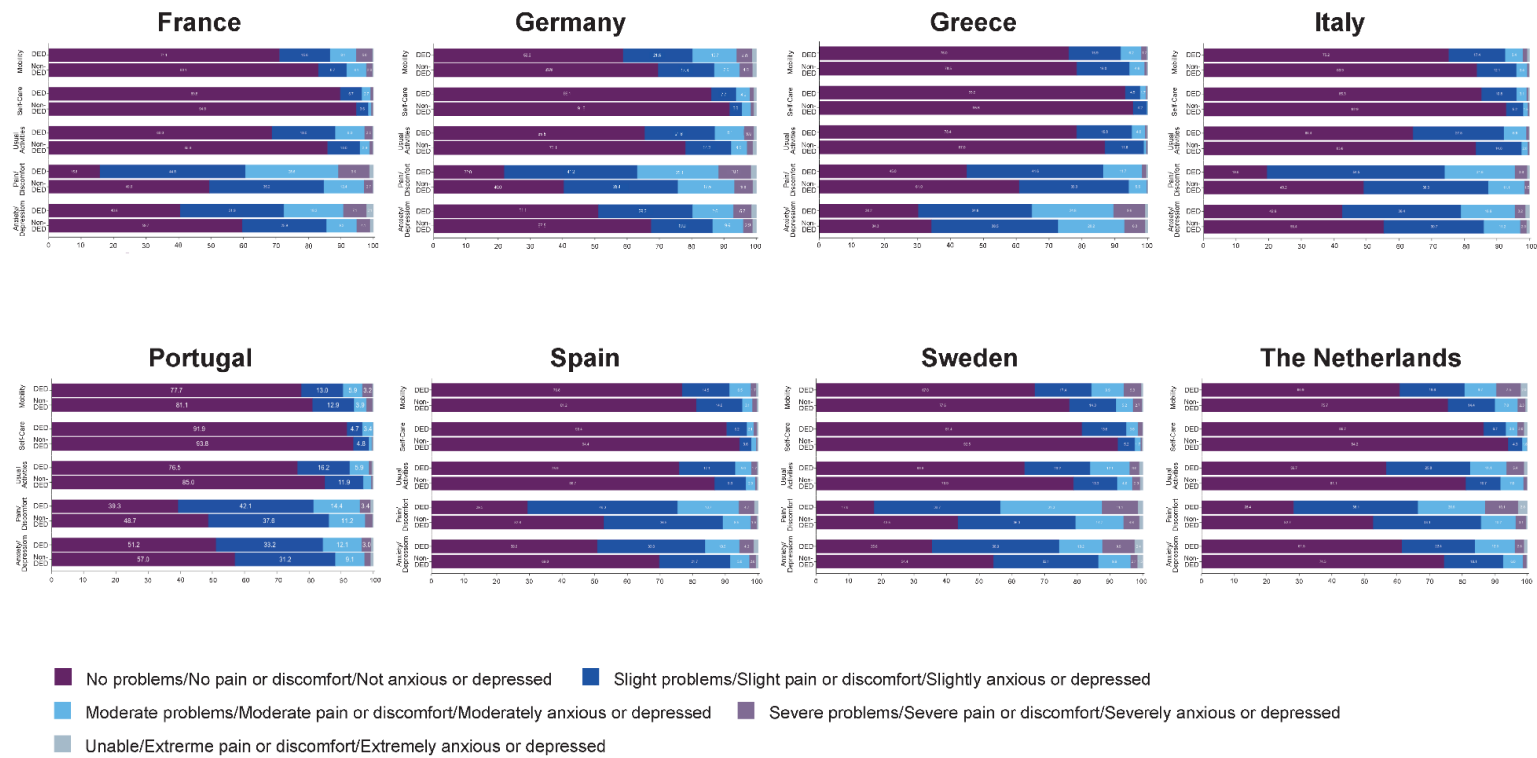


Supplementary figures and tables:

Supplementary Figure 1. Description of EQ-5D-5L item responses by DED status by countries.



