

Supplemental Material S3. Mental health screening tools.

Name of screening tool	Alternative names	Number of items	Purpose of survey as defined by original authors	Time frame of questions	Score range	Recommended cutoffs	Used by health professional with no psychology training	Used in cohorts with hearing loss	URL
Patient Health Questionnaire -9 (PHQ-9)	NA	9	Developed as a self-administered diagnostic instrument for depression (both depressive disorder diagnosis and depressive symptom severity). It was originally designed for use in a primary care setting.	Last two weeks	0-27	Scores reflect severity of depressive symptoms. None/Minimal = 0-4; Mild = 5-9; Moderate = 10-19; Severe = 20-27 (Kroenke, Spitzer, & Williams, 2001).	Self-administered, physician scored/screened (Kroenke, Spitzer, & Williams, 2001; Arroll et al., 2010; Tavabie & Tavabie, 2009).	Hearing loss in adults (Li et al., 2014; Scinicariello et al., 2019) and in older adults (Mener et al., 2013).	https://www.uspreventiveserVICEStaskforce.org/Home/GetFileByID/218
Patient Health Questionnaire -4 (PHQ-4)	NA	4	Developed as an ultra-brief screening tool for depression and anxiety.	Last two weeks	0-12	Higher scores indicate higher levels of psychological distress. Normal = 0-2, Mild = 3-5, Moderate = 6-8, Severe = 9-12. Total score ≥ 3 on first two questions suggests anxiety. Total score ≥ 3 on last two items suggests depression (Kroenke et al., 2009).	Self-administered in primary care waiting room (Kroenke et al., 2009), professional interviewers (Löwe et al., 2010), computer assisted self-administration in primary care setting (Kerper et al., 2014).	Adults with hearing loss (Heffernan et al., 2019), hyperacusis (Greenberg & Carlos, 2018), and tinnitus (Greenberg & Carlos, 2019).	https://www.oregonpainguidance.org/app/content/uploads/2016/05/PHQ-4.pdf
Kessler Psychological Distress Scale (K10)	NA	10	Developed as a brief screening tool to identify levels of nonspecific psychological distress. Recognized in original citation as also being useful as a broad screener for mental health	Last four weeks	10-50	Higher scores indicate higher levels of psychological distress. Low = 10-15, Moderate = 16-21, High = 22-29, Very	Self-administered in primary care waiting room (Vasiliadis et al., 2015), GP via letter to client (Smelt et al., 2012), GP during appointment (Collings et al., 2011).	Adults with hearing loss (Veale et al., 2012; Temple, Kelaheer, & Williams, 2019).	https://www.aci.health.nsw.gov.au/_data/asset/s/pdf_file/0015/212901/Kessler_10_a

			conditions in primary care screening batteries.			High= 30-50 (Andrews & Slade, 2001).			nd_scoring.pdf
Geriatric Depression Scale (GDS-15)	Geriatric Depression Scale-Short Form	15	Developed as a screener for depression in older adults.	In the last week	0-15	Higher scores indicate higher levels of depressive symptoms. Scores of 5 or more suggest presence of depression and require further psychological assessment (Wancata et al., 2006; Marc et al., 2009).	Self-administered in primary-care waiting room (D'Ath et al., 1994), nurse administered (Arthur et al., 1999), geriatricians administered (Rinaldi et al., 2003).	Older adults with hearing loss (Acar et al., 2011; Lambert et al., 2017).	https://integrationacademy.ahrq.gov/sites/default/files/Update_Geriatric_Depression_Scale-15_0.pdf
Generalized Anxiety Disorder (GAD-7)	NA	7	Developed as a brief scale to identify probable cases of generalized anxiety disorder and to assess symptom severity.	Last two weeks	0-21	Higher scores indicate higher levels of anxiety. None= 0-4, Mild = 5-9, Moderate = 10-14, Severe = ≥ 15. When used as a screening tool, a score of 10 or greater requires further evaluation (Spitzer et al., 2006).	Self-administered in primary care waiting room (Spitzer et al., 2006; Kroenke et al., 2007), self-administered online (Beukes et al., 2018), registered nurses administered (Markle-Reid et al., 2014).	Cochlear implant and hearing aid users – older adult sample (Manrique-Huarte et al., 2016; Ketter et al., 2018; Olze et al., 2011; Häußler et al., 2020).	https://med.dartmouth-hitchcock.org/documents/GAD-7-anxiety-screen.pdf
Hospital Anxiety and Depression Scale (HADS)	HAD Scale; HADS Tool	14	Designed as a self-report mood scale for anxiety and depression. The scale was	In the last week	0-21 for anxious symptoms and 0-21 for	Anxiety and depression total scores are considered	Self-administration (Hill et al., 2008; Espie et al., 2007), audiologists in tinnitus	Adults with acquired hearing loss (Garnefski & Kraaij, 2012;	https://www.svri.org/sites/default/files/attachm

