Is a line the same as a box?
Speech assessments by VAS is not superior to Likert scales in laryngeal cancer patients

Mia Johansson, Anna Rydén, Caterina Finizia
Department of Otolaryngology, Institute of Clinical Sciences at Sahlgrenska Academy, University of Gothenburg

Background
Although survival is the primary outcome of interest, patient-reported outcomes (PROs) are important when comparing treatment and assessing rehabilitation in cancer patients. The most commonly utilized type of items or scales for measuring PROs are the categorical Likert response alternatives and the continuous Visual Analogue Scale (VAS).

Purpose
Primary purpose was to assess if VAS or Likert was relatively more suitable when assessing self ratings of voice and speech in patients treated for laryngeal cancer. An additional purpose was to investigate whether the scales differed in measuring change after treatment.

Method
Using both VAS and Likert, 71 patients with laryngeal cancer stage 0-IV answered three questions about speech intelligibility, voice quality, and speech acceptability. Questions were answered at baseline, when the patients had received their cancer diagnoses 1–2 weeks prior and at a follow-up assessment 12 months later. For test-retest analyses, additional data were used from 21 subjects. Non-parametric statistical methods suitable for comparing scales with different numbers of response alternatives were applied.

Results
Test-retest reliability was strongest for the Likert scale. From baseline to follow-up, both scales detected significant improvements. However, for some Likert scores the associated VAS values varied across a wide range, this was true for assessments at baseline, at follow-up, and for score changes. At baseline the inter-scale concordance showed a greater number of disordered pairs than at follow-up and on both occasions the older group produced a greater number of disordered pairs.

Conclusions
Advocators of VAS claim it to have better precision and higher sensitivity than discrete categorical scales like the Likert scale. However, in line with other studies we found no support for the superiority of VAS over Likert. Furthermore, VAS may produce instability in response patterns. Therefore, when using self-ratings of voice and speech to identify a need of further rehabilitation Likert scales seem better suited.

Example Likert
Is your speech easily understood?
3 2 1 0

Example VAS
Is your speech easily understood?

Take home message
When using self-ratings of voice and speech to identify patients in need of further rehabilitation Likert scales seem better suited than the VAS.