psychiatric interview, acute kidney failure, and delirium. Diagnosed with psychiatric disorders other than MDD	<u>SRQ (Arabic Version):</u> Self-report. Timing: within a week of clinical interview	<u>Clinical Interview:</u> All participants interviewed by the same psychiatrist (blinded to index test). Timing: up to a week before the index test.
Balogun, 2011(2) N = 96 US	Multisite: dialysis units Of 89 participants: 56% Female Age: 73.5(6.2) White: 56.2% Black: 43.8% Education: NR HD: NR Dialysis duration: NR History of depression: NR	Inclusion: 65+ with kidney failure treated with maintenance hemodialysis and able to give their informed consent Exclusion: acute or other chronic illness [i.e., metabolic (organic) brain syndrome, known malignancy, dementia], currently using antidepressants, and active alcohol or recreational drug abuse, did not speak English	<u>BDI-II, GDS-15:</u> NR	<u>Clinical Interview:</u> Geriatric Psychiatrist
Bautovich, 2018(3) N = 45 Sydney, Australia	Single site: outpatient dialysis unit 42% Female Age: primarily 65+ Education: NR HD: 100% Days on dialysis: M= 1241(1098) History of depression: NR	Included: 18+ years of age, receiving HD, adequate English language skills Excluded: evidence of psychosis, drug or alcohol dependence, or cognitive dysfunction	<u>BDI-II, CDI:</u> Self-report. Timing: before clinical interview.	<u>Clinical Interview:</u> Interviewed by a senior psychiatry registrar or psychiatrist, both of whom were experienced in diagnosing depression amongst those with chronic medical illness;

Author, Year N enrolled Country/US region Years of enrollment	Study setting Sample characteristics and demographics	Study Inclusion/Exclusion Criteria	Index Test(s): Test Administration	Reference Standard: Test Administration
				Timing: completed immediately after index tests
Chilcot, 2008(4) N = 40 UK	Multisite: outpatient renal service 40% Female Age: 53.2(14.2) White: 87.5% Black Caribbean: 10% Asian: 2.5% Education: NRHD: 100% (high-flux or on-line) 3x/week Months on dialysis M=51.2 History of depression: NR	Included: Adult kidney failure receiving HD for >3 months. Excluded: Psychiatric illnesses other than MDD, <23 MMSE	BDI-II, CDI: Self-report. Completed on and off dialysis. On-dialysis commenced 30 minutes after the start of a stable session. Off-dialysis conducted at the same as the MINI, M=10.7(4.2) days before/after.	<u>MINI:</u> Administration by a research psychologist who was trained by a consultant psychiatrist. Timing: 10.7(4.2) days before/after the on-dialysis BDI-II, and on the same day as the off-dialysis BDI-II.
¹ Collister, 2019(5) N = 50 Canada	Multisite: outpatient HD units 48% Female Age: 64(12.4) Education: NR HD: 100% 3+x/week: 96% Hours of HD M= 3.6(0.4) Dialysis duration: NR History of depression: NR Antidepressants: 16%	Included: 18+ years of age, receiving in-center hemodialysis ≥2x weekly for at least the last 90 days Excluded: unable to complete the study instruments due to a cognitive impairment or an English language barrier	<u>Single question from the ESAS:</u> Self-report scale (0-10) re: feeling blue or sad. Timing: taken during dialysis during the same session as the reference test.	<u>HADS:</u> Self-report. Timing: taken during dialysis during the same session as the reference test.
¹ Genco, 2007(6) N = 45 Turkey	Single site: hospital-based outpatient HD unit 42.2% Female Age: 41.64(11.7) ≤ Middle school: 37.9%	Included: medically stable with no hospital admission for any reason within the last 3 months, and maintained on dialysis for at least 12 months	<u>Ham-D:</u> Administered at baseline and the following month by a clinical psychologist that was blind to the	<u>SCID-I (Turkish Translation):</u> Administered at baseline and the following month by a clinical psychologist

