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OBJECTIVE

To determine the age related distribution of pathological sleepiness in Veterans with Parkinson's disease (PD).

BACKGROUND

Excessive sleepiness is common in patients with Parkinson's disease. However, its distribution with respect to age and other correlates of the disease has not been well studied in the Veteran population.

METHODS

100 consecutive Veterans with PD followed at our center were evaluated using the Epworth's Sleepiness Scale (ESS). ESS score of >10 defined pathological sleepiness. Mean ESS scores were calculated for the following age groups a) ≤ 69 , b) 70-79, c) ≥ 80 years. Cognitive impairment, stage of the disease and mood were assessed using Unified Parkinson's Disease Rating Scale (UPDRS), Hoehn & Yahr Staging Scale (H&Y) and Zung Self Rating Depression Scale (ZDS), respectively.

RESULTS

Table 1: Demographic distribution of study subjects

Demographics	N (All)	Age ≤ 69	Age 70-79	Age 80+
Gender				
Men	97	34 (94.4%)	39 (97.5%)	24 (100%)
Women	3	2 (5.6%)	1 (2.5%)	0 (0%)
Total	100	36 (100%)	40 (100%)	24 (100%)
Ethnicity				
White	86	30 (83.3%)	34 (85.0%)	22 (91.7%)
Black	9	3 (8.3%)	4 (10.0%)	2 (8.3%)
Hispanic	5	3 (8.3%)	2 (5.0%)	0 (0.0%)
Age (std dev)	72.5 (9.7)	62.4 (6.5)	74.1 (2.9)	84.6 (3.8)

