

# Socioeconomic Burden of Dry Eye Disease in the United States: Real-World Evidence From the Adelphi DED Disease Specific Programme™

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## OBJECTIVE

To evaluate the socioeconomic burden of dry eye disease (DED) in the United States using data from the Adelphi DED Disease Specific Programme™

## CONCLUSIONS

DED imposes a substantial socioeconomic burden, with symptom-driven presenteeism as a key contributor

Prescription treatment showed a greater percentage of inflammatory symptom control and a lower percentage of disease manifestation vs over-the-counter therapy alone

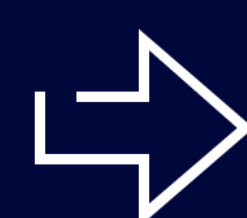
Out-of-pocket treatment costs and functional impairment from DED both increased with disease severity

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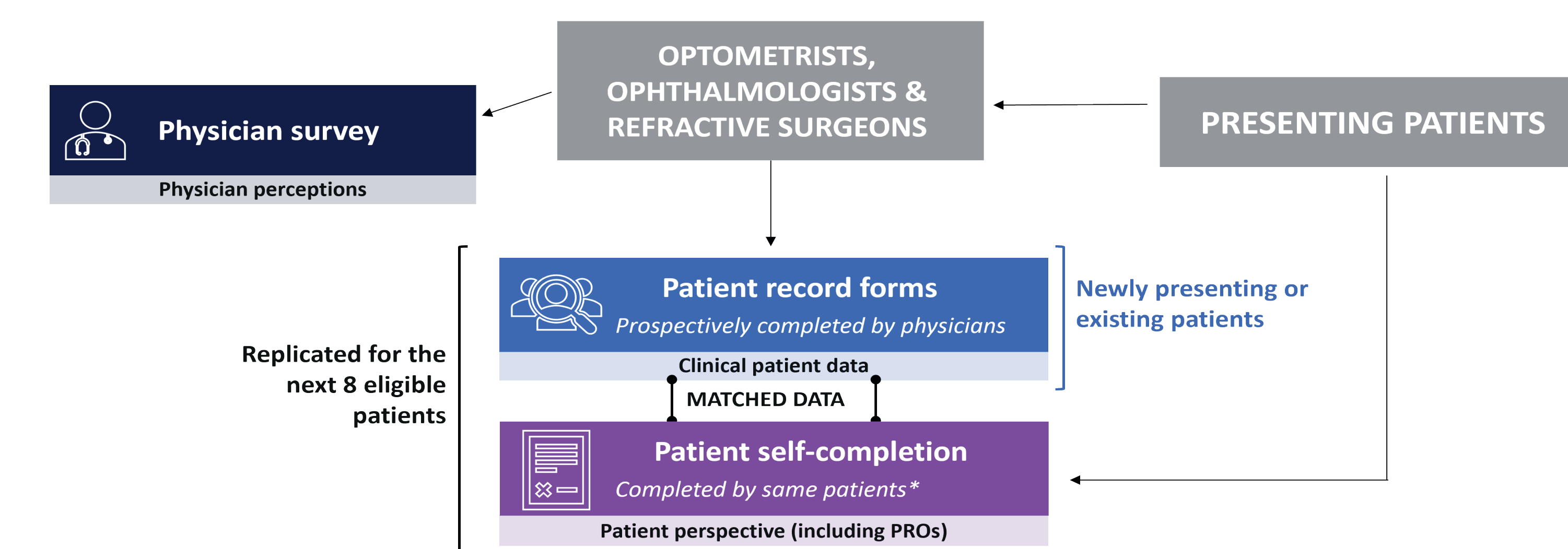
## INTRODUCTION

- Dry eye disease (DED) is one of the most common forms of ocular surface disease, characterized by irritation, burning, and stinging<sup>1</sup>
- DED can lead to a reduction in quality of life and is strongly correlated with a loss of productivity and impairment of daily function<sup>2,3</sup>
- Loss of productivity and daily function can lead to significant financial loss, in addition to financial burden for treatment costs, which can increase with comorbidities and lack of access to insurance<sup>4-7</sup>
- The purpose of this analysis was to utilize real-world evidence to evaluate the socioeconomic burden of DED in the US

