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Health literacy and sleep apnoea

Determining which of our patients struggle with numeracy or literacy is difficult and clinicians overestimate the levels of patient literacy.¹ In a report in this journal, we demonstrate that 33% of new patients and 16% of serial users have difficulty completing the Epworth Sleepiness Scale (ESS).² To explore reasons for this we have assessed literacy in a further group of 122 patients attending either the Sleep Centre (Sleep group) or the Lung Function Laboratory (LF group). The level of functional literacy in medicine was assessed using the Rapid Estimate of Adult Literacy in Medicine (REALM) questionnaire.³ A REALM score ≤60 suggests that the patient would struggle with patient education materials and prescription labels. In addition to REALM, information about educational attainments and use of the English language was collected.

Eighty-six (93.3%) of 92 Sleep group patients and 30/30 (100%) LF group patients completed the REALM questionnaire. Five (5.6%) in the Sleep group declined when shown the test. One did not complete due to time restrictions. Mean age was 51.2±11.8 years in the Sleep group and

Table 1 REALM scores achieved by Sleep (n=86) and LF (n=30) group patients

REALM score ranges	Equivalent reading age		% Sleep group (n=86)	% LF group (n=30)
	US school grade	UK age equivalent		
0–18	Third grade or below	8 years or less	0.0	0.0
19–44*	Fourth/sixth grade	9–12 years	1.2	3.3
45–60*	Seventh/Eighth grade	12–14 years	15.1	6.7
61–66	High school	14–15+	83.7	90.0

*A score ≤60 suggests a literacy level that would struggle to cope with patient education materials and prescription labels. LF group, patients attending the Lung Function Laboratory; REALM, Rapid Estimate of Adult Literacy in Medicine; Sleep group, patients attending the Sleep Centre.

56.1±17 years in the LF group. Mean age leaving formal education was 18.7±2.9 years in the Sleep group and 17.7±2.9 years in the LF group. In the Sleep group 38.4% (33/86) had a university education (24% graduate, 15% postgraduate degrees) versus 30% (9/30; 27% graduate and 3% postgraduate degrees) in the LF group. REALM scores are shown in table 1 grouped into the traditional four ranges. Seventy-eight per cent of the Sleep group patients and 83% of the LF group patients spoke English as their mother tongue; all patients used English as their everyday spoken language.

Assessing literacy in patients is not easy and completing tools such as REALM, while quick to administer, can be awkward for the patient. We have previously shown how patients struggle to complete the ESS. Indeed, some patients volunteered that they could not read or write but it is likely that others have developed coping mechanisms to hide their difficulties. Problems completing forms may occur for many reasons. In this study of 122 patients, we found evidence of impaired health literacy in 16.3% of the Sleep group and 10% of the LF group patients. Von Wagner *et al* estimate limited health literacy in 11.4% of their UK cohort and other studies in the UK and US report levels between 13% and 15% in patients attending secondary care.⁴ That some Sleep group patients declined to be tested once shown the questionnaire might suggest that the 16.3% score is an underestimate. Why Sleep group patients should fare worse than LF group patients, if real, is unclear especially when educational attainments were higher and age was younger. All used English as their everyday language; however, fewer Sleep group patients had English as their mother tongue. Cognitive deficits associated with undiagnosed obstructive sleep apnoea syndrome (OSAS) and increased

sleepiness could conceivably be a contributory factor.⁵

This study suggests that clinicians need to provide clinical material and information in a format that is comprehensible to a diverse population. A pictorial format would fulfil this need. Patients with OSAS may have particular need for such information.²

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