Author, Year N enrolled Country/US region Years of enrollment	Study setting Sample characteristics and demographics	Study Inclusion/Exclusion Criteria	Index Test(s): Test Administration	Reference Standard: Test Administration
	HD: 100% Months on HD M=72.24(48.48) History of depression: NR	Excluded: presence of cognitive impairment indicated by MMSE score lower than 24, presence of a history of a psychiatric diagnosis or treatment in the last 6 months, and presence of some practical difficulties like probability of moving to another city, blindness or low educational level, which may decrease the patients' ability to comprehend and/or follow the study protocol. Patients who did not complete all baseline assessments were also excluded from the study.	reference standard. Timing re: reference standard: NR	that was blind to the reference standard. Timing re: index test: NR
¹ Giordano, 2007(7) N = 31 Italy	Single site: hospital-based HD unit 35.5% Female Age: 70.3(1) Race: NR Education: NR HD: 100% Dialysis duration: NR History of depression: NR	Inclusion: 3+ HD/wk, 65+ years old, maintaining functional independence or loss of it in only 1 of the 6 basic ADL, no evidence of significant cognitive impairment per MMSE >24, no evidence of severe diseases that might highly influence mood state (e.g., cancer, symptomatic cerebrovascular disease with residual deficit, schizophrenia and other psychoses), and disease severity as evaluated by the CIRS for overall illness severity for which >3 is moderate Exclusion: Taking antidepressants	<u>GDS-15:</u> Self-report. Administered by a trained interviewer. Timing: same session as reference standard.	<u>BDI-II:</u> Self-report. Administered by a trained interviewer. Timing: same session as index test.

Author, Year N enrolled Country/US region Years of enrollment	Study setting Sample characteristics and demographics	Study Inclusion/Exclusion Criteria	Index Test(s): Test Administration	Reference Standard: Test Administration
² Grant, 2008(8) N = 57 UK	Single site: outpatient HD unit 29.8% Female Age: 62.5(15.8) Non-White 7% Education: NR HD: 100% Dialysis duration: NR History of depression: NR	Included: 18 and 90 years of age, kidney failure for 3+ months, receiving HD 3x/week. Excluded: Current psychiatric care, on medication for a psychiatric illness or had seen a psychiatrist for follow-up within the last 2 years, severe co- morbid illness requiring hospitalization.	BDI-II: Self-report. Distributed by a healthcare assistant during a HD session.	<u>Clinical Interview (based on ICD-10 diagnosis):</u> Interviewed by a trained psychologist. Included a full psychiatric history and MMSE. Timing: within 1 week of index test
¹ Hedayati, 2006(18) N = 98 US Durham, NC March 2003- April 2004	Multi-site: outpatient dialysis units (VA, 2 non-VA) 44.9% Female Age: 57.2(13.8) Veterans: 26.5% AA/Black: 80.6% White: 14.3% Other: 5.1% ≤High school: ≈ 44.5% HD: 100% Years on dialysis: M=4.1(3.8) History of depression: NR	Included: English-speaking with health- care power of attorney and could sign consent. Excluded: NR	BDI-II, CDI, CESD, <u>Feinstein Scale</u> ; RA administered BDI- II/CESD/Feinstein Scale at enrollment.	<u>SCID-I</u> : Administered by a nephrologist. Timing: within 1 week of index tests
¹ Loosman, 2010(10) N = 62 Amsterdam Feb-June 2008	Single site: hospital-based HD and outpatient PD 46.8% Female Age: 63.5(14.9) 64.5% Dutch ethnicity Education: NR HD: 82%; PD 18% Months on dialysis: 46(65) Previous depression: 9.7% Antidepressants: 3.2%	Included: Patients with kidney failure treated with HD or PD Excluded: Patients who were unable to read or understand Dutch	BDI-II, HADS: Self-report. Completed while receiving treatment.	<u>MINI</u> : Performed by a medical resident who was extensively trained on the MINI by a psychiatrist. For 1:7 patients, MINI interviews were performed by both the medical resident and the psychiatrist (100% Inter-

