

Comparing health outcomes by Chronic Obstructive Pulmonary Disease (COPD) status and risk level: findings from the US National Health and Wellness Survey

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Background

The prevalence of COPD is significantly high globally with a large number of undiagnosed individuals. Many individuals are under-diagnosed due to a lack of understanding of the risk factors or they may not recognize the symptoms related to COPD.¹

Objective

This study assessed the health outcomes among US adults diagnosed with COPD compared to adults at risk of developing COPD and those not at risk.

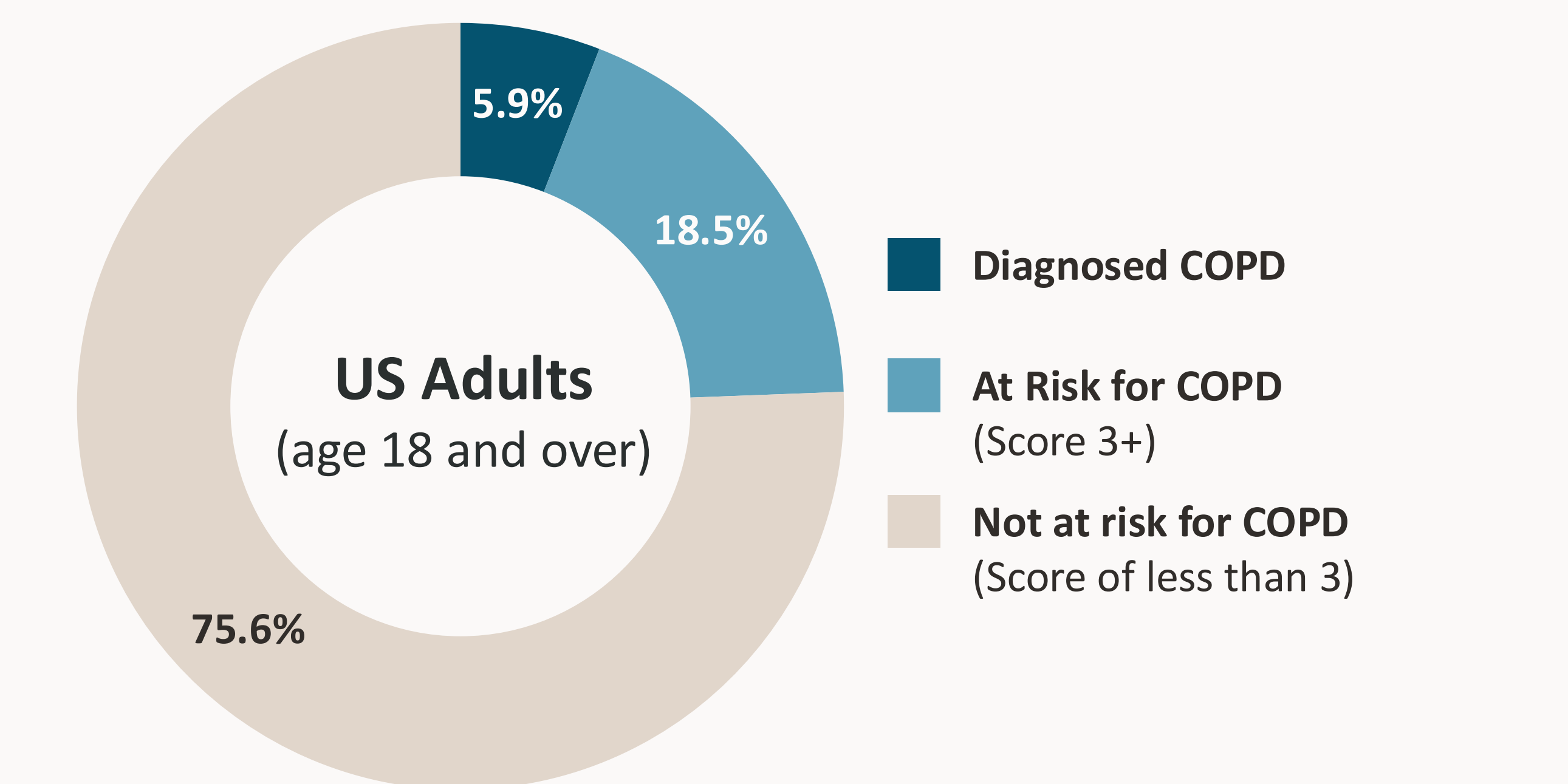
Methods

- Data were used from the US 2024 National Health and Wellness Survey, a cross-sectional, nationally representative, general population survey of adults age ≥18 years.
- Participants were adults (aged ≥18 years, total n=75,013), recruited using general population panels, using a quota sampling technique.
- Participants self-reported being diagnosed by a healthcare provider with COPD, emphysema, or chronic bronchitis. Could It Be COPD scale¹ was used to identify those unaware of their risk of developing COPD (score≥3).
