

Le vécu des symptômes des patients BPCO



This study was funded by AstraZeneca

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Symptom variability in patients with severe COPD : a pan-European cross sectional study

R. Kessler, M.R. Partridge, M. Miravittles, M. Cazzola, C. Vogelmeier, D. Leynaud and J. Ostinelli
Eur Respir J 2011; 37: 264–272

Objectifs de l'étude



- **Principal :**

- Evaluer la perception par le patient de la variabilité de ses symptômes respiratoires en rapport avec une BPCO sévère

- **Secondaire :**

- Décrire l'impact des symptômes sur les activités de la vie courante et sur la qualité du sommeil
- Evaluer l'impact de la variabilité des symptômes sur les activités de la vie quotidienne
- Décrire l'impact des symptômes sur les activités du matin
- Décrire comment les patients utilisent les médicaments de la BPCO
- Déterminer les facteurs prédictifs de la variabilité des symptômes
- Décrire les résultats de l'étude en fonction du sexe ou du pays de résidence des patients

Méthodologie



- Etude transversale non-interventionnelle
- Patients avec une BPCO sévère ou très sévère recrutés par des pneumologues ou des médecins généralistes
- Recueil des données
 - Un **cahier d'observation** complété par le médecin
 - Un **questionnaire** proposé au patient par téléphone par un interviewer indépendant

Recueil des données : CRF



- Données démographiques
- Histoire médicale
- Données concernant la BPCO
- Tabagisme
- Score de dyspnée MRC
- Evaluation des exacerbations
- Fonction respiratoire
- Traitements de la BPCO et traitements concomittants
- Test de marche de 6 min. et gaz du sang artériels (facultatifs)

Recueil des données questionnaire



- Symptômes de la BPCO incluant la variabilité de ceux-ci au cours de la journée, de la semaine ou de l'année:
 - dyspnée (essoufflement)
 - oppression thoracique
 - toux
 - expectoration
 - sifflements respiratoires
- Qualité du sommeil, fatigue, dépression et anxiété
- Impact des symptômes sur les activités de la vie courante
- Comportement vis-à-vis des traitements de la BPCO

Principaux critères de sélection



- Patient ambulant de plus de 40 ans avec une BPCO : $VEMS < 50\%$ and $VEMS/CVF < 0.7$
- Tabagisme > 10 paquets-année
- Consentement éclairé
- Absence d'exacerbation au cours des 3 mois précédents
- Absence d'histoire d'asthme, de rhinite allergique, de cancer du poumon ou de toute autre affection respiratoire significative

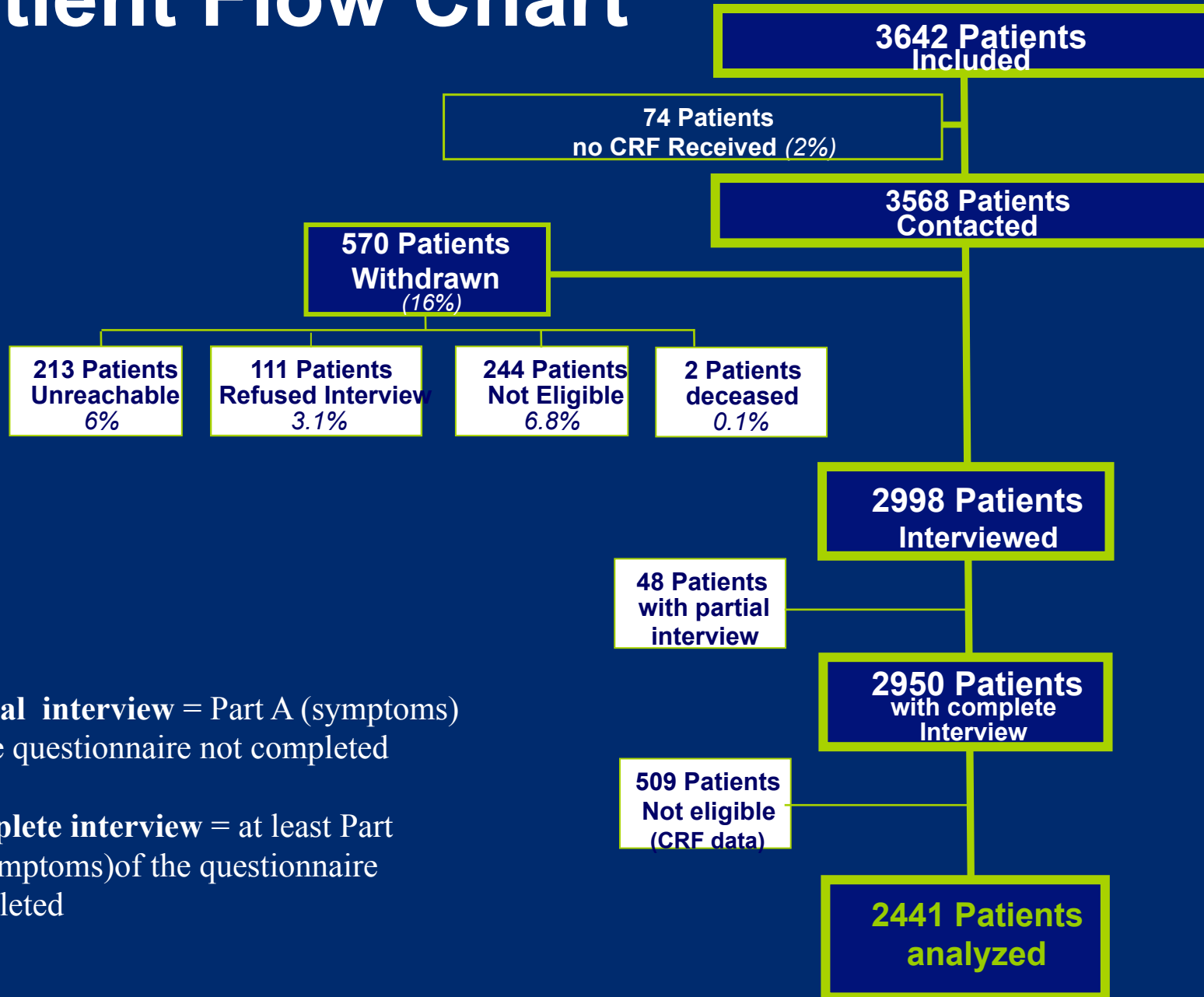
Résultats

Recrutement des patients





Patient Flow Chart



Partial interview = Part A (symptoms) of the questionnaire not completed

Complete interview = at least Part A (symptoms) of the questionnaire completed

Distribution of patients across countries



Country	Enrolled	Analyzed	Country	Enrolled	Analyzed
Austria	136	115	Netherlands	190	127
Belgium	111	57	Norway	35	24
Denmark	102	79	Portugal	30	14
Finland	66	56	Spain	677	472
France	917	608	Sweden	118	104
Germany	526	297	Switzerland	36	28
Greece	155	104	Turkey	190	121
Ireland	29	16	UK	191	139
Italy	133	80	TOTAL	3642	2441

Résultats

Données démographiques



Patients characteristics (1/3)



Characteristics	Population	Results
Male , % (n)	N = 2440	78.5 % (1916)
Female , % (n)		21.5% (524)
Mean Age , year (SD)	N = 2441	67.3 (9.4)
Height, mean - cm (SD)	N = 2399	168.7 (8.2)
Weight, mean - kg (SD)	N = 2399	74.2 (16.2)
Body Mass Index , mean - kg/m ² (SD)	N = 2394	26 (5)
Living environment	N = 2369	<ul style="list-style-type: none"> ▪ 61.2% ▪ 19.8% ▪ 19.0%
▪ Urban		
▪ Semi-rural		
▪ Rural		
Town/village size	N = 2412	<ul style="list-style-type: none"> ▪ 23.8% ▪ 22% ▪ 20.7% ▪ 33.5%
▪ < 5000 inhabitants		
▪ 5000 – 200 000 inhabitants		
▪ > 200 000 – 1 000 000 inhabitants		
▪ > 1 000 000 inhabitants		