Author, Year N enrolled Country/US region Years of enrollment	Study setting Sample characteristics and demographics	Study Inclusion/Exclusion Criteria	Index Test(s): Test Administration	Reference Standard: Test Administration
				rater reliability). Timing: NR
Neitzer, 2012(11) N = 134 US CA, TX 2009	Multisite: outpatient HD units 48% Female Age: 59.1(14.7) AA/Black: 22% Asian: 13% White: 60% Other: 4% Education: NR HD: 100% Months on dialysis: Median = 27.5 (2.9-252.2) History of depression: NR	Included: English or Spanish speaking, 18+ years old, due in April to June 2009 for their KDQOL-SF36 assessment. Excluded: Questionnaires with 50% or more of the questions left blank were considered incomplete and excluded.	<u>BDI-FS:</u> Self-report. Completed during HD treatment.	<u>BDI-II:</u> Completed during HD session. Order of completion was not specified.
¹ Preljevic, 2012(12) N = 109 Norway	Multisite: hospital-based HD and PD centers 30.3% Female Age 57.8(15.7) Race: NR 69.4% HS or less HD: 76.6%; PD: 23.3% Months on dialysis: M=8.5 (3.75–22) History of depression: NR	Included: 18+ years receiving either HD or PD for more than 2 months, were in a stable clinical condition and had adequate Norwegian language skills. Excluded: Cognitive dysfunction, psychosis or drug/alcohol abuse; hospitalization during the investigation period; however, they could be enrolled 4 weeks or more after discharge from hospital if they were in a stable clinical condition.	<u>BDI-II, CDI, HADS-D:</u> Self-report. Completed in a standardized sequence during the dialysis treatment for HD patients and during the routine outpatient control for PD patients.	<u>SCID-I:</u> Administered by an experienced psychiatrist who was blinded to each participant's medical history and scores on all self-report questionnaires. Assessments were conducted during dialysis sessions to standardize the assessment procedure and the time point relative to dialysis treatment. Interviews were

Author, Year N enrolled Country/US region Years of enrollment	Study setting Sample characteristics and demographics	Study Inclusion/Exclusion Criteria	Index Test(s): Test Administration	Reference Standard: Test Administration
				audiotaped and 25 randomly selected tapes were scored independently by another psychiatrist to establish inter-rater reliability. The interrater reliability for depressive disorder was excellent ($\kappa=1$). Timing: NR
¹ Troidle, 2003(13) N = 97 US June 2000 – January 2002	Multisite: CPD and HD units CP: 46% Female; HD: 40% Female Age: CPD 55.4(11.3); HD 56(8.6) White: CPD 75%; HD 87% CPD: 83%; HD 17% Education: NR Dialysis duration: NR History of depression: NR	NR	<u>2 items from the KDQOL SF-36:</u> Self-report. Likert 1-6. Scored by a social worker. Timing: consecutive	<u>BDI-II:</u> Self-report. Recorded by a social worker. Timing: consecutive
¹ Van den Beukel,(14) 2012 N = 133 Netherlands	Multisite: outpatient hospital-based dialysis units 39% Female Age: 62(16) Native Dutch: 66% Education: NR HD: 72% Dialysis duration: NR Previous Depression: 9% Antidepressant: 6% Months on dialysis: M=54(65)	Inclusion: 18+ years of age, kidney failure for at least 30 days, able to read the Dutch language and had no significant visual, physical, or cognitive impairment that would prevent completion of the questionnaires Exclusion: NR	<u>MHI5 of the SF-36:</u> Self-report. Completed during dialysis. Timing: NR	<u>BDI-II/CDI (Dutch Translation):</u> Self-report. Completed during dialysis. Timing: NR

Author, Year N enrolled Country/US region Years of enrollment	Study setting Sample characteristics and demographics	Study Inclusion/Exclusion Criteria	Index Test(s): Test Administration	Reference Standard: Test Administration
	History of depression: NR			
Watnick, 2005(16) N = 62 US Portland, OR July 2003- May 2004	Multisite: public and private outpatient HD and PD units (including VA) Female: 32% Age: 63(15) AA/Black: 15% Hispanic: 5% Asian: 5% White: 76% Education: NR HD: 95%, PD: 5% Dialysis duration: NR History of depression: NR	Inclusion: 18+ years old and had started dialysis therapy more than 90 days before enrollment. Exclusion: Did not speak English, MMSE \leq 17, medical record documentation of a psychiatric diagnosis other than depression, were deemed unable to participate by the dialysis staff, or were scheduled for kidney transplant within the next month.	<u>BDI-II, PHQ-9:</u> Self-report.	<u>SCID-I:</u> Interviewed by a mental health professional (completed psychology internship), blinded to BDI- II/PHQ-9 results. Timing: within 2 weeks of index tests.
¹ Wang, 2019(15) N = 319 China	Multisite: hospital-based HD units 31.4% Female depressed; 43.78% Female non- depressed Age: 49.4 (6.04) depressed; 50.92(6.46) non-depressed Race: NR HS or less: 51.44% depressed; 57.78% non-depressed HD:100% Dialysis duration: NR History of depression: NR	Inclusion: 18+ years of age; history of maintenance HD >3 months; ability to understand written Chinese, complete the interview and the questionnaire, and provide informed consent Excluded: documented cognitive impairment, had another primary diagnosis (e.g. chronic heart failure, cancer, hyperthyroidism), or had been previously diagnosed with depression and other psychiatric disorders	<u>BDI-II, DI-MHD:</u> Self-report. Timing: 2 weeks after clinical interview	<u>SCID-I:</u> Administered by a psychologist and a nephrologist. Timing: 2 weeks before index tests.