- Within this analysis, diagnosed “COPD” includes any adults reporting being diagnosed with COPD, emphysema, or chronic bronchitis.
- Patient reported outcomes included the RAND-36² for quality of life, and the Work Productivity and Activity Impairment (WPAI) scale³.
- Results were weighted using the 2023 Current Population Survey (Annual Demographics File) of the U.S. Census Bureau.
- Descriptive and bivariate statistics were conducted across independent paired groups. Chi-square was conducted for categorical variables and t-test for continuous variables.

Results

- Among the total participants, 5.9% reported COPD diagnosis. Of those without COPD, as many as one in five (18.5%) were at risk (score of 3+) and 75.6% were not at risk (score of <3) of developing COPD. (Figure 1).

Figure 1. COPD prevalence and risk (based on the Could It Be COPD scale)



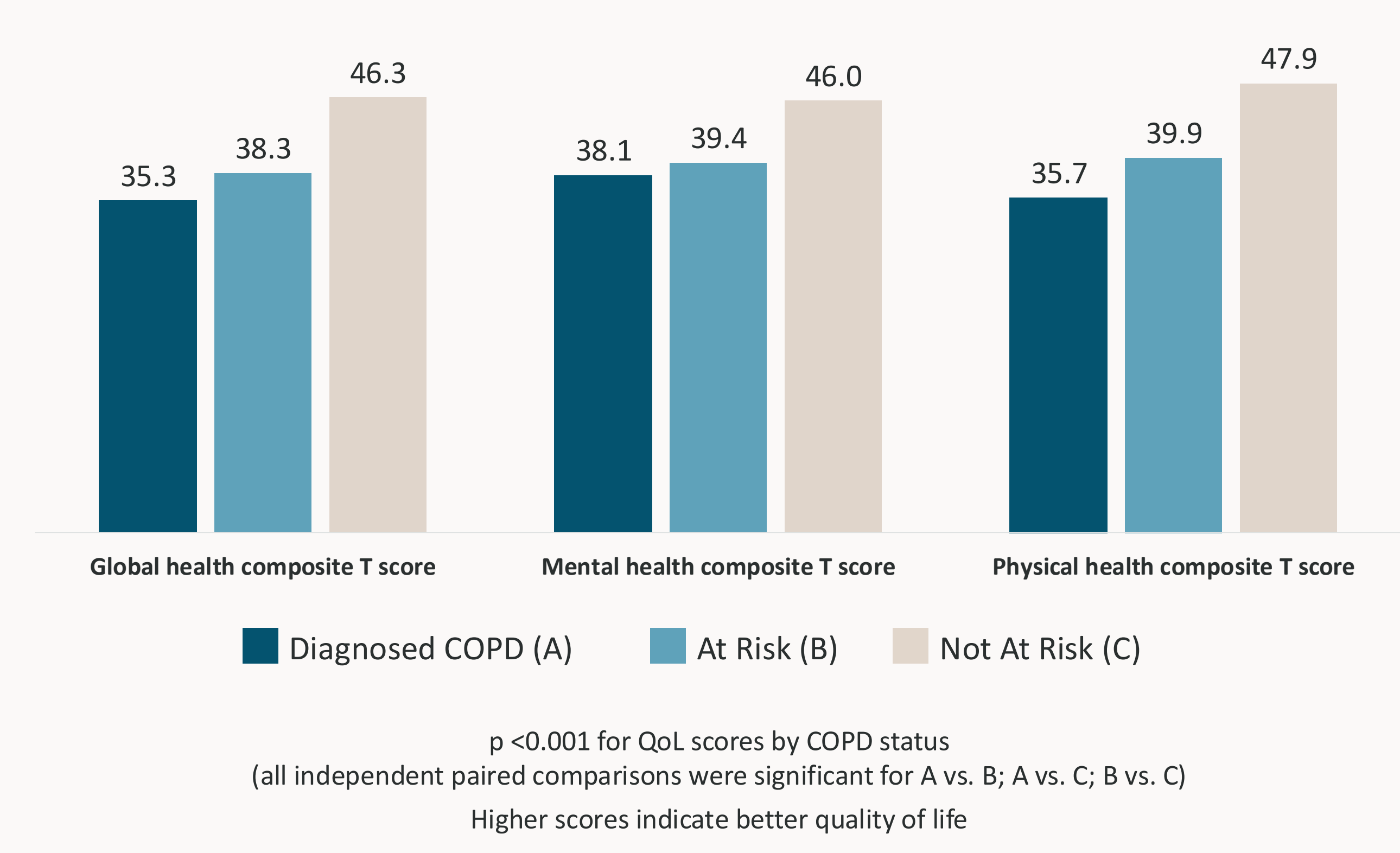
- Diagnosed COPD adults were older compared to those at risk (56.6 vs. 51.3 years). At risk patients were disproportionately male (55% vs. 46% for diagnosed). (Table 1).
- History of ever smoking was equal between those diagnosed and those at risk (72%), while 40% of at-risk adults currently smoke (vs. 34% of diagnosed). (Table 1).