## METHODS

- Data were sourced from the Adelphi DED Disease Specific Programme™, a US cross-sectional survey of eyecare practitioners (ECPs; optometrists, ophthalmologists, and refractive surgeons) and patients with DED from 2021 to 2022
- ECPs reported electronic medical record data for patients with DED (N=723) including demographics, symptoms, and treatment history
- 250 of the 723 patients completed a survey assessing: work productivity and activity impairment, symptom burden, driving impact, out-of-pocket spending for prescriptions, and over-the-counter DED treatments
- Differences in physician-reported severity categories were obtained using Student's t-test

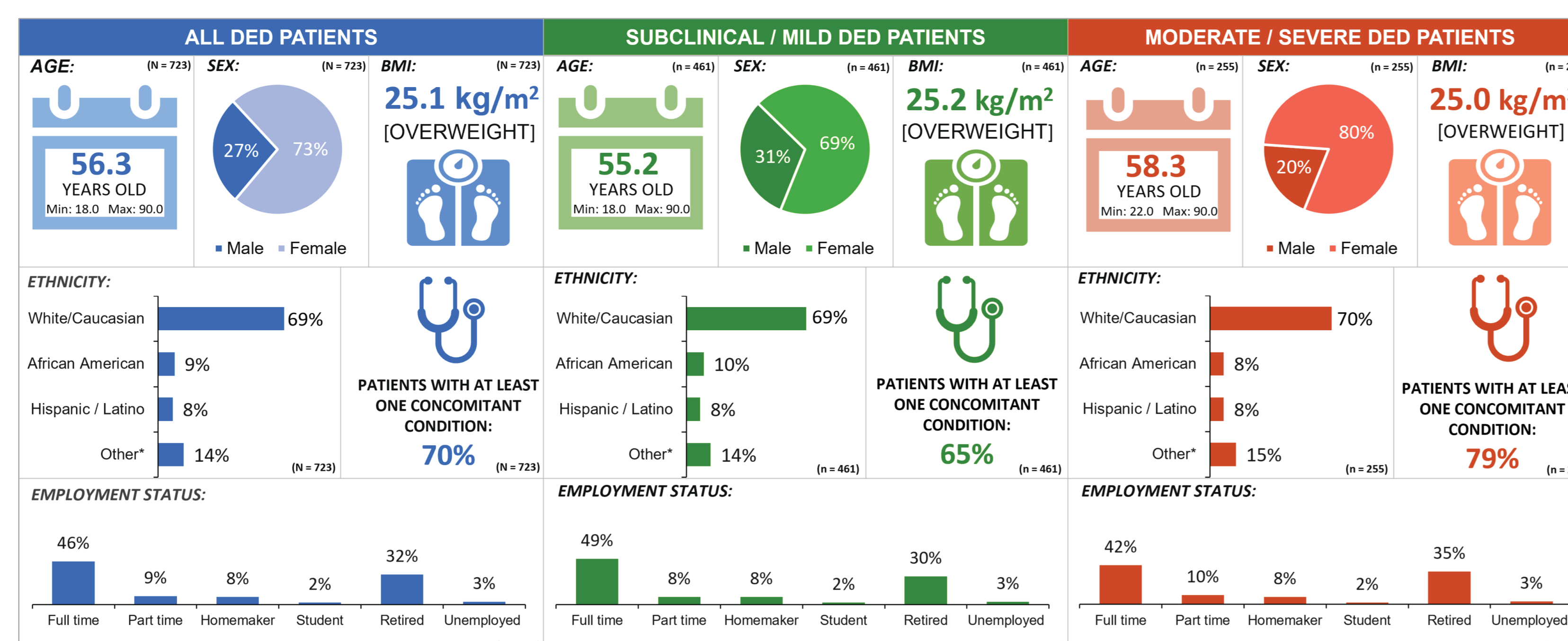
Figure 1. DED I DSP™: Summary of Methodology



\*Patient self-completion data was not available for every patient. Participation was voluntary and consent was always obtained. Abbreviations: DED, dry eye disease; DSP™, Disease Specific Programme™; PRO, patient-reported outcomes.