¹ Grouped milder forms of depression with major depressive disorder. ² Included cutoff values for both major depressive disorder as well as for milder forms of depression and subclinical symptoms.

Abbreviations: BDI-II = Beck Depression Inventory – II; BDI-FS = Beck Depression Inventory - Fast Screen; CA = California; CDI = Cognitive Depression Index; CES-D = Center for Epidemiologic Studies – Depression Scale; CVD = cardiovascular disease; DI-MHD = Depression Inventory – Maintenance Hemodialysis; ESAS = Edmonton Symptom Assessment System; GDS-15= Geriatric Depression Scale-15 ; HADS-D = Hospital Anxiety and Depression Scale - Depressive Subscale; Ham-D= Hamilton Depression Rating Scale; HD = hemodialysis; HS = high school; ICD-10 = 10th revision of the International Statistical Classification of Diseases and Related Health Problems; KDQOL SF-36 = Kidney Disease Quality of Life Short Form - 36; MDD = major depressive disorder; MHI5 = Mental Health Inventory 5; NR = not reported; MINI = Mini International Neuropsychiatric Interview; MMSE = Mini-Mental Status Examination; NR = Not reported; NC = North Carolina; OR = Oregon; PD = peritoneal dialysis; PHQ-9= Patient Health Questionnaire 9; SCID-I= Structured Clinical Interview for DSM-IV; SF-36 = Kidney Disease Quality of Life Short Form - 36; SRQ = Self-Reporting Questionnaire; TX = Texas; UK = United Kingdom; US = United States; VA = Veterans Affairs

Table S4. Findings of studies examining the diagnostic accuracy of depression screening tools in patients with kidney failure compared to a gold standard diagnostic interview

Author, Year N enrolled	Cut-off	Sens (%)	Spec (%)	PPV (%)	NPV (%)	AUC	Summary of Findings
Beck Depression Inventory-II (BDI-II)							
Balogun, 2011(2) N = 96	≥10	68	77	57	85	0.73	Compared to diagnostic interview, the BDI-II cutoff with the best diagnostic accuracy was ≥10.
Bautovich, 2018(3) N = 45	≥18	100	90	60	100	0.99	Compared to diagnostic interview, the BDI-II is an acceptable screening tool, with a cutoff of ≥18.
Chilcot, 2008(4) N = 40	≥16	88.9	87.1	88.8	87	0.961	Consistent with previous research, (off dialysis) BDI-II with a cutoff of ≥16 has good diagnostic accuracy.
² Grant, 2008(8) N = 57	≥10	100	50	21.9	100	0.93	Using the general population cut-off score (≥10), the BDI-II significantly over-diagnosed depression in this HD population. A cutoff of ≥15 is more reliable.
	≥15	100	78	NR	NR	0.93	
	≥20	71.4	92	NR	NR	0.93	
¹ Hedayati, 2006(9) N = 98	≥14	62	81	53	85	0.77	When used for screening, the threshold for depression should be higher for patients with versus without kidney failure (i.e., ≥14).
¹ Loosman, 2010(10) N = 62	≥13	75	90.2	75	90.2	0.90	At a cutoff of ≥13, the BDI-II is an effective screening tool for depression in depression in patients with kidney failure.
¹ Preljevic, 2012(12) N = 109	≥12	91	63	39	96	0.92	The BDI-II demonstrated acceptable performance as a screening tool for depression. At a threshold of ≥16 (general population) the BDI-II performed better than the HADS and the CDI; however, a cutoff of ≥17 is more reliable for this population.
	≥13	91	68	43	97	0.92	
	≥14	86	71	44	95	0.92	
	≥15	82	75	46	94	0.92	
	≥16	82	87	62	95	0.92	
	≥17	82	89	67	95	0.92	
	≥18	77	92	71	94	0.92	
¹ Wang, 2019(15) N = 319	≥15	87	49	34	93	0.84	A cutoff of ≥19 indicated depression in this population.
	≥16	87	58	39	94	0.84	
	≥17	87	65	43	94	0.84	
	≥18	87	71	47	95	0.84	
	≥19	83	86	63	94	0.84	
	≥20	74	94	77	92	0.84	
Watnick, 2005(16) N = 62	≥16	91	86	59	98	0.937	The BDI-II ≥16 is a valid measure for depressive disorders in the dialysis population.
Cognitive Depression Index (CDI)							
Bautovich, 2018(3)	≥11	100	92	67	10	0.98	Compared to diagnostic interview, the CDI ≥11 is an acceptable screening tool.