Patients characteristics (2/3)



Characteristics	Population	Results
Main House <ul style="list-style-type: none"> ▪ Individual ▪ Institution ▪ Building (apartment) 	N = 2386	<ul style="list-style-type: none"> ▪ 56.3% ▪ 0.8% ▪ 42.9%
For Building : <ul style="list-style-type: none"> ▪ Floor, mean (SD) ▪ Lift : Yes 	N = 878 N = 906	<ul style="list-style-type: none"> ▪ 2.5 (2.9) ▪ 48.7%
Living Circumstances <ul style="list-style-type: none"> ▪ Alone ▪ With partner / Family ▪ In institution/retirement home ▪ With pets 	N = 2441	<ul style="list-style-type: none"> ▪ 17.8% ▪ 80.2% ▪ 0.6% ▪ 5.5 %
Educational Level <ul style="list-style-type: none"> ▪ Never been to school ▪ Primary school ▪ Secondary school ▪ Undergraduate degree ▪ Postgraduate degree 	N = 2396	<ul style="list-style-type: none"> ▪ 3.3% ▪ 40.5% ▪ 38.6% ▪ 10.4% ▪ 7.3%

Résultats

BPCO et fonction respiratoire



Disease



Characteristics	Population	Results
Mean time since COPD diagnosis, year (SD) <ul style="list-style-type: none"> ▪ ≤ 1 year ▪]1 – 5] years ▪] 5 – 10] years ▪ > 10 years 	N = 2365	8.9 (7.6) <ul style="list-style-type: none"> ▪ 12.9% ▪ 26.6% ▪ 28.8% ▪ 31.6%
Current Smoker, % (n) Ex-Smoker, % (n)	N = 2337	24.2% (565) 75.8% (1772)
COPD exacerbation during the last year* (any type) <ul style="list-style-type: none"> ▪ Patients with Hospitalisation, % (N) ▪ Patients with Visit to ER** , % (N) ▪ Patients with antibiotics/ oral steroids***, %(N) 	N = 2401 N = 2359 N = 2364 N = 2385	61.6% (1478) <ul style="list-style-type: none"> ▪ 20.9% (492) ▪ 19.4% (459) ▪ 55.8% (1332)

*patient with at least one hospitalisation or visit to ER or treatment with antibiotics/oral steroids

** : not followed by an hospitalisation // *** : not followed by ER or hospitalisation



Medical Research Council (MRC) dyspnoea score at inclusion (N=2429)

Mean MRC score (\pm SD) at inclusion : 2.85 (0.99)

1 Patient only gets breathless when strenuous exercise

7.1

2 Patient gets short of breath when hurrying on the level or up a slight hill

32.6

3 Patient walks slower because of breathlessness or has to stop for breath

33.1

4 Patient has to stop for breath after walking 100 meters or after a few minutes on the level

23.1

5 Patient is too breathless to leave the house.

4.2

% of patients

0

10

20

30

40

Lung Function (1/2)



	Population	Results
Mean time since LF measurement , months (SD)	<i>N</i> = 2335	5.5 (12.3)
Mean FEV₁ pre-bronchodilator , % predicted (SD)	<i>N</i> = 2279	38.8% (9.8)
Mean FEV₁ post-bronchodilator , % predicted (SD)	<i>N</i> = 1510	42.2% (11.2)
Mean FEV₁ pre-bronchodilator , liter (SD)	<i>N</i> = 2159	1.05 (0.3)
Mean FEV₁ post-bronchodilator , liter (SD)	<i>N</i> = 1472	1.14 (0.4)
Mean FVC pre-bronchodilator , % predicted (SD)	<i>N</i> = 2195	66.2% (17.5)
Mean FVC post-bronchodilator , % predicted (SD)	<i>N</i> = 1458	69.8% (18.2)
Mean FVC pre-bronchodilator , liter (SD)	<i>N</i> = 2087	2.30 (0.7)
Mean FVC post-bronchodilator , liter (SD)	<i>N</i> = 1410	2.43 (0.8)
Mean FEV₁/FVC pre-BD , % (SD)	<i>N</i> = 2077	47.1% (10.4)
Mean FEV₁/FVC post-BD , % (SD)	<i>N</i> = 1398	48.3% (11.4)

Lung Function (2/2)



	Population	Results
Reversibility : FEV1post-FEV1 pre <ul style="list-style-type: none"> ▪ Mean, ml ▪ Mean, % ▪ patients with ≥ 200 ml and 12% 	<i>N = 1310</i>	<ul style="list-style-type: none"> ▪ 92.7 ▪ 9.1 % ▪ 15.2%
Peak Expiratory Flow <ul style="list-style-type: none"> ▪ Mean (SD) , liter/min ▪ Mean (SD), % predicted value 	<i>N = 1250</i> <i>N = 990</i>	<ul style="list-style-type: none"> ▪ 178.5 (116.9) ▪ 50% (19)
Slow Vital Capacity <ul style="list-style-type: none"> ▪ Mean (SD), liter ▪ Mean (SD), % predicted value 	<i>N = 639</i> <i>N = 578</i>	<ul style="list-style-type: none"> ▪ 2.6 (0.8) ▪ 74.6% (15.7)

Résultats

Principales comorbidités



Description of co morbidities



COMORBIDITY	TOTAL, n(%)
Hypertension	1044 (42.8)
Ischaemic Heart Disease	349 (14.3)
Diabetes	332 (13.6)
Osteoporosis	266 (10.9)
Left Heart Failure	228 (9.3)
Depression (current)	209 (8.6)
Metabolic Syndrome	208 (8.5)
Sleep apnoea	189 (7.7)
Any other condition which significantly affect mobility[‡]	177 (7.3)
Cancer (other than lung cancer) – past or current	150 (6.1)
Alcoholism	120 (4.9)

Résultats

Gaz du sang artériels et test de marche de 6 min.



Arterial Blood Gas and 6' walk test



	Population	Results
<p>ARTERIAL BLOOD GAS Blood Gases available : 57.7% of patients</p> <ul style="list-style-type: none"> ▪ Time since ABG measurement, months (SD) ▪ Mean PH (SD) ▪ Mean PaO₂, mmHg (SD) ▪ Mean PaCO₂, mmHg (SD) ▪ Mean SaO₂, % (SD) 	<p><i>N</i> = 1226</p> <p><i>N</i> = 1160</p> <p><i>N</i> = 1172</p> <p><i>N</i> = 1160</p> <p><i>N</i> = 1324</p>	<ul style="list-style-type: none"> ▪ 5.7 (12.8) ▪ 7.42 (0.04) ▪ 65.7 (10.5) ▪ 41.8 (5.8) ▪ 92.5 (3.8)
<p>SIX MINUTES WALK TEST Six minutes walk test available : 13.8% of patients</p> <ul style="list-style-type: none"> ▪ Time since test performed, months (SD) ▪ Walking distance, meter (SD) 	<p><i>N</i> = 298</p> <p><i>N</i> = 326</p>	<p>7.5 (15.4)</p> <p>343.2 (136.8)</p>

Résultats

Objectif principal :

**Variabilité des symptômes de la
BPCO**



92.5 % of patients experienced COPD symptoms* in the previous 7 days.



* : breathlessness, cough, chest tightness, phlegm, wheezing.