Table 1. Demographic characteristics and smoking status

	Diagnosed COPD (A)	Without COPD: Risk Level		P value		
		At risk for COPD (score 3+) (B)	Not at risk for COPD (score of less than 3) (C)	A vs. B	A vs. C	B vs. C
Weighted	14.5 million	45.5 million	185.8 million			
Unweighted	n=3,856	n=12,577	n=54,947			
Male	45.8%	54.8%	47.0%	< 0.001	0.1863	< 0.001
Female	54.2%	45.2%	53.0%			
Mean age (years)	56.6	51.3	47.2	< 0.001	< 0.001	< 0.001
White	69.4%	65.2%	59.5%	< 0.001	< 0.001	< 0.001
College educated	23.6%	28.8%	39.0%	< 0.001	< 0.001	< 0.001
Mean BMI	29.9	28.5	27.1	< 0.001	< 0.001	< 0.001
Currently Smoke	34.2%	40.0%	12.7%	< 0.001	< 0.001	< 0.001
Ever Smoked	72.0%	72.3%	31.2%	0.7811	< 0.001	< 0.001
Never Smoked	28.0%	27.7%	68.8%			

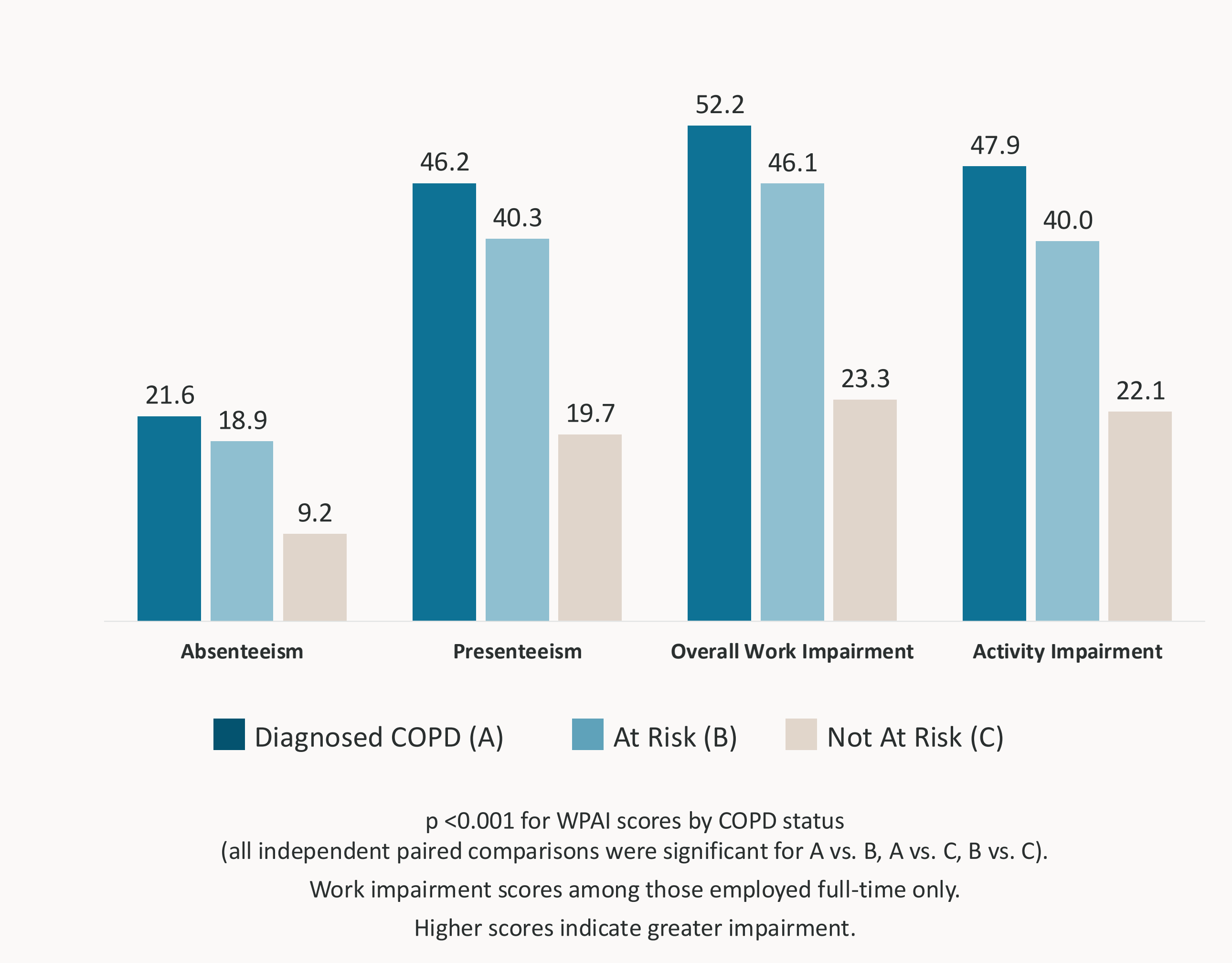
- Diagnosed patients had the lowest mean physical health composite T-scores (35.7) vs. at risk (39.9) vs. not at risk (47.9). Mental health composite T-scores showed a similar pattern: diagnosed had the lowest (38.1) vs. at risk (39.4) vs. not at risk (46.0). (Figure 2). Higher scores indicate better QoL.

Figure 2. RAND-36 Quality of life (QoL) scores by COPD status



- Diagnosed patients had the highest overall work impairment and activity impairment, followed by those at risk, which were higher than those not at risk. (Figure 3). Higher scores indicate greater impairment.

Figure 3. Work Productivity and Activity Impairment (WPAI) by COPD status (Mean %)



Conclusion



An estimated one in five adults in the US could be at risk for COPD.

Diagnosed COPD patients had the worst health outcomes with respect to quality of life and work and activity impairment. However, at risk adults also had significantly poorer QoL scores and greater work and activity impairment compared to adults not at risk.

Further evaluations by physicians can help qualify the risk and take necessary actions to address risk factors and proper treatment.

References :

- Calverley PM, Nordyke RJ, Halbert RJ, Isonaka S, Nonikov D. Development of a population-based screening questionnaire for COPD. COPD. 2005 Jun; 2(2):225-32
- Hays RD, Sherbourne CD, Mazel RM. The RAND 36-Item Health Survey 1.0. Health Econ. 1993;2(3):217-27
- Reilly MC, Zbrozek AS, Dukas EM. The validity and reproducibility of a work productivity and activity impairment instrument. Pharmacoeconomics. 1993;4(5):353-65

