

# The use of Non Motor Symptom Questionnaire (NMSQuest) score to address Parkinson's disease non motor burden in outpatient clinic

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**Introduction:** The Non Motor Symptom Questionnaire (NMSQuest) is a widely used self completed tool to assess NMS in patients with Parkinson's disease (PD). We had previously recommended a simple grading system using the total NMSQuest score to address the burden of NMS in PD: the NMSQuest Kings-ISCIII grading [1]:

**NMS levels as level 1: very mild 0-5, level 2: mild 6-12, level 3: moderate 13-20 and level 4: severe > 20.**

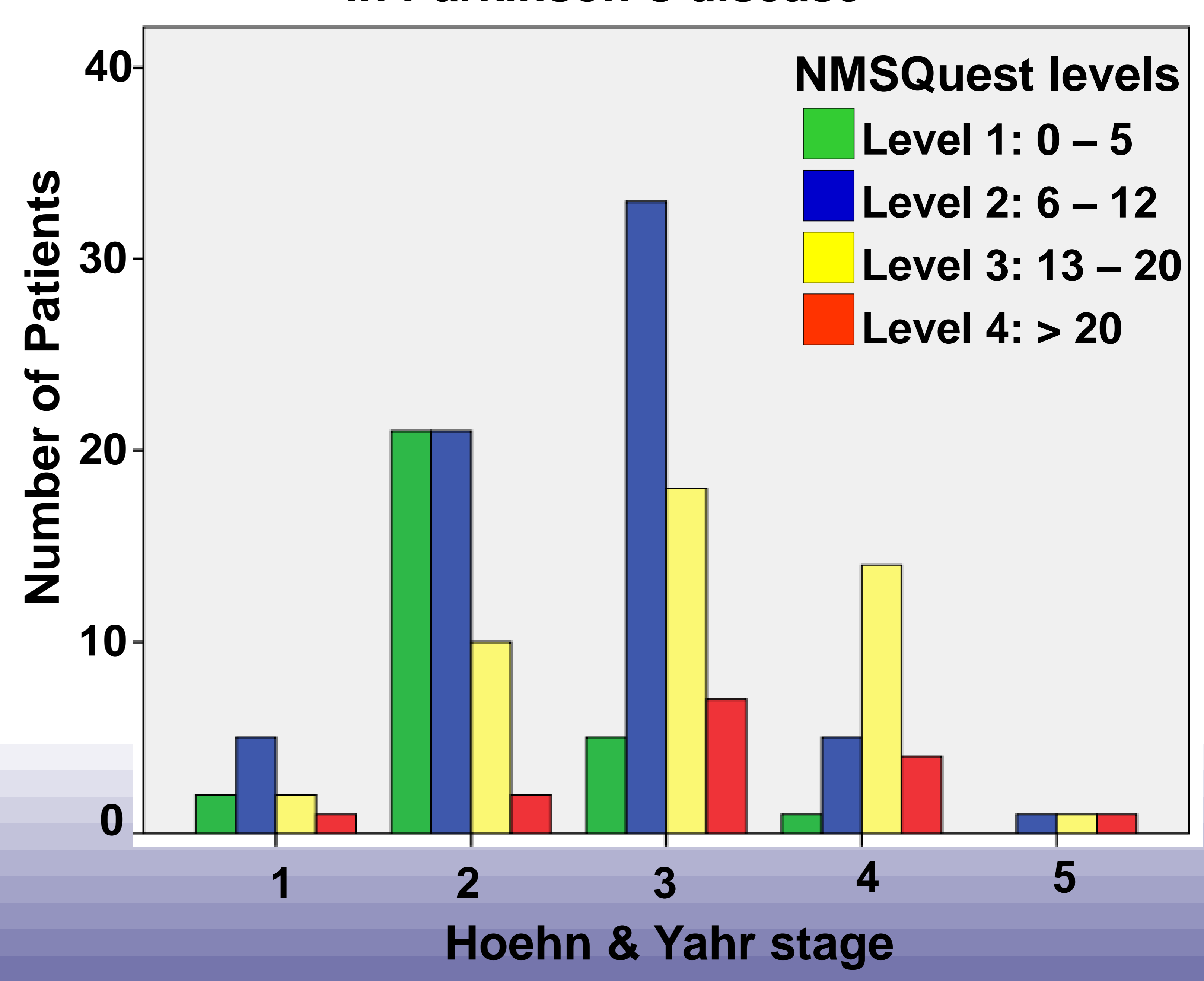
Demographics	No / Mean	% / Range
Patients (Males / Females)	154 (93 / 61)	60% / 40%
Ethnicity (White / Non White)	150 (119 / 31)	77 % / 20 %
Age (yrs)	67.23	29 - 92
Duration of Disease (yrs)	6.72	0.0 - 49
Levodopa equivalent dose (LED) per day (mg)	691	0.0 - 2602

**Results:** In a random consecutive clinic population, 42% had mild NMS burden while 39% had moderate to severe NMS load based on the Kings-ISCIII grading and independent of the motor stage. 20% in level 3 and 10% in level 4 NMSQuest were in H&Y stage 1 while 19% in level 3 and 4% in level 4 were in H&Y stage 2 showing discordance between NMSQuest levels and H&Y. There was a significant ( $p < 0.01$ ) but low positive correlation between NMSQuest level and H&Y and LED per day, respectively.

**Methods:** We prospectively analysed data from 154 PD patients which have consecutively completed NMSQuest and classified the NMSQuest total score in four severity levels as NMS burden [1]. Patients with deep brain stimulation were excluded. We correlated the NMSQuest levels with Hoehn and Yahr stages (H&Y) as motor symptom burden and Levodopa equivalent dose (LED) per day.

H&Y	No (%)	NMSQuest	No (%)
stage 1	10 pat. (6.5%)	level 1	29 pat. (18.9%)
stage 2	54 pat. (35.1%)	level 2	65 pat. (42.2%)
stage 3	63 pat. (40.9%)	level 3	45 pat. (29.2%)
stage 4	24 pat. (15.6%)	level 4	15 pat. (9.7%)
stage 5	3 pat. (1.9%)		

**Distribution of non motor burden and motor stage in Parkinson's disease**



**Conclusions:** This observation outlines the importance of assessing non motor symptoms in patients with Parkinson's disease. Assessment with NMSQuest is essential: (i) to identify the burden of NMS of PD at presentation and (ii) to address different need for treatment. These observations are also supported by Khoo et al. 2013 and Mollenhauer et al. 2013.

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**References:** [1] Chaudhuri KR, Martinez-Martin P, Sherman R et al., Neurology 2009; 72 (suppl 3) A322. Khoo TK, Yarnall AJ, Duncan GW et al., Neurology 2013; 80(3):276-81. Mollenhauer B, Trautmann E, DeNoPa Study Group et al., Neurology 2013; 81(14):1226-34.