Patients with **no symptoms**

Patients with **1 symptom** described

Patients with **2 symptoms** described

Patients with **3 symptoms** described

Patients with **4 symptoms** described

Patients with **5 symptoms** described

N=2441

183 (7.5%)

371 (15.2%)

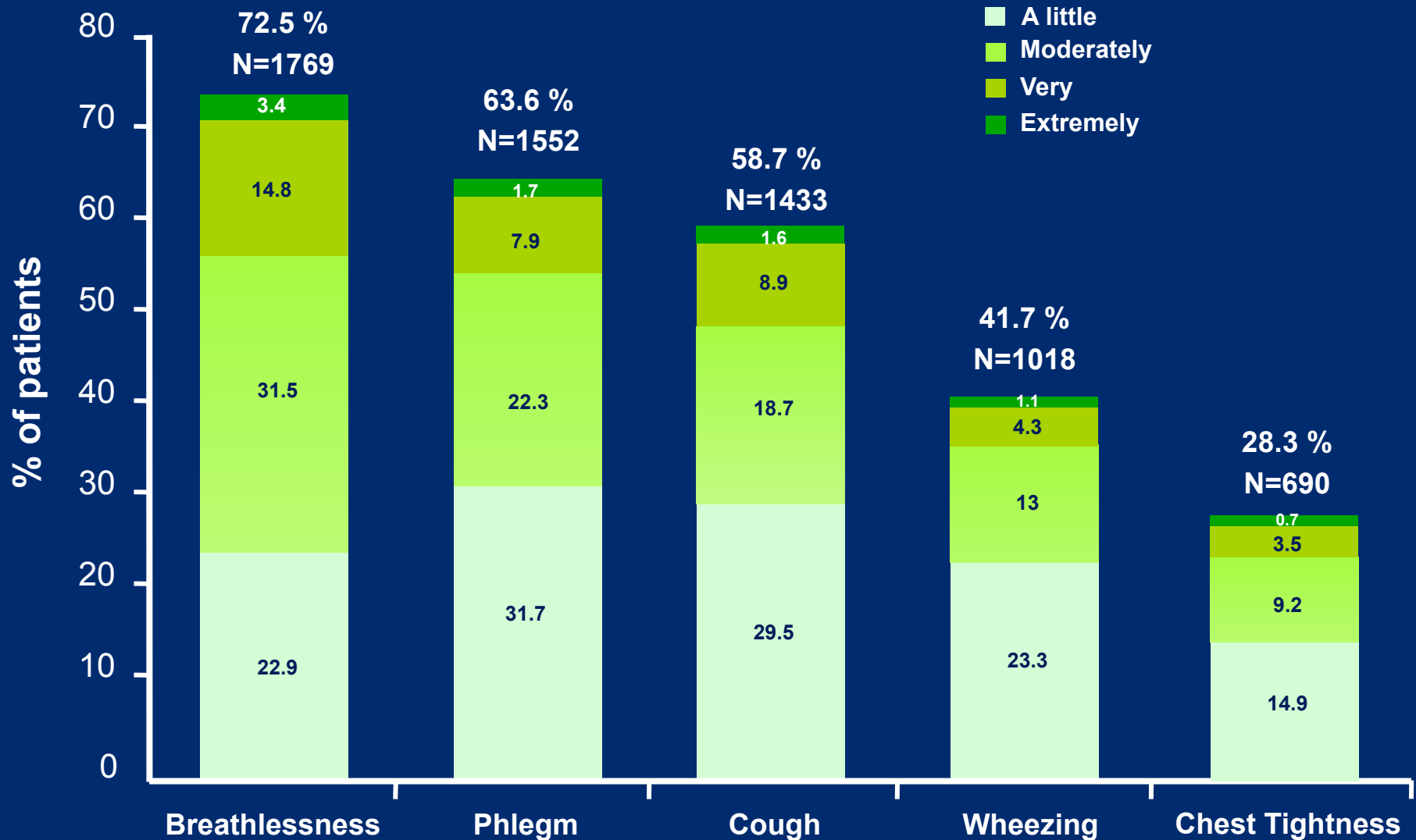
434 (17.8%)

563 (23.1%)

470 (19.3%)

280 (11.5%)

Symptoms reported by patients during 7 days prior to the interview (N=2441).

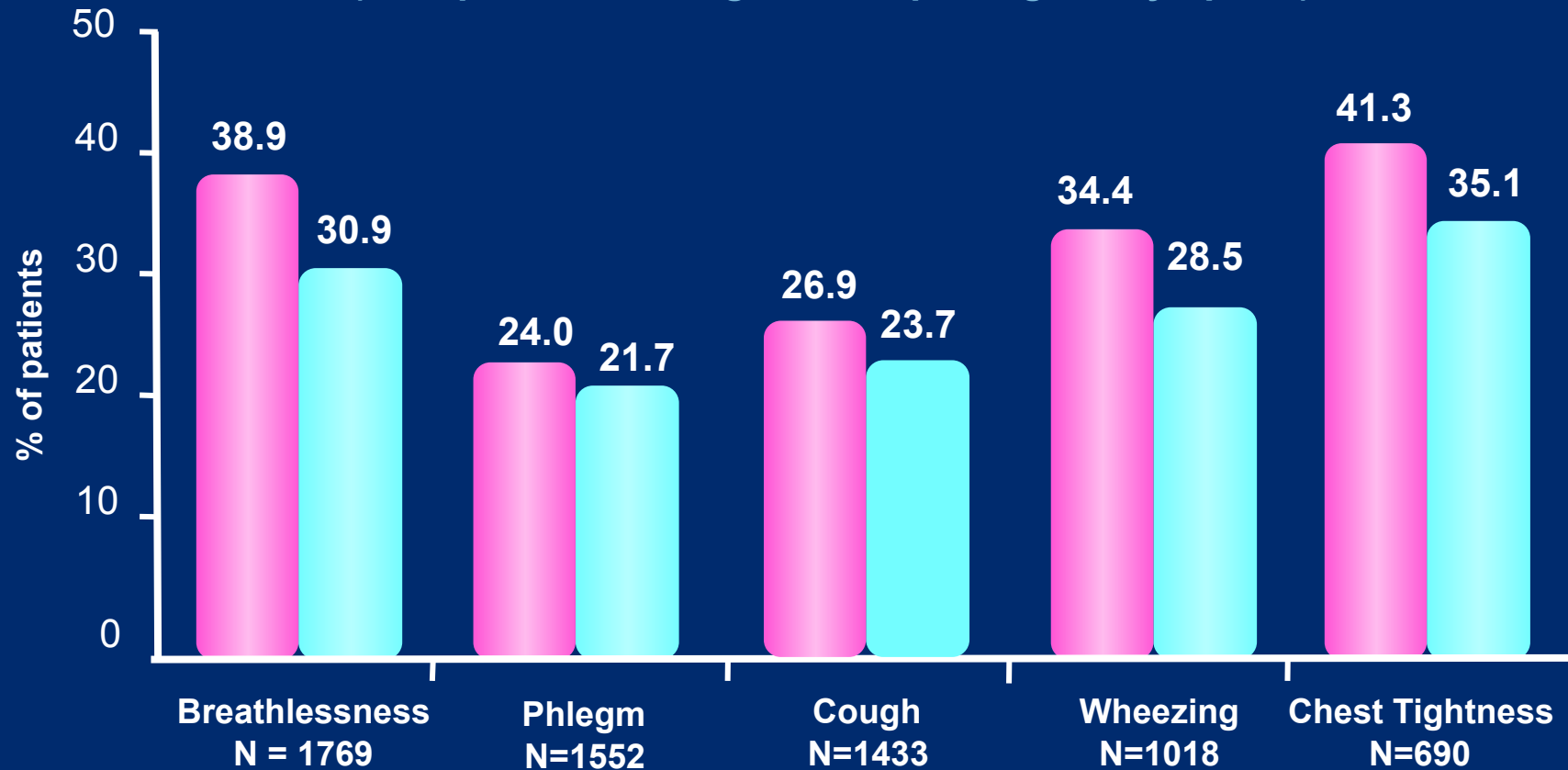




Incidence of variability of symptoms among symptomatic patients (week and day)

- During the Week
- During the Day

“Did your symptom vary ?”
(% of patients among those reporting the symptom)