## RESULTS

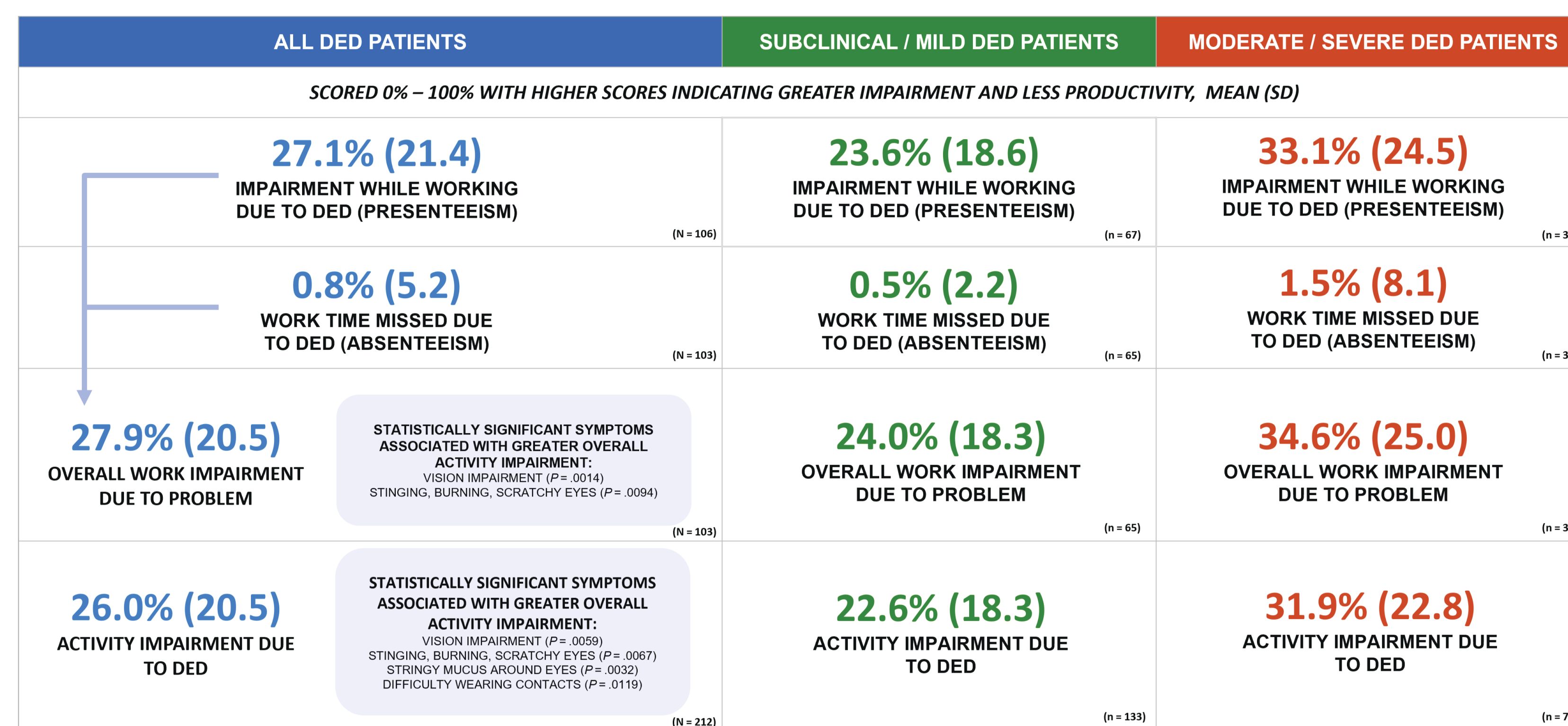
Figure 2. Patient Demographics and Characteristics



\*Other: Native American, Asian (Indian subcontinent), Southeast Asian, Asian (other), Middle Eastern, Mixed race, Other ethnicity. Abbreviations: BMI, body mass index; DED, dry eye disease; kg/m², kilograms per meter squared; Max, maximum; Min, minimum.