DED, dry eye disease; EQ-5D-5L, EuroQoL-5 dimensions-5 levels questionnaire

Supplementary Figure 2. EQ-5D-5L Index scores as per EDS severity group.

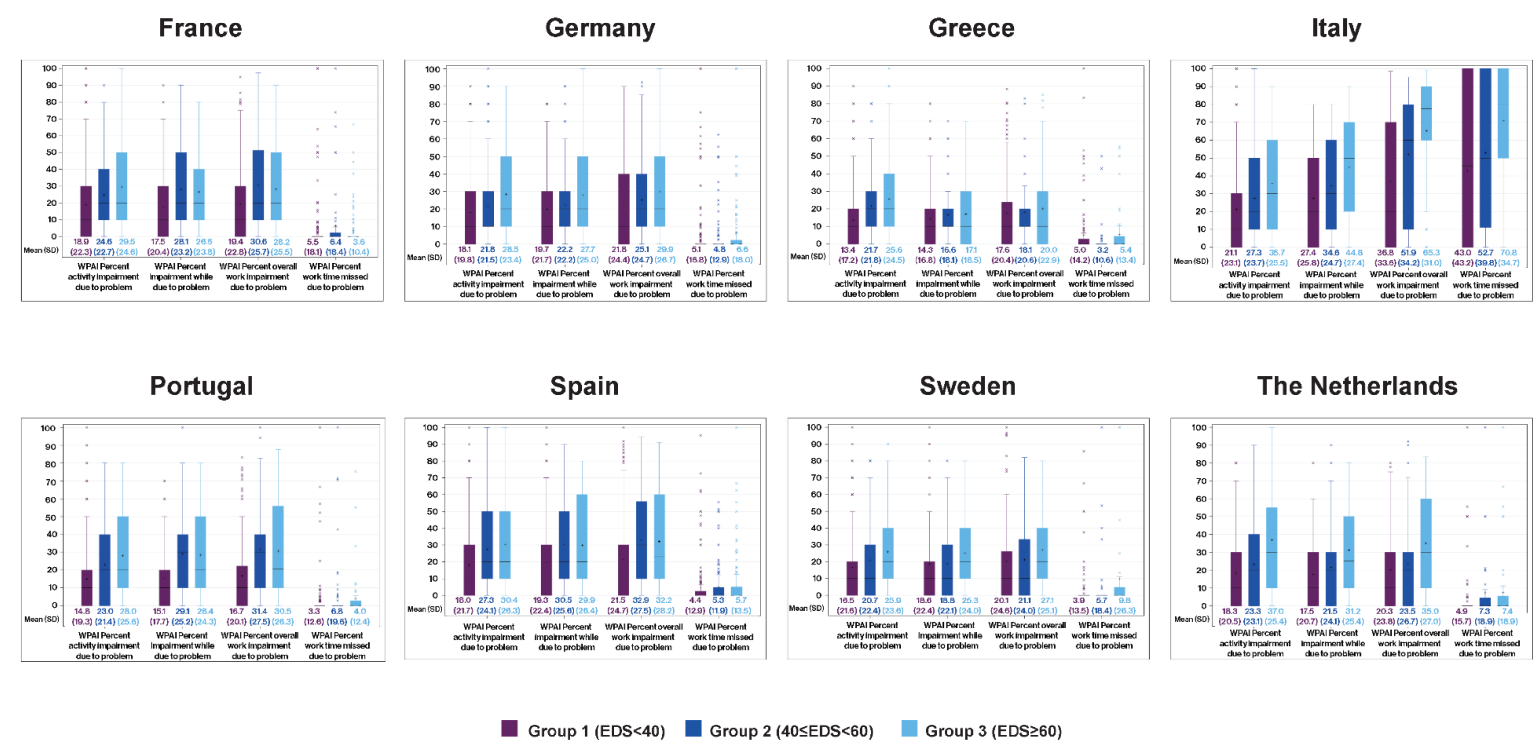


Box for each score: interquartile range (Q1-Q3); +: mean; —: median; bottom and top bars: observed minimum and maximum values; ×: outliers (values that are outside the distance of 1.5 times the interquartile range from Q1/Q3).