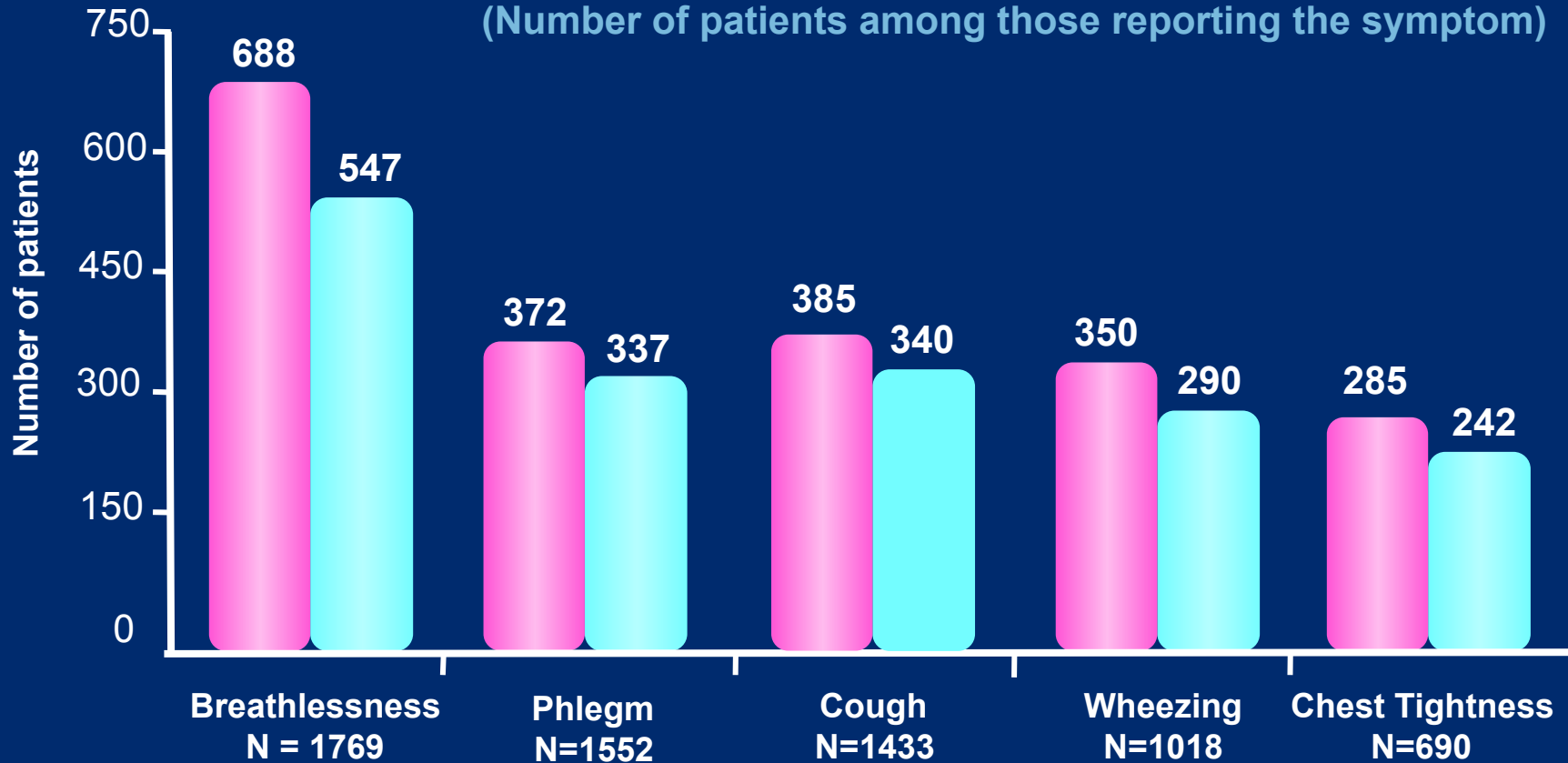
% of patients who answered 'Yes it varied a little' or 'Yes, it varied a lot' among those who experienced the symptom



Incidence of variability of symptoms among symptomatic patients (week and day)

■ During the Week
■ During the Day

“Did your symptom vary ?”
(Number of patients among those reporting the symptom)



% of patients who answered 'Yes it varied a little' or 'Yes, it varied a lot' among those who experienced the symptom

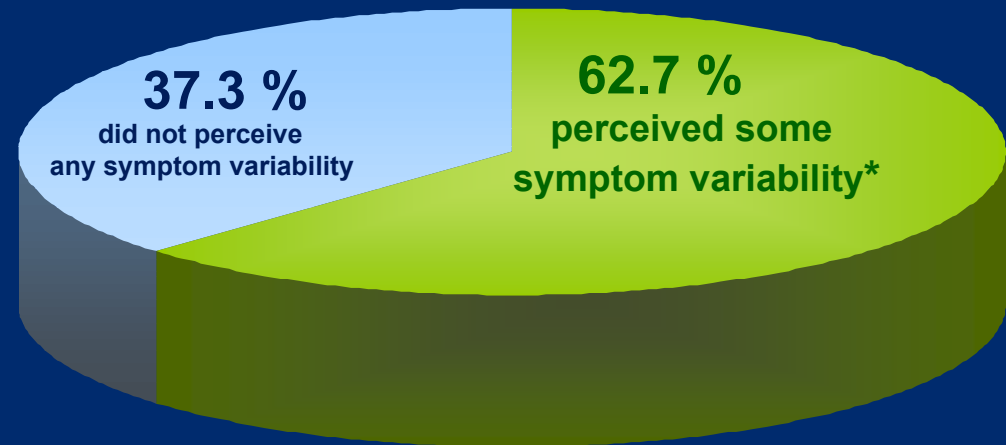


Total patient perception of symptom variability in symptomatic population

Patient perception of symptom variability throughout **the day** and/or **the week** (N=2236)

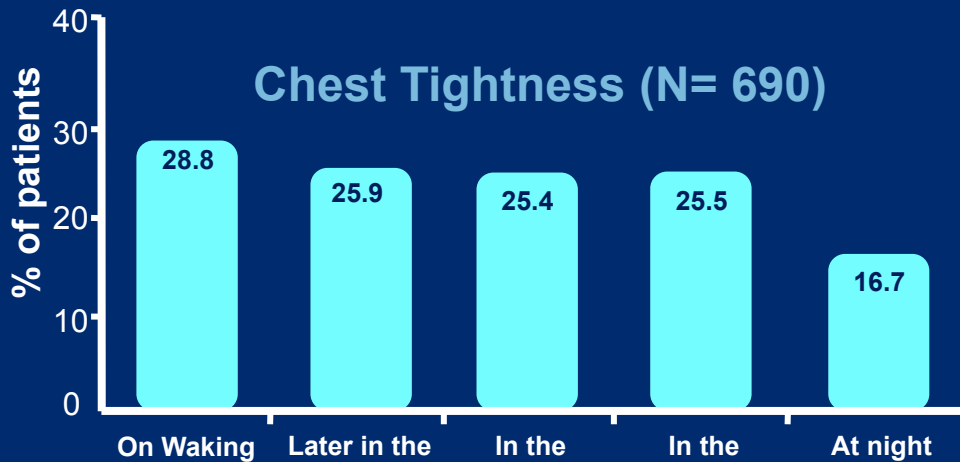
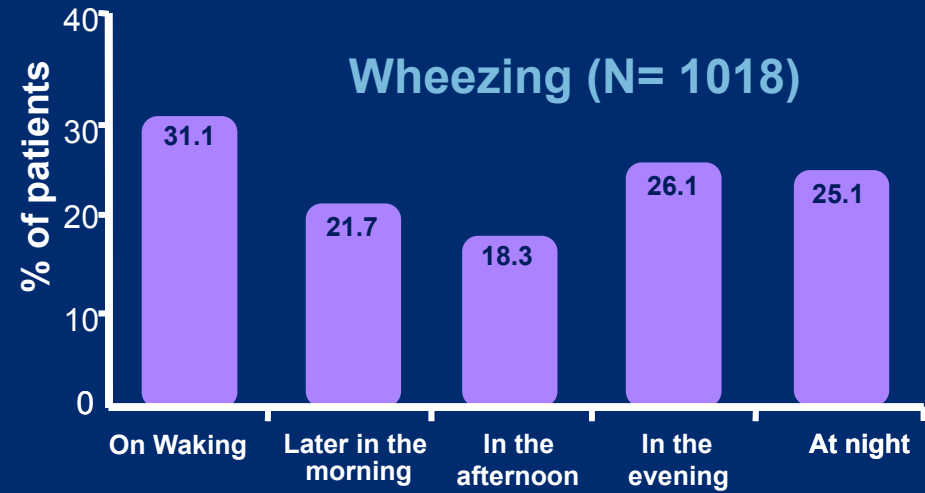
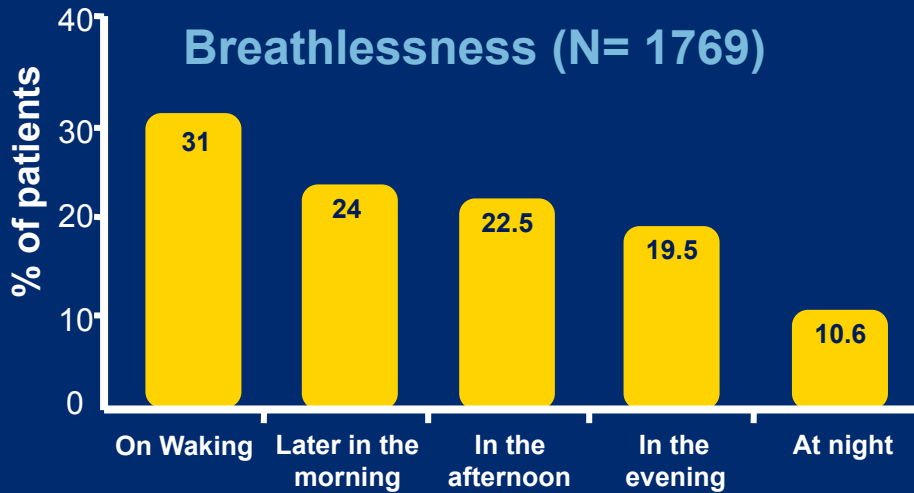
* Total number of patients who answered 'Yes it varied a little' or 'Yes it varied a lot' when asked if their symptoms varied during the day and/or during the week