Author, Year N enrolled	Cut-off	Sens (%)	Spec (%)	PPV (%)	NPV (%)	AUC	Summary of Findings
N = 45							
Chilcot, 2008(4) N = 40	≥10	77.8	80.6	77.7	80.6	0.94	The CDI ≥10 has reduced sensitivity and specificity as compared to the BDI-II.
¹ Hedayati, 2006(9) N = 98	≥8	50	83	52	82	0.76	When used for screening, the threshold for depression should be higher for patients with versus without kidney failure. The BDI-II or the CESD have better sensitivity and better agreement (kappa) than the CDI (cutoff ≥8).
¹ Preljevic, 2012(12) N = 109	≥9	82	79	50	94	0.89	The CDI (cutoff ≥11) demonstrated acceptable performance as a screening tool for depression. The BDI-II performed better than the CDI.
	≥10	82	86	60	95	0.89	
	≥11	82	93	75	95	0.89	
	≥12	77	95	81	94	0.89	
	≥13	50	98	85	88	0.89	
	≥14	41	98	82	86	0.89	
Center for Epidemiologic Studies – Depression Scale (CES-D)							
¹ Hedayati, 2006(9) N = 98	≥18	69	83	60	88	0.86	When used for screening, the CESD threshold for depression should be higher (≥18) for patients with versus without kidney failure.
Depression Inventory – Maintenance Hemodialysis (DI-MHD) – Chinese Language							
¹ Wang, 2019(15) N = 319	≥23	97	55	84	89	0.94	At a threshold of ≥25, the DI-MHD performed better than the BDI-II.
	≥24	97	72	90	91	0.94	
	≥25	97	86	95	93	0.94	
	≥26	93	90	96	84	0.94	
	≥27	85	90	95	70	0.94	
Geriatric Depression Scale-15 (GDS-15)							
Balogun, 2011(2) N = 96	≥5	63	82	60	83	0.81	The GDS-15 ≥5 is a valid tool compared to the gold standard.
Hamilton Depression Rating Scale (Ham-D)							
¹ Gencoz, 2007(6) N = 45	≥10	100	80	59	100	85	The HDRS ≥10 is a reliable and valid instrument that can be used among patients with kidney failure undergoing HD
Hospital Anxiety and Depression Scale - Depressive Subscale (HADS-D)							
¹ Loosman, 2010(10) N = 62	≥6	90.5	75.6	85.7	75.6	0.89	The HADS-D ≥6 is an effective screening tool for depression in depression in patients with kidney failure.
¹ Preljevic, 2012(12) N = 109	≥4	100	48	33	100	0.91	At a HADS-D threshold of ≥8 the BDI-II performed better.
	≥5	95	60	38	98	0.91	
	≥6	95	73	48	98	0.91	
	≥7	86	84	58	96	0.91	