Score range: 0-100 (higher score indicates higher percentage of impairment or work time missed).

EDS, eye dryness score; EQ-5D-5L, EuroQoL-5 dimensions-5 levels Questionnaire; Q, quarter; SD, standard deviation

Supplementary Figure 3. WPAI scores as per EDS severity groups.



Box for each score: interquartile range (Q1-Q3); +: mean; —: median; bottom and top bars: observed minimum and maximum values; ×: outliers (values that are outside the distance of 1.5 times the interquartile range from Q1/Q3).

Score range: 0-100 (higher score indicates higher percentage of impairment or work time missed).

EDS, eye dryness score; Q, quarter; SD, standard deviation; WPAI, Work Productivity and Activity Impairment

Supplementary Table 1. Selected medical conditions for all participants.

Variable	France n=2023	Germany n=2026	Greece n=1054	Italy n=2015	Portugal n=1025	Spain n=2061	Sweden n=1023	The Netherlands n=1018	All Participants N=12245
Medical Conditions*, %									
Arthritis	4.2	10.5	16.5	16.8	12.0	14.4	9.1	11.4	11.9
DED	20.9	33.2	29.8	23.4	19.9	24.8	20.3	34.5	25.9
Multiple sclerosis	0.9	1.4	0.5	0.7	0.3	0.4	0.9	0.8	0.7
Cataracts	9.2	10.7	4.5	8.8	6.2	11.6	7.4	6.0	8.1
Asthma	10.0	10.5	8.8	10.9	10.7	11.2	14.7	10.2	10.9
Parkinson’s disease	0.2	0.1	0.6	0.6	0.3	0.2	0.3	0.6	0.4
Hearing loss	12.9	14.1	5.9	12.8	13.3	16.4	3.0	16.4	11.9
Irritable bowel disease	7.5	11.4	17.9	24.2	5.8	9.8	5.5	11.3	11.7
COPD	2.3	5.8	4.5	2.2	4.2	2.9	4.4	5.3	4.0
None of the above	46.7	40.6	42.5	39.1	51.9	41.8	51.7	41.4	44.5

*Several answers were possible. Therefore, total percentage is greater than 100

COPD, chronic obstructive pulmonary disease; DED, dry eye disease; n, number of participants; N, total number of participants

Supplementary Table 2. Patient-reported outcomes with respective description.

Survey	Description
Demographic form	<ul style="list-style-type: none"> Created for this study; basic sociodemographic questions
Diagnosis, medical history	<ul style="list-style-type: none"> Created for this study; collects information on patient diagnosis, medical history, and other medical conditions
Symptom severity/frequency VAS	<ul style="list-style-type: none"> Modified from survey Shire has used previously; consists of VASs that assessed the severity and frequency of DED symptoms in the past 24 hours and in the past week; includes the EDS Patients are asked to rate their level of discomfort in the eyes in the past 24 hours and the past week by sliding the bars: 0% meaning “no discomfort” and 100% “maximal discomfort”
Additional severity items	<ul style="list-style-type: none"> Created for this study; assesses subjectively reported severity of DED symptoms and impact, blurry vision, symptom changes with time of day, time of year, symptom triggers, experience of symptoms and treatment, most bothersome symptom of DED
Ocular Comfort Index	<ul style="list-style-type: none"> Established questionnaire that assesses frequency and intensity of dry eye symptoms³¹ Higher scores (range 0-72) indicate greater frequency and intensity of symptoms
NEI VFQ-25	<ul style="list-style-type: none"> Established questionnaire that assesses triggers and impacts on visual function; used with Rasch-based scoring algorithm VFQ-28R²² Higher scores (range 0-100) indicate greater visual functioning
EQ-5D-5L	<ul style="list-style-type: none"> Established questionnaire assessing current mobility, self-care, problems doing usual activities, pain/discomfort, and anxiety/depression³² Higher scores indicate higher health utility