37.3 % did not perceive	
At least one symptom variation during the day (N=2183)	44.7%
At least one symptom variation during the week (N=2227)	54.4%





Greatest number of patients reported troublesome symptoms on waking or later in the morning 1/2

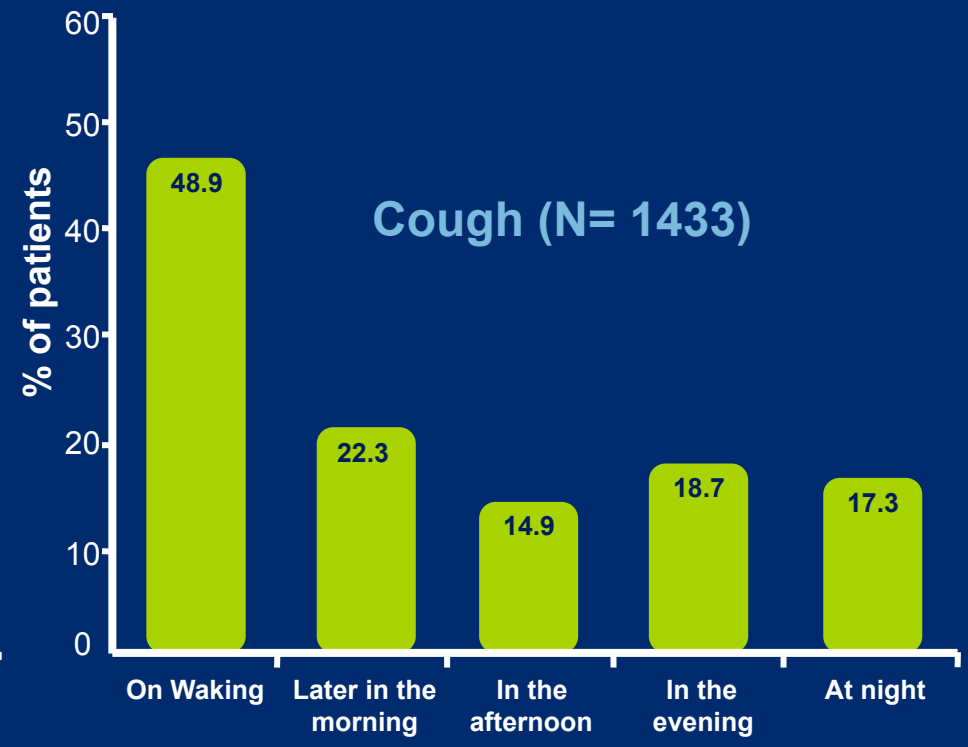
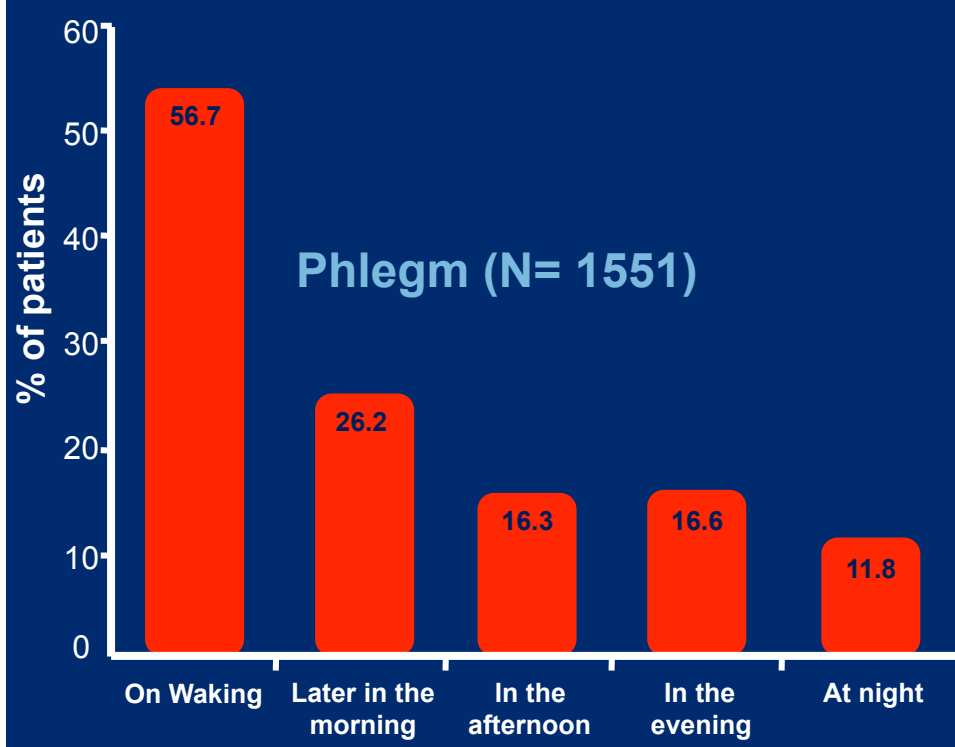


When was the symptom the most troublesome ?



Greatest number of patients reported troublesome symptoms on waking or later in the morning (2/2)

When was the symptom the most troublesome ?