Author, Year N enrolled	Cut-off	Sens (%)	Spec (%)	PPV (%)	NPV (%)	AUC	Summary of Findings
	≥8	73	87	59	93	0.91	
	≥9	59	92	65	90	0.91	
	≥10	59	94	72	90	0.91	
	≥11	50	96	79	88	0.91	
Patient Health Questionnaire 9 (PHQ-9)							
Watnick, 2005(16) N = 62	≥10	92	92	71	98	0.94	The PHQ-9 ≥10 is a valid measure for depressive disorders in the dialysis population.
Self-Reporting Questionnaire (SRQ)							
Alsuwaida, 2006(1) N = 26	≥8	100	50	26	NR	0.96	The SRQ has high sensitivity the PPV is poor due to the somatic symptoms in non-depressed patients with kidney failure. A cutoff of ≥13 results in an acceptable specificity level without compromising sensitivity.
	≥9	100	68	36	NR	0.96	
	≥11	100	72	40	NR	0.96	
	≥13	100	82	50	NR	0.96	
	≥14	75	91	60	NR	0.96	
	≥16	75	95.5	75	NR	0.96	
	≥18	75	100	100	NR	0.96	

¹ Screened for depressive symptoms or milder forms of depression in addition to Major Depressive Disorder.

² Included cutoff values for both Major Depressive Disorder as well as for milder forms of depression and subclinical symptoms.

Abbreviations: AUC = Area under (receiver operating characteristic [ROC]) curve; BDI-II = Beck Depression Inventory – II; CDI = Cognitive Depression Index; CES-D = Center for Epidemiologic Studies – Depression Scale; GDS-15 = Geriatric Depression Scale-15; HADS-D = Hospital Anxiety and Depression Scale - Depressive Subscale; Ham-D = Hamilton Depression Rating Scale; NPV = Negative predictive value; NR = Not reported; PHQ-9 = Patient Health Questionnaire 9; PPV = Positive predictive value; Sens = sensitivity; Spec = specificity; SRQ = Self-Reporting Questionnaire

Table S5. Studies Comparing a Depression Tool to Another Validated Depression Tool

Author, Year N enrolled	Cutoff	Sens (%)	Spec (%)	PPV (%)	NPV (%)	AUC	Summary of Findings
Beck Depression Inventory – Fast Screen (BDI-FS)							
Neitzer, 2012(11) N = 134	≥4	97.2	91.8	81.4	98.9	0.98	Reference standard: BDI-II ≥16
Edmonton Symptom Assessment System (ESAS) – single question							
¹ Collister, 2019(5) N = 50	≥2	81	74	NR	NR	0.81	Reference standard: HADS ≥6.
Geriatric Depression Scale-15 (GDS-15)							
¹ Giordano, 2007(7) N = 31	≥6	89	92	NR	NR	0.95	Reference standard: BDI-II ≥14.
Kidney Disease Quality of Life Short Form - 36 (KDQOL SF-36) “Have you felt downhearted and blue?”							
¹ Troidle, 2003(13) N = 97	≤3	82	69	NR	NR	NR	Reference standard: BDI-II ≥11.
Kidney Disease Quality of Life Short Form - 36 (KDQOL SF-36) “Have you felt so down in the dumps so that nothing could cheer you?”							
¹ Troidle, 2003(13) N = 97	≤3	65	67	NR	NR	NR	Reference standard: BDI-II ≥11.
Mental Health Inventory 5 (MHI5)							
¹ Van den Beukel, 2012(14) N = 133	≥66	67	78	NR	NR	0.82	Reference standard: BDI-II ≥16 (≥66+) and CDI ≥10 (≥74+)
	≥70	77	72	44	91	0.82	
	≥74	83 81 CDI	65 65 CDI	NR	NR	0.82 0.81 CDI	
	≥78	90	54	NR	NR	0.82	
	≥82	93	45	NR	NR	0.82	

¹Screened for depressive symptoms or milder forms of depression in addition to Major Depressive Disorder.

Abbreviations: AUC = Area under (receiver operating characteristic[ROC]) curve; BDI-II = Beck Depression Inventory – II; BDI -FS = Beck Depression Inventory - Fast Screen; ESAS = Edmonton Symptom Assessment System; GDS-15 = Geriatric Depression Scale-15; HADS-D = Hospital Anxiety and Depression Scale - Depressive Subscale; KDQOL-36 = Kidney Disease Quality of Life Short Form - 36; MHI5 = Mental Health Inventory 5; NPV = Negative predictive value; NR = Not reported; PHQ-9 = Patient Health Questionnaire 9; PPV = Positive predictive value; Sens = sensitivity; Spec = specificity; SRQ = Self-Reporting Questionnaire

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