- Among 723 patients with DED (mean age 56.3 years; 73.0% female), half reported full-time employment (Figure 2)

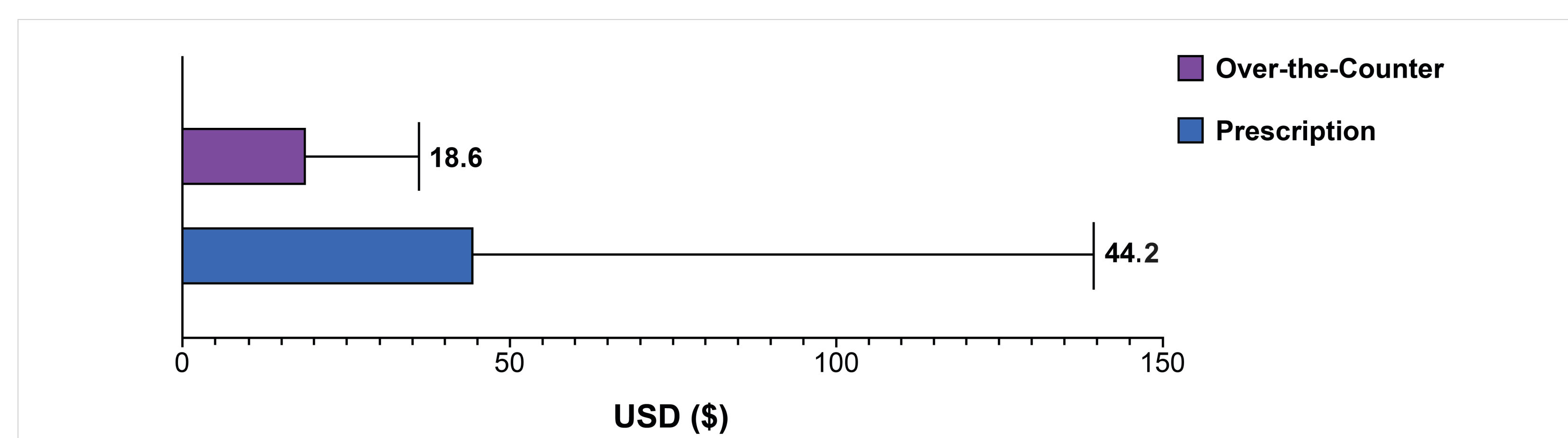
Figure 3. Work Productivity and Activity Impairment by DED Severity



Abbreviation: DED, dry eye disease.