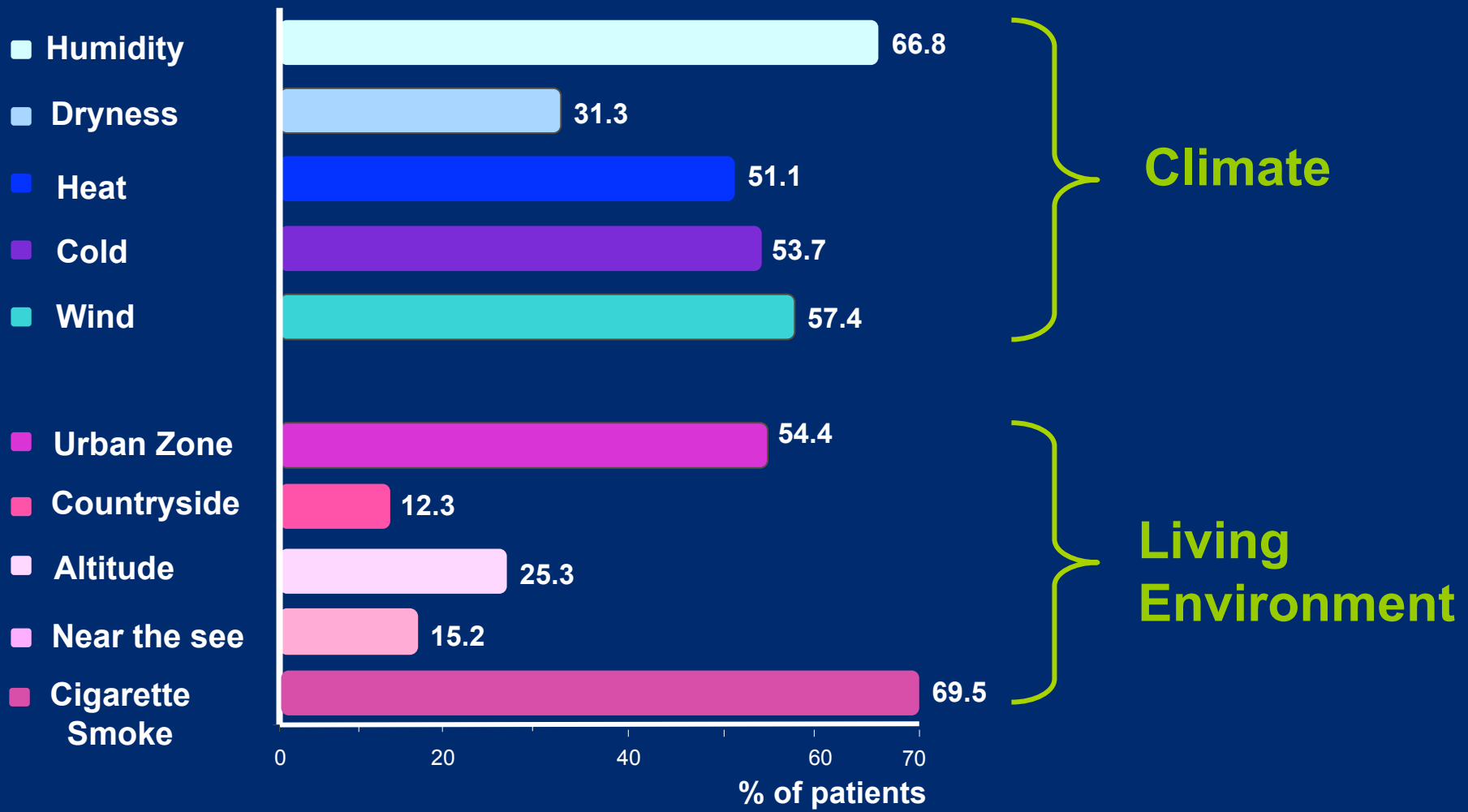




98.2% of patients reported factors increasing their chest symptoms (1/2)

Which factors do you believe increase your chest symptoms ? N = 2398*

**several choice possible*

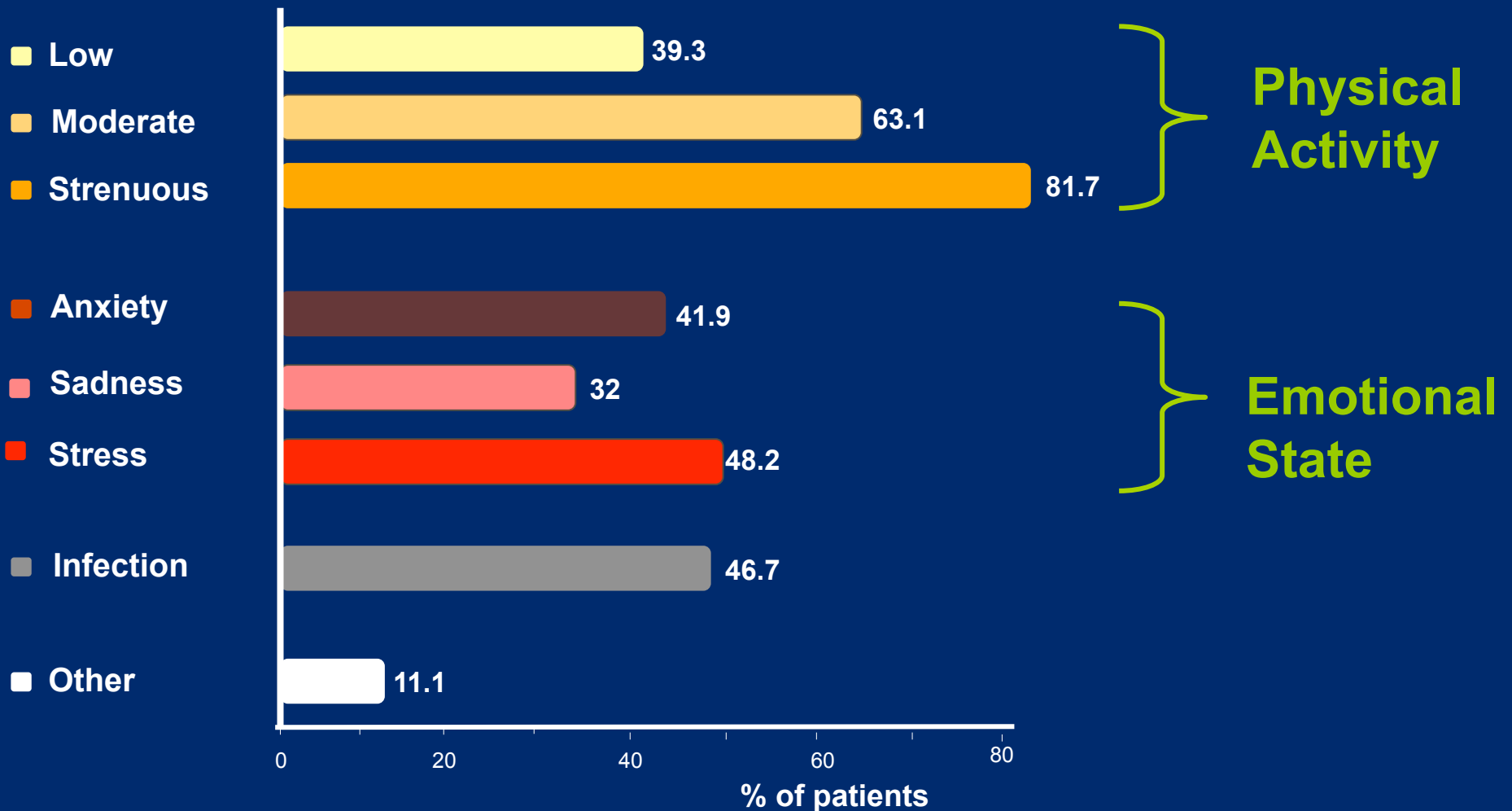


98.2% of patients reported factors increasing their chest symptoms (1/2)



