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Letter to the Editor Re: "Limited Health Literacy in Portugal Assessed with the Newest Vital Sign" by Dagmara Paiva and Colleagues. Acta Med Port. 2017;30(12):861-869.

Carta ao Editor Ref: "Prevalência de Literacia em Saúde Inadequada em Portugal Medida com o Newest Vital Sign" de Dagmara Paiva e Colaboradores. Acta Med Port. 2017;30(12):861-869.

We read the recent article by Paiva et al[1] describing the cross-cultural adaptation and validation of the Portuguese version of the Newest Vital Sign (NVS) with great interest. The validation of the instrument was performed with a convenience sample of participants including 21.3% (53/249) physicians, 38.2% (95/249) researchers, and 40.6% (101/249) primary care patients to ascertain the discriminatory power of the instrument. The validated instrument was subsequently administered to a representative sample of the Portuguese general population to estimate the prevalence of limited health literacy. The authors would agree that the educational level of the population used to validate the instrument is very different to that of the Portuguese general population. Assessing the discriminatory power of the NVS using a highly health literate population *versus* the general population will only ensure divergent validity between these two extremely different populations.

While health literacy point prevalence assessments are important, instruments like the NVS are commonly used by healthcare researchers and practitioners as predictors of poor health outcomes and low medication self-management capacity,[2] which is especially important for elderly patients who are high health care users. However, an issue identified in a previous Portuguese study not cited in the original article by Paiva et al[1] is that the NVS demonstrated poor performance in the elderly population using medicines [mean age (SD) 73.3 (7.83) years (range 58 – 89)], resulting in a notable floor-effect.[3] In that study, older adults presented mean NVS scores of 0.81 (SD = 0.10) with 95% respondents scoring in the three lowest possible scores.[3] This floor effect is also visible in Paiva et al results where only 6.3% of adults aged 65 - 79 presented adequate health literacy, while 93.8% had possibly limited or highly likely limited health literacy. Similar findings with regard to the floor effect were reported in the Dutch cross-cultural adaptation of the NVS, even using a younger population (mean age 59.7 years).[4]

As a result of their high use of healthcare services and medication, older adults are an especially frail population that requires specifically designed health literacy screening tools, as highlighted in a recent systematic review.[5] The floor-effect identified when assessing health literacy with the NVS in older patients hampers its predictive power as a proxy for poor health outcomes and poor medication self-management capacity. Thus, we do not recommend that researchers and clinicians in Portugal use the NVS when assessing health literacy of older adults in clinical practice.

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Reply to the Letter to the Editor: "Limited Health Literacy in Portugal Assessed with the Newest Vital Sign"

Resposta à Carta ao Editor: "Prevalência de Literacia em Saúde Inadequada em Portugal Medida com o Newest Vital Sign"

Keywords: Health Literacy; Portugal; Prevalence; Validation Studies
Palavras-chave: Estudos de Validação; Literacia em Saúde; Portugal; Prevalência

Dear Editor,

We thank the authors for their interest in our paper. Teresa Salgado and Fernando Fernandez-Llimos suggest that the Portuguese version of the Newest Vital Sign (NVS) should not be used to assess older adults in clinical practice because of a floor effect. We disagree. A floor effect is a problem when the performance on the test does not reflect the true performance in the domain being assessed.[1] This is not the case here. We are not classifying older people incorrectly by using the NVS. Another study using a different health literacy instrument, one that asks people questions about their perceived difficulty performing health-related tasks, has also documented a very high proportion of limited health literacy in the older Portuguese population.[2]

In addition, it is also not the case that the educational level of the population used to validate the instrument was very different from that of the Portuguese population. The subgroup of 101 people from the general population in our study included 30.7% of participants with less than five years of schooling (the oldest of whom was 86 years old). This figure is close to schooling estimates from the Portuguese population near the time the study was conducted.[3] Furthermore, when we compared this subgroup with the other more literate groups (physicians, health researchers, engineering researchers) we were not testing divergent validity (i.e. assessing whether constructs that are not supposed to be related are actually unrelated) but known-groups validity, which relies on administering the instrument to different groups that logically should have different levels of the construct to confirm whether the hypothesised difference was reflected in the scores of the groups.[4]

We do agree with the authors in that the NVS should not be used as a proxy for poor health outcomes or poor medication self-management capacity. Concerning outcomes, the NVS can and has been used successfully to study the association between health literacy and health outcomes in studies that included older persons, but as a determinant and not as a proxy.[5] Moreover, the study by Schillinger et al[6] cited by the authors to illustrate this point used the short version of the TOFHLA,[7] an instrument composed of two short cloze passages (an exercise where key words are deleted from a text and respondents are asked to fill in the blanks) and four very easy numeracy questions, which is quite unlike the NVS, as findings from studies using both the instruments can confirm.[8,9] Regarding self-management capacity, we also agree that it should not be used alone in samples with very low expected health literacy. If it is important to assess the numeracy component of health literacy (to assess skills related to timing, scheduling, and dosing of medications as well as numeric concepts needed to understand and act upon directions and recommendations, such as in the assessment of risk perception of an intervention)[10] in elderly samples, the NVS could be used in combination with another very brief instrument such as the Medical Term Recognition Test (METER), which has not displayed a floor effect.[11] Nevertheless we argue that when studying self-management capacity, one must necessarily take into account the distributed nature of health literacy, i.e. how people rely on formal and informal mediators (e.g. health professionals, family members, friends and media) for support performing health related tasks, such as managing medications,[12,13] as well as how the medication information is presented.[14]

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