WPAI:SHP	<ul style="list-style-type: none">Established questionnaire that assesses the impact of DED on productivity during work and during regular activities³³WPAI outcome scores (range 0%-100%) are expressed as impairment percentages, with higher numbers indicating greater impairment and less productivity
Survey A: IDEEL	<ul style="list-style-type: none">Questionnaire with 3 modules assessing dry eye ‘symptom-bother’, impacts on ‘Daily activities/QoL’ and ‘Treatment Satisfaction’³⁴<ul style="list-style-type: none">Higher scores (range 0-100) indicate less impact on daily activities, emotional impact and less work impact for daily activities moduleHigher scores (range 0-100) indicate greater symptom-bother for symptom-bother moduleHigher scores (range 0-100) indicate greater satisfaction with treatment effectiveness and less treatment related bother for treatment satisfaction module
Survey B: DEQ-5	<ul style="list-style-type: none">Existing questionnaire that assesses frequency and intensity of dry eye symptoms³⁵Higher scores (range 0-22) indicate greater frequency and intensity of symptoms
Survey B: SPEED	<ul style="list-style-type: none">Existing questionnaire that assesses whether symptoms are experienced currently, within the past 72 hours, and within the past 3 months as well as the frequency and severity of those symptoms³⁶Higher scores (range 0-28) indicate greater frequency and intensity of symptoms

DED, dry eye disease; DEQ-5, Dry Eye Questionnaire-5; EDS, eye dryness score; EQ-5D-5L, EuroQoL-5 dimensions-5 levels Questionnaire; IDEEL, Impact of Dry Eye on Everyday Life; IDEEL, Impact of Dry Eye on Everyday Life; NEI VFQ-25, National Eye Institute Visual Functioning Questionnaire-25; QoL, quality of life; SPEED, Standard Patient Evaluation of Eye Dryness Questionnaire; VAS, visual analog scale; WPAI:SHP, Work Productivity and Activity Impairment Questionnaire: Specific Health Problem.

Supplementary Table 3. Eye-related medical history and procedures for DED participants.

	France n=1002	Germany n=1002	Greece n=529	Italy n=1002	Portugal n=506	Spain n=1035	Sweden n=506	The Netherlands n=504
Eye-related conditions*, %								
Meibomian gland dysfunction	3.6	1.5	1.5	1.0	1.2	1.1	0.8	2.0
Sjögren's syndrome	3.4	1.6	0.9	1.3	1.4	2.1	2.6	5.2
Ocular graft versus host disease	0.5	0.6	0.8	0.3	0.4	0.3	0.6	0.0
Uveitis	1.8	2.7	0.9	1.0	0.6	1.2	0.0	0.8
Glaucoma	10.9	8.5	2.3	5.8	3.8	4.8	3.8	6.9
Cataracts	16.0	17.2	7.2	15.3	12.5	18.2	11.1	11.5
Diabetic retinopathy	1.3	3.8	0.6	2.4	3.4	2.0	3.0	5.8
Macular degeneration	2.6	5.0	2.5	4.6	1.8	3.7	0.8	2.6
Blepharitis	2.8	8.2	9.8	5.2	1.8	6.5	3.6	3.0
None of the above	64.9	62.8	77.3	71.0	77.1	65.9	77.1	69.4
Eye-related procedures*, %								
Glaucoma surgery	3.2	4.4	0.8	1.4	1.0	1.5	0.8	1.6
Cataract surgery	13.6	12.4	4.9	11.6	9.3	10.4	12.5	12.1
Refractive procedures and surgeries	4.9	4.5	6.6	6.6	7.7	8.0	3.4	12.5
None of the above	80.8	81.1	88.7	82.2	83.4	81.6	84.2	78.4

*Several answers were possible. Therefore, total percentage is greater than 100

DED, dry eye disease; n, number of participants; N, total number of participants

Supplementary Table 4. Typical daily environment for participants with and without DED.