Which factors do you believe increase your chest symptoms ? N = 2398*

**several choice possible*



Therapeutic behaviour : use of medication when symptoms worsen

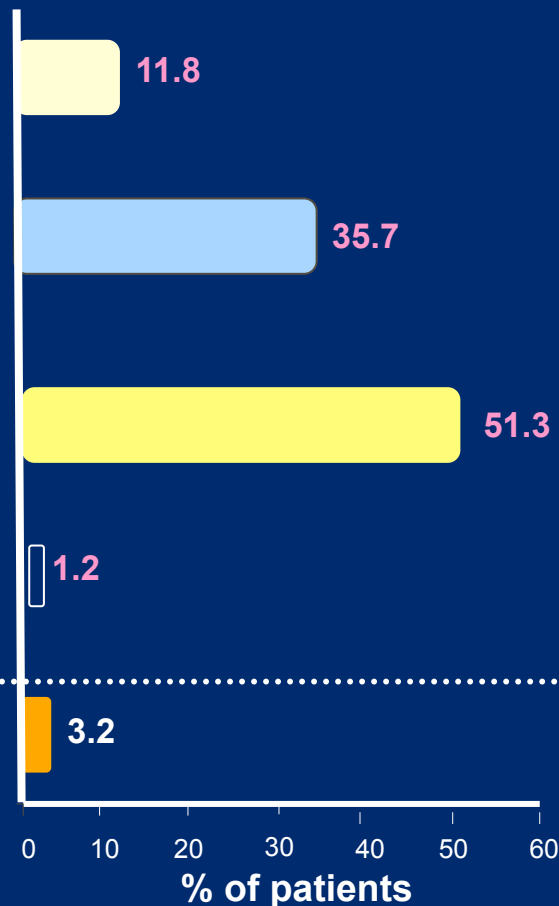


Therapeutic behaviour

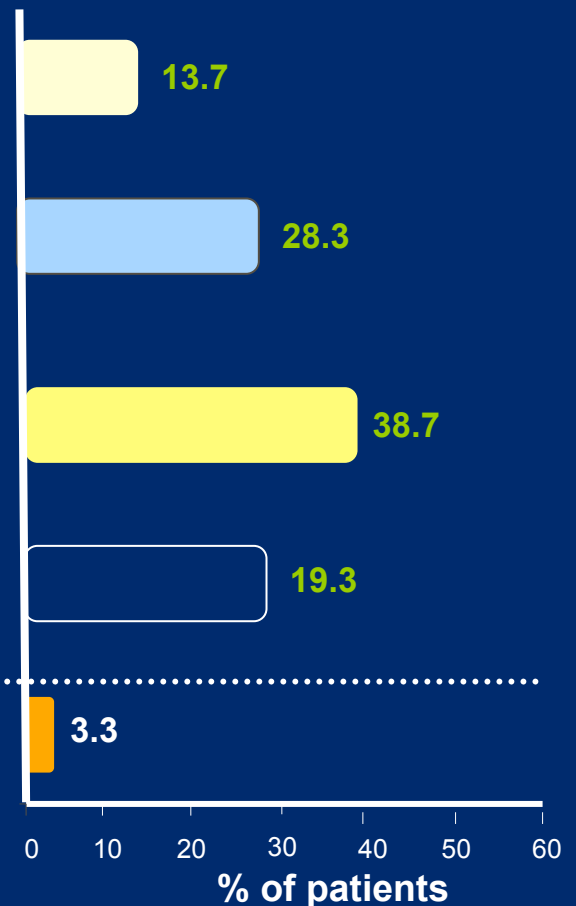
- 1. Vary the dose and/or frequency of regular daily medication
- 2. Use more of emergency inhaler
- 3. Continue using the medicine in the same way
- Don't know / don't want to answer

■ 1 + 2

Symptoms worsen during the day (N=2333)



Symptoms worsen over several days (N=2333)



Résultats

Objectifs secondaires

Impact des symptômes sur la qualité du sommeil



Sleep Quality : patient's perception (N=2441)



- **26.5% of the patients said that their chest symptoms affected the quality of their sleep over the past 7 days**
- **Because of their chest symptoms**
 - ✓ **18.9% have trouble falling asleep**
 - ✓ **21.1% wake up frequently during the night**
 - ✓ **16.7% wake up too early in the morning**