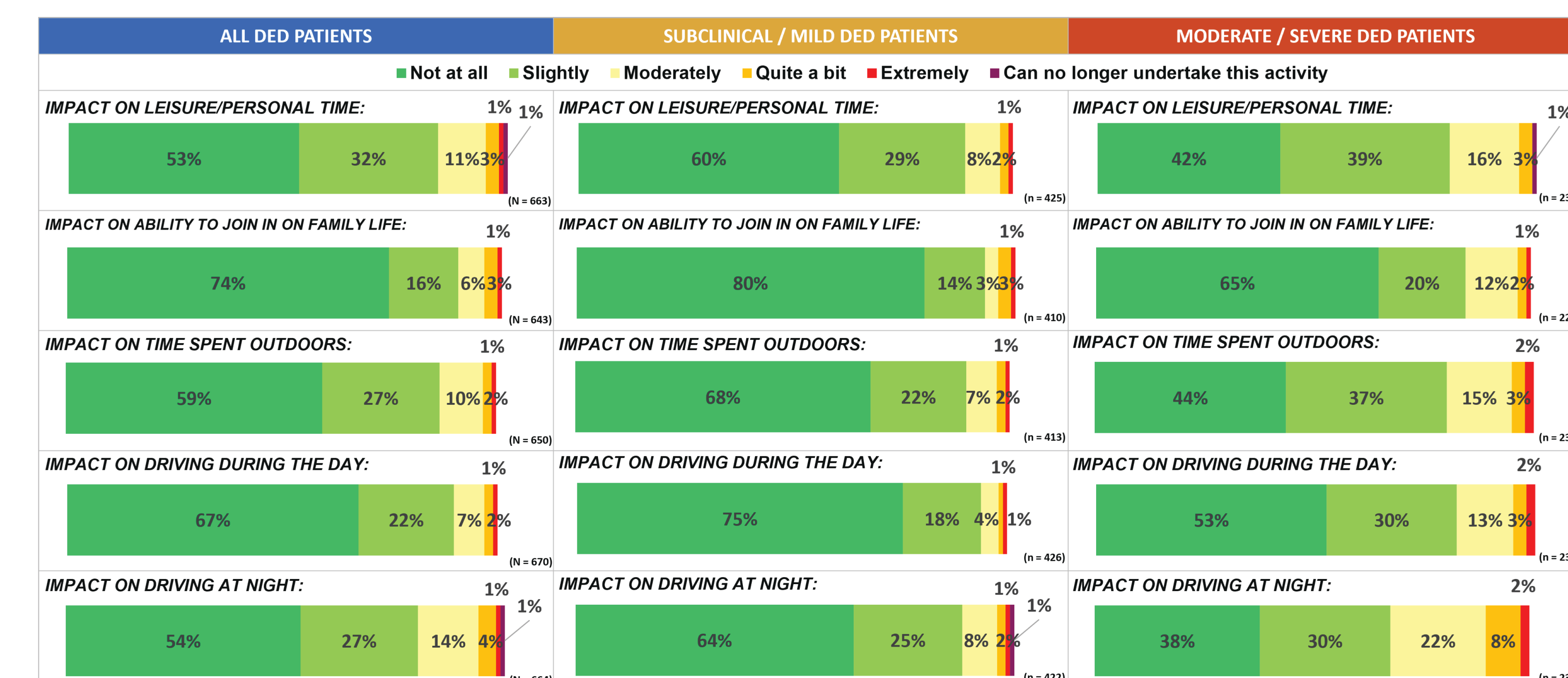
- Mean overall work impairment was 27.9%, increasing from 24.0% in subclinical or mild DED to 34.6% in moderate or severe DED. Presenteeism accounted for 27.1% of productivity loss (Figure 3)
- Absenteeism remained low (0.8%). Mean activity impairment was 26.0%, rising from 22.6% in subclinical or mild DED to 31.9% in moderate or severe DED (Figure 3)
- Local inflammatory symptoms and vision impairment showed greater overall work impairment ( $P = .0094$  and  $P = .0014$ , respectively) and activity impairment ( $P = .0067$  and  $P = .0059$ , respectively) (Figure 3)
- Mucus and contact lens discomfort were drivers of activity impairment ( $P = .0032$ ;  $P = .0119$ ) (Figure 3)

Figure 4. Out-of-Pocket Treatment Costs



Error bars represent standard deviation. Costs were assessed in the month prior to data collection. Abbreviation: USD, United States Dollar.