			designed for use in non-psychiatric settings.		depressive symptoms	separately against cutoffs. Generally, a cutoff score of ≥ 8 is considered most appropriate. Though cutoffs for Mild = 8-10, Moderate = 11-15, and Severe = ≥ 16 were proposed by original authors (Snaith & Zigmond, 1994).	clinics (Searchfield & Baguley, 2011).	Hallam et al., 2007), adults with hearing and vision loss (Turunen-Taheri et al., 2016).	ents/2016-01-13/HADS.pdf
DeJong Gierveld Scale	DG Loneliness Scale; DJGLS; Loneliness Scale; DeJong Gierveld Loneliness Scale-11)	11	Developed a scale that is based on the multidimensional conceptualization of loneliness.	Tone of questions is set in present	0-11	Higher scores indicate greater loneliness. Not lonely = 0-2, Moderately lonely = 3-8, Strongly lonely = 9-11 (Van Tillburg & De Jong Gierveld, 1999).	Nurse administered (Taekema et al., 2010; van Lankveld et al., 2011; Trompetter et al., 2010).	Older adults with hearing loss (Pronk et al., 2011; Lambert et al., 2017), older adults with hearing aids (Weinstein, Sirow & Moser, 2016).	https://mvda.info/sites/default/files/field/resources/De%20Jong%20Gierveld%20Loneliness%20Scale.pdf
Cohen's Social Network Index (SNI)	Social Network Index	12	Developed to assess the number of roles and the number of relationships across those roles.	Varies depending on the question but most frequently asked in terms of "2 weeks"	0-12	Fewer connections indicates greater social isolation. Limited network = 1-3, Medium Social Network = 4-5, Diverse Social Network = ≥ 6 (Cohen et al., 1997).	Self-administered as part of questionnaire pack (Rutledge et al., 2004; Hamrick, Cohen & Rodriguez, 2002), interview format by researcher (Logsdon et al., 2008).	Adults with bilateral hearing impairment (Wu & Bentler, 2012), older adults with hearing loss (Deal et al., 2017), older adults presenting for hearing aids or cochlear implants (Sung et al., 2016), and adults with hearing and vision loss (Mudie et al., 2018).	https://www.cmu.edu/com-mon-cold-project/measures-by-study/psychological-and-social-constructs/social-relationships-loneliness-measures/social_network_index_rev.pdf

Three-Item Loneliness Scale (Loneliness Scale)	Three-Item Loneliness Scale; Three-Item Revised University of California, Los Angeles Loneliness Scale; UCLA 3 Item Loneliness Scale	3	Adapted from the Revised UCLA Loneliness Scale which was considered to be too long and complex for the author's needs (telephone survey; Hughes et al., 2004). This version has since been validated in various formats.	Questions framed as "How often" rather than attached to a specific time frame	3-9	Higher scores indicate higher levels of loneliness. Some cut offs have been recommended; Not lonely = 3-5, Lonely = ≥6 (Steptoe et al., 2013).	Primary care administration staff provided questionnaire for clients to complete (Mullen et al., 2019), research assistants (Grudzen et al., 2019), self-report computer assisted (Whisman et al., 2010).	Adults with hearing loss and hearing aids (Wells et al., 2019a), hearing loss and older adults (Wells et al., 2019b; Harithasan et al., 2020; Wells et al., 2020).	https://static1.squarespace.com/static/5b855bd5cef372d1e9a8ef0e/t/5ccc5008b208fcd615da0870/1556893704715/Measuring+Loneliness+Scale+SEOAT.pdf
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