Résultats

Objectifs secondaires

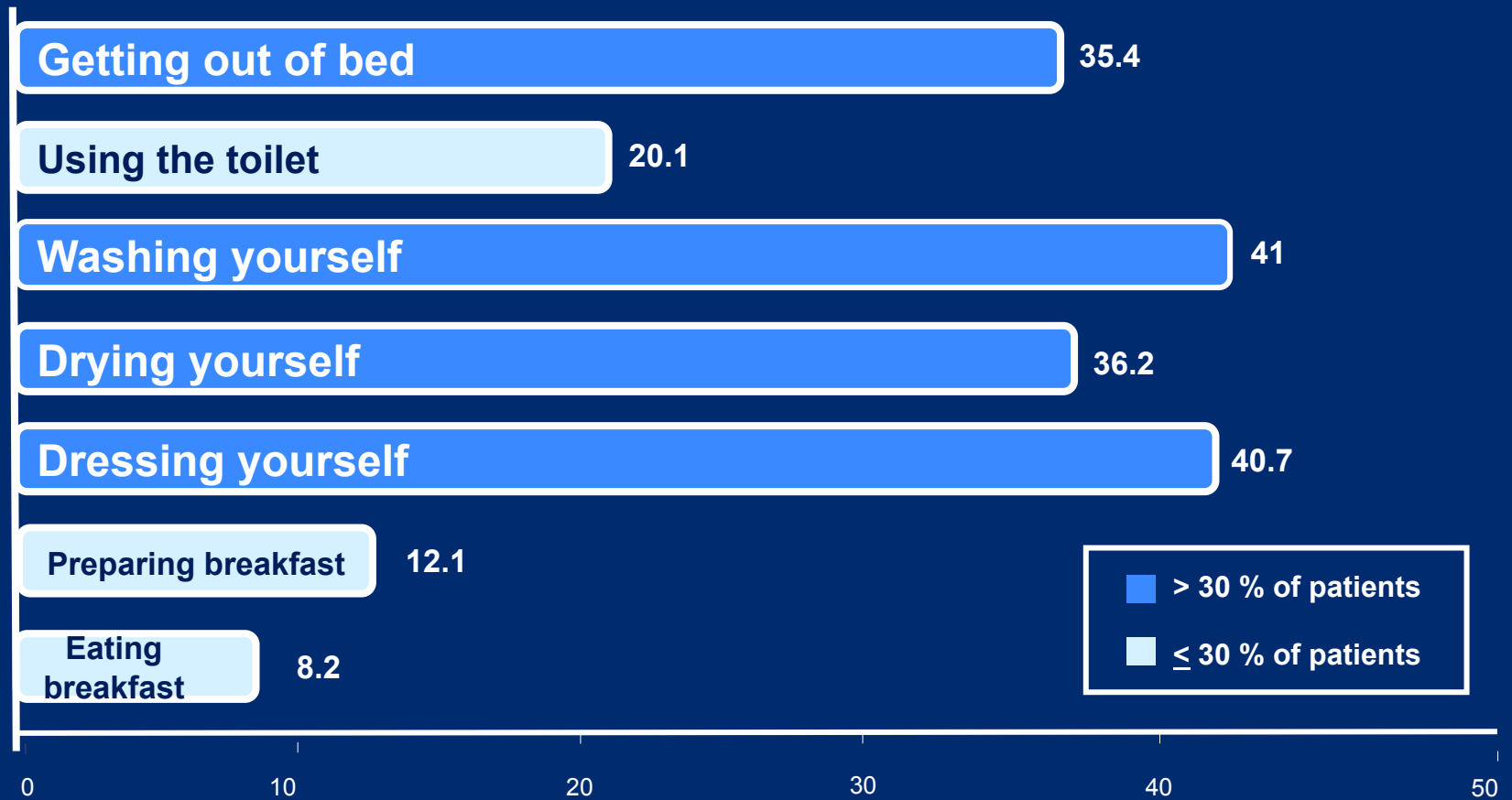
Impact des symptômes sur les activités





Impact of symptoms on morning routine Activities

*Do your chest symptoms have an impact on activities * ? N = 2441*

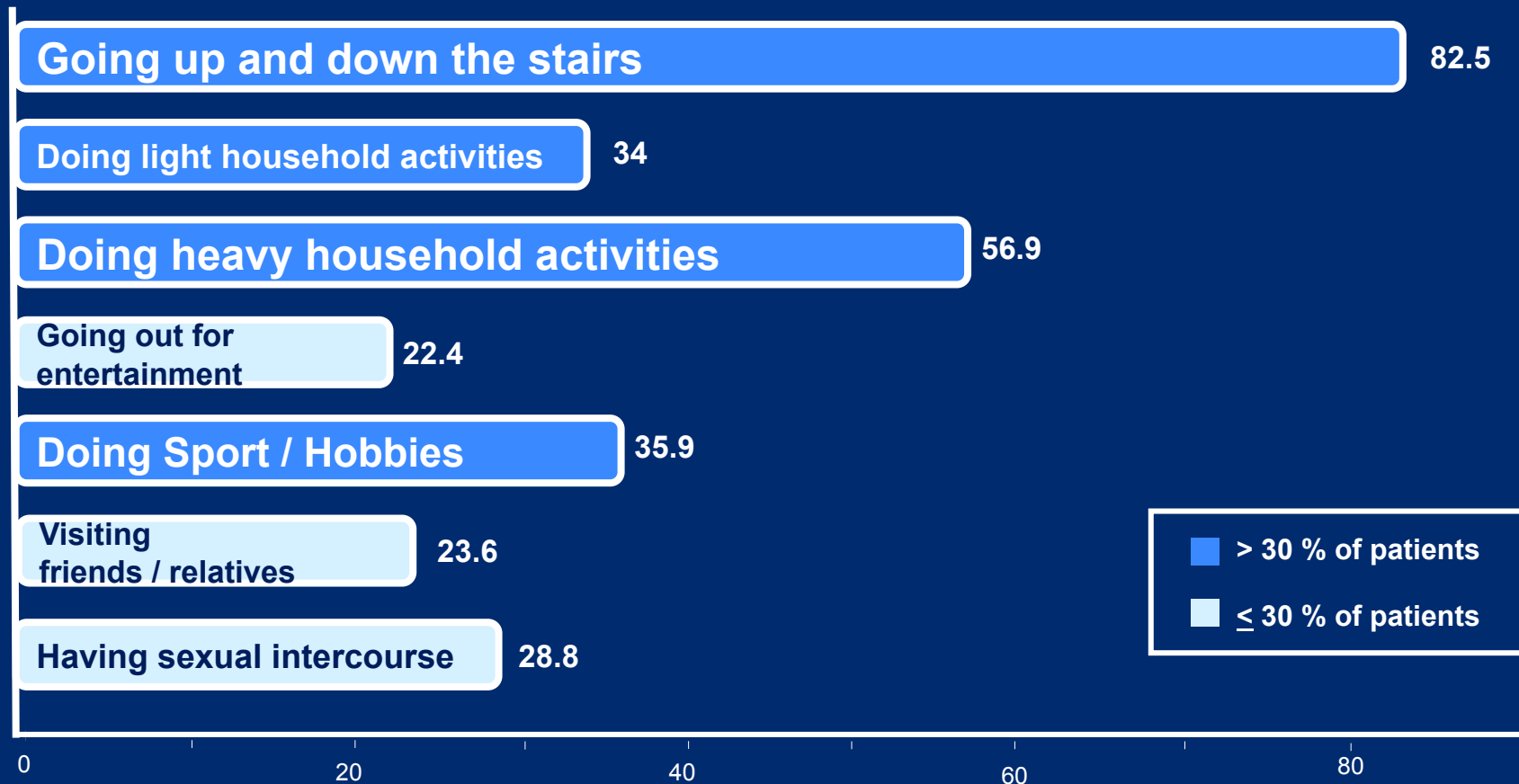


% of patients answering 'mildly', 'moderately', 'severely/I need help' or 'I could not do it at all'



Impact of symptoms on other daily activities (2/2)

*Do your chest symptoms have an impact on activities * ? N = 2441*



% of patients answering 'mildly', 'moderately', 'severely / I need help' or 'I could not do it at all'

Résultats

Objectifs secondaires

Facteurs associés à la perception de la variabilité des symptômes





Factors associated with variability of breathlessness during **the week** : multivariate analysis

FACTOR	Odds ratio	IC 95%	p-value
Age (odds ratio were calculated for 10 years changes)	0.852	[0.752 ; 0.965]	0.0118
Severity of breathlessness : answer 'extremely' vs. answer 'a little'	1.787	[1.016 ; 3.144]	0.044
Severity of breathlessness : answer 'very' vs. answer 'a little'	1.791	[1.286 ; 2.492]	0.0006
Number of exacerbations during the last 12 months: > 2 vs. 0	1.432	[1.058 ; 1.937]	0.02
Left heart failure: Yes vs. No	0.532	[0.347 ; 0.816]	0.0038
Physicians activities: GP vs. specialist	1.569	[1.225 ; 2.009]	0.0004

→ The following factors significant in the univariate analysis ($p < 0.2$) were not significant in the multivariate analysis : gender, BMI, living circumstances alone or with partner/family, FEV1 pre BD, severity moderate vs. a little, MRC dyspnoea score, ischemic heart disease, osteoporosis, maintenance treatment with SABD alone



Factors associated with variability of breathlessness during the day : multivariate analysis

FACTOR	Odds ratio	IC 95%	p-value
Age	0.852	[0.754 ; 0.963]	0.0106
Severity of breathlessness : answer 'extremely' vs. answer 'a little'	2.565	[1.518 ; 4.333]	0.0004
Severity of breathlessness : answer 'moderately' vs. answer 'a little'	1.469	[1.104 ; 1.954]	0.0083
Severity of breathlessness answer 'very' vs. answer 'a little'	2.848	[2.057 ; 3.943]	<0.0001
Maintenance treatment with one LABD alone (LABA or LAMA) : No vs. Yes	2.062	[1.358 ; 3.132]	0.0007
Physicians activities: GP vs. specialist	1.390	[1.082 ; 1.785]	0.0099

→ The following factors significant in the univariate analysis ($p < 0.2$) were not significant in the multivariate analysis : BMI, living circumstances alone or with partner/family, time since COPD diagnosis, FEV1 pre BD, number of exacerbation during the past 12 months, MRC dyspnoea score, maintenance treatment with SABD alone)



Factors associated with variability of breathlessness

- **Factors associated with an increase of the variability**
 - ✓ Perception of more severe symptoms
 - ✓ Patients treated by GPs
 - ✓ More than 2 exacerbations in the past year (only for week)
- **Factors associated with a decrease of the variability**
 - ✓ An older age (only for day)
 - ✓ Presence of left heart failure (only for week)
 - ✓ Maintenance treatment with only one LABD

Conclusion





Conclusions

- Les symptômes respiratoires des patients BPCO sévères ou très sévères sont variables (nature et fréquence) alors que les patients sont à distance d'une exacerbation.
- La dyspnée (d'effort) était le symptôme le plus fréquent (72.5% des patients), suivie par l'expectoration (63.6%), la toux (58.7%), les sifflements respiratoires (41.7%) et l'oppression thoracique (28.3%).
- Environ 63% des patients avec une BPCO sévère perçoivent leurs symptômes respiratoires comme variables au cours de la journée et/ou d'une semaine à l'autre.
- La dyspnée et l'oppression thoracique étaient les symptômes les plus variables selon la perception des patients.



Conclusions

- Les symptômes de la BPCO (stade III ou IV de GOLD) sont le plus gênants le matin, au moment du lever.
- Les symptômes de la BPCO (stade III ou IV de GOLD) interfèrent avec des activités essentielles de la vie courante comme le lever ou la toilette.
- Quand les symptômes de la BPCO s'aggravent au cours d'une journée ou pendant plusieurs jours consécutifs, seuls 35.7% et 28.3 % des patients respectivement utilisent leur bronchodilatateur de secours.

Ces observations ont des implications pour une meilleure prise en charge des patients avec une BPCO sévère.