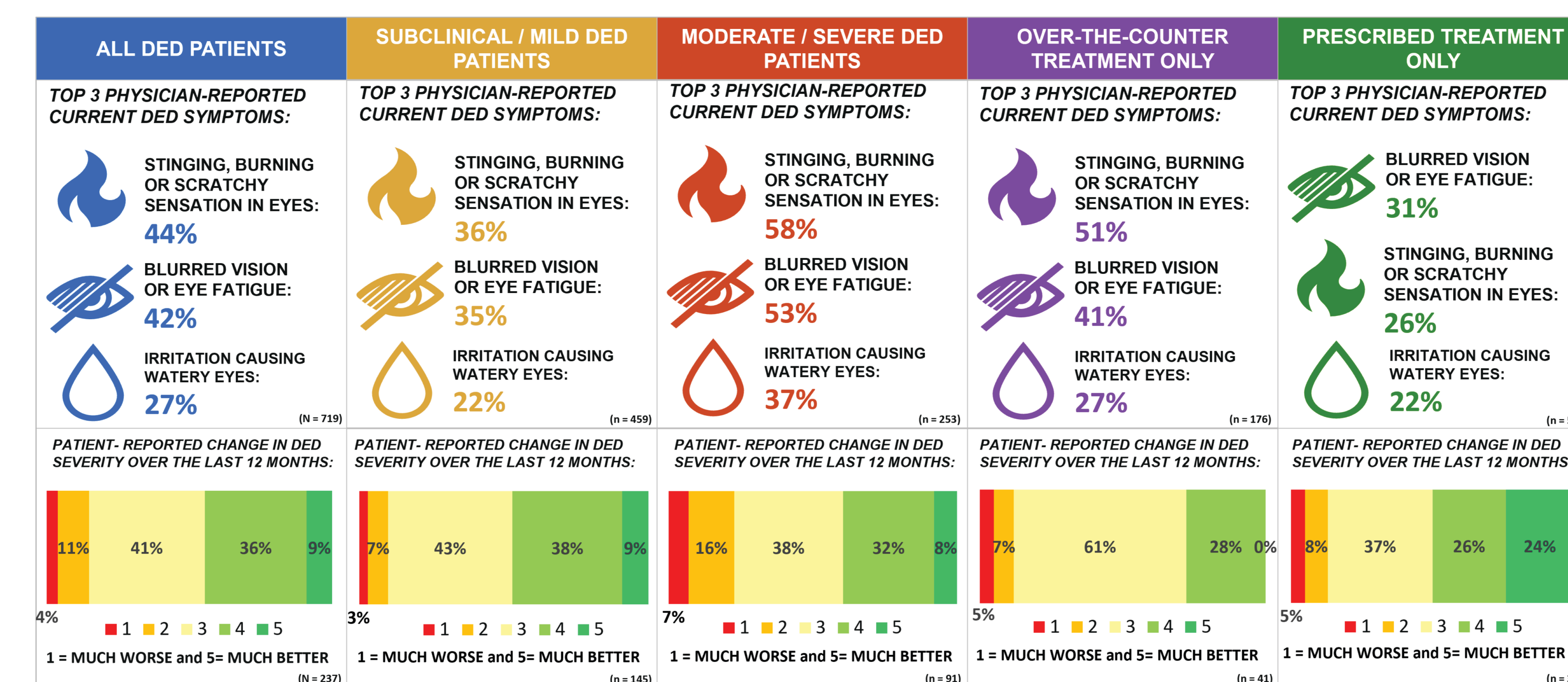
Figure 5. DED Impact on Quality of Life



Abbreviation: DED, dry eye disease.

- Patients with moderate or severe DED were 3.0 times more likely to have difficulty driving during the day than patients with subclinical or mild DED (18.0% vs 6.0%) (Figure 5)
- Patients with moderate or severe DED were 2.7 times more likely to have difficulty driving during the night than patients with subclinical or mild DED (32.0% vs 12.0%) (Figure 5)

Figure 6. DED Symptoms and Severity



Abbreviations: DED, dry eye disease; kg/m², kilograms per meter squared; Max, maximum; Min, minimum.

- Stinging, burning, or scratchy sensation was the most common symptom among patients with DED and was more frequent in the over-the-counter-only group than the prescription-only group (51.0% vs 26.0%) (Figure 6)
- Among prescription-only patients, 50.0% reported improvement over 12 months compared with 28.0% of over-the-counter-only patients (Figure 6)

Figure 4

- Monthly out-of-pocket costs in the month prior to data collection were \$44.2 for prescription treatments and \$18.6 for over-the-counter treatments
- Mean (SD) cost of prescription treatment for DED ranged from \$41.7 (99.3) for patients with subclinical or mild DED to \$48.2 (88.5) for patients with moderate or severe DED
- Mean (SD) cost of over-the-counter treatment ranged from \$17.0 (16.9) for patients with subclinical or mild DED to \$21.2 (18.4) for patients with moderate or severe DED

### Limitations

- This analysis lacked generalizability to populations outside of the US and construct validity due to the subjective nature of DED symptom presentation
- No formal comparative statistical analysis was performed between severity subgroups and therefore all comparisons are purely descriptive in nature
- Safety outcomes were not assessed