Figure 1: Epworth Sleep Scale (ESS) comparison of age groups

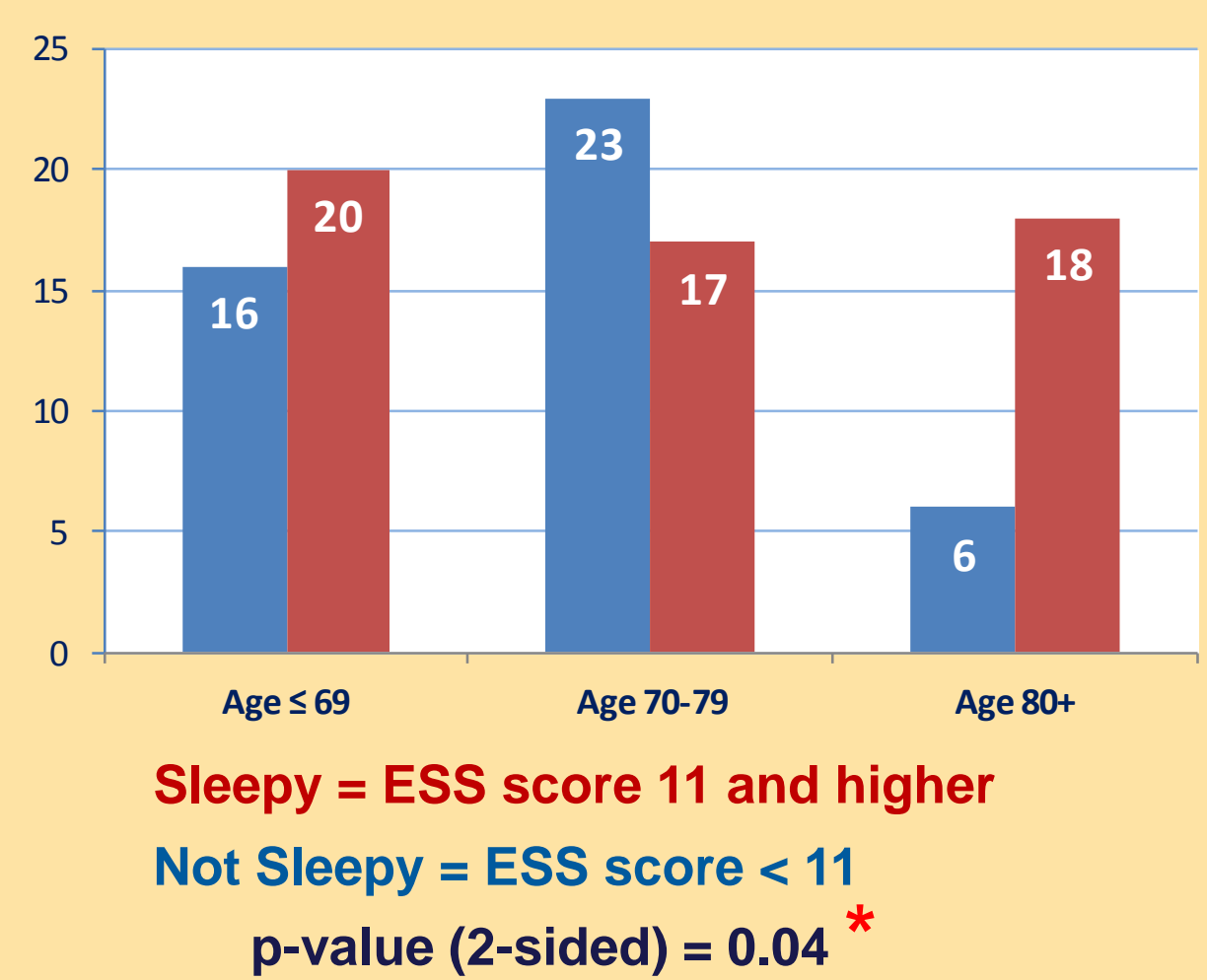


Table 2: Comparison of scores by age groups

Scores	Mean	Std Dev	Range	P-value†
Hoehn & Yahr				
All	2.7	0.77	1-5	0.04*
Age ≤ 69	2.5	0.69	1-4	
Age 70-79	2.7	0.65	1.5-4	
Age 80+	3.1	0.93	2-5	
UPDRS (cognition)				
All	1.06	0.74	0-3	0.002*
Age ≤ 69	0.89	0.67	0-3	
Age 70-79	0.95	0.71	0-3	
Age 80+	1.52	0.73	1-3	
ZDS				
All	39.85	9.11	29-57	0.125
Age ≤ 69	41.75	10.02	15-61	
Age 70-79	37.70	8.97	17-60	
Age 80+	40.61	7.22	29-57	

Figure 2: 2 x 2 Comparisons of age groups for sleepiness

Age Group	Sleepy	Not Sleepy	Total
1 (≤ 69)	20	16	36
2 (70-79)	17	23	40
3 (80+)	18	6	24

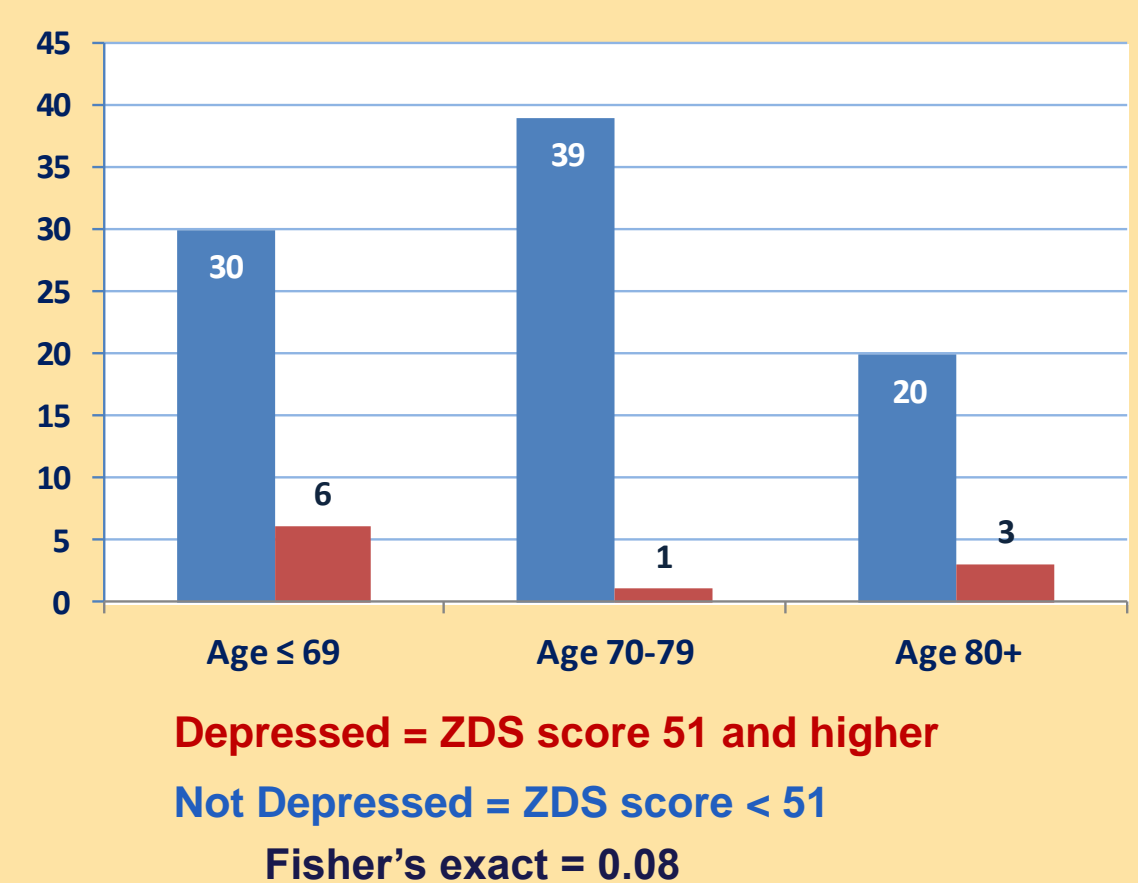
Group 1 vs. Group 2: p-value = 0.26
Group 1 vs. Group 3: p-value = 0.13
Group 2 vs. Group 3: p-value = 0.01*

† Kruskal-Wallis test

Differences in the ESS (≥ 11) H&Y and Cognition (UPDRS) scores between the three groups were statistically significant ($p < 0.05$).

There was no statistically significant difference in ZDS scores between the three age scores.

Figure 3: Zung Depression Scale (ZDS) comparison of age groups



CONCLUSION

Pathological sleepiness is significantly more common with increasing age and appears to be associated with worsening cognition and stage of the disease in Veterans with Parkinson's disease.