Variable*	DED	Non-DED	All participants
	n=6084	n=6161	N=12245
Age, years			
Mean (SD)	52.82 (15.4)	52.91 (15.6)	52.86 (15.5)
Range	18.0-93.0	18.0-91.0	18.0-93.0
Female, %	61.2	57.9	59.5
Daily environment, %			
Using digital screens	86.7	82.3	84.5
Activities such as reading or driving	75.6	74.1	74.9
Air conditioned/re-circulated air	30.8	23.9	27.3
Forced air/heat	28.3	22.5	25.4
Low humidity (very dry)	27.3	11.9	19.5
Wind or moving air	31.2	15.7	23.4
Polluted air or tobacco smoke	21.3	13.0	17.1
Other environment factors	2.3	2.9	2.6

*Missing data included in calculation of percentages

DED, dry eye disease; n, number of participants; N, total number of participants; SD, standard deviation

Supplementary Table 5. OCI, DEQ-5, and SPEED scores of participants categorized as per EDS severity groups.

Country	EDS Severity	OCI Score, mean (SD)	DEQ-5 Score, mean (SD)	SPEED Score, mean (SD)
France	EDS<40	27.6 (12.5)	8.9 (3.7)	10.5 (5.1)
	40≤EDS<60	37.8 (11.8)	11.1 (3.4)	13.1 (5.4)
	EDS≥60	42.3 (12.3)	12.6 (3.7)	15.1 (5.2)
Germany	EDS<40	25.3 (12.5)	9.3 (3.8)	10.7 (5.1)
	40≤EDS<60	29.9 (11.6)	11.1 (3.6)	11.9 (5.0)
	EDS≥60	36.4 (12.4)	12.4 (3.5)	13.8 (4.9)
Greece	EDS<40	22.4 (12.5)	7.9 (3.6)	9.3 (4.6)
	40≤EDS<60	30.9 (12.5)	10.7 (3.4)	13.2 (4.8)
	EDS≥60	41.6 (12.1)	11.6 (3.5)	13.6 (4.6)
Italy	EDS<40	26.4 (13.3)	8.6 (3.4)	9.4 (4.9)
	40≤EDS<60	33.4 (13.0)	10.2 (3.2)	11.4 (4.5)
	EDS≥60	39.9 (12.1)	12.4 (3.2)	14.6 (4.9)
Portugal	EDS<40	20.3 (11.2)	8.0 (3.6)	9.8 (5.2)
	40≤EDS<60	30.1 (11.9)	10.2 (3.4)	11.2 (4.5)
	EDS≥60	36.0 (12.6)	12.2 (3.4)	14.3 (4.8)
Spain	EDS<40	25.6 (12.0)	8.6 (3.6)	9.5 (5.0)
	40≤EDS<60	34.0 (11.6)	9.9 (2.9)	11.5 (4.6)
	EDS≥60	40.0 (12.7)	12.2 (3.4)	13.8 (5.5)
Sweden	EDS<40	25.1 (12.5)	8.7 (3.6)	9.1 (5.4)
	40≤EDS<60	31.4 (10.9)	11.8 (3.7)	12.8 (5.2)
	EDS≥60	37.7 (12.1)	12.2 (3.5)	13.5 (5.0)
The Netherlands	EDS<40	22.1 (12.8)	9.2 (3.2)	10.2 (4.7)
	40≤EDS<60	30.1 (12.6)	11.2 (3.4)	12.2 (4.9)

Country	EDS Severity	OCI Score, mean (SD)	DEQ-5 Score, mean (SD)	SPEED Score, mean (SD)
	EDS≥60	37.8 (12.6)	13.1 (3.2)	14.3 (4.6)

Range for OCI scores=72 (higher score indicates more frequency/intensity of dry eye symptoms endorsed)

Range for DEQ-5 scores=0-22 (higher score indicates more endorsements of problems)

Range for SPEED scores=0-28 (higher score indicates more frequency and/or more severe symptoms)

DEQ, Dry Eye Questionnaire; EDS, eye dryness score; OCI, Ocular Comfort Index; SD, standard deviation;

SPEED, Standard Patient Evaluation of Eye Dryness Questionnaire