Korean Epidemiology of COPD

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Korean Epidemiology of COPD

질문 1. 현재 COPD 환자는 얼마나 많고, 어떤 경우에 많은가?

질문 2. COPD 환자는 증가하고 있고 앞으로도 증가할 것인가?

질문 3. COPD 환자는 얼마나 많이 발병하고, 어떤 경우에 잘 생기는가?

질문 4. COPD는 환자는 얼마나 많이 병원을 이용하는가?

질문 5. COPD는 환자는 얼마나 많이 사망을 하는가?

Korean Epidemiology of COPD

- 한국인 COPD의 유병율 및 관련요인
- 한국인 발생률 및 위험요인
- 의료이용
- 사망률

국민건강영양조사

Nationwide Survey

Representative Sample

Cross Sectional

Study !!

Health Survey

In Person Interview
High Response Rate
Large Sample Size
Extensive Data Collection
Extensive Year of data Collection

Many Important Report and Publication

Nutrition Survey

Examination

2001년도 유병률

TABLE 3. AGE-SPECIFIC PERCENTAGE OF SUBJECTS WITH AIRFLOW OBSTRUCTION BY GOLD CRITERIA*

Age (*yr*)	Total	Male	Female
18–24	1.9	1.1	2.7
25–44	2.5	3.6	1.6
45–64	10.7	17.4	4.9
65–74	35.0	52.4	19.0
> 75	41.4	60.0	21.4
Age > 45	17.2	25.8	9.6
Total	7.8 ± 0.4†	10.9 ± 0.5†	4.9 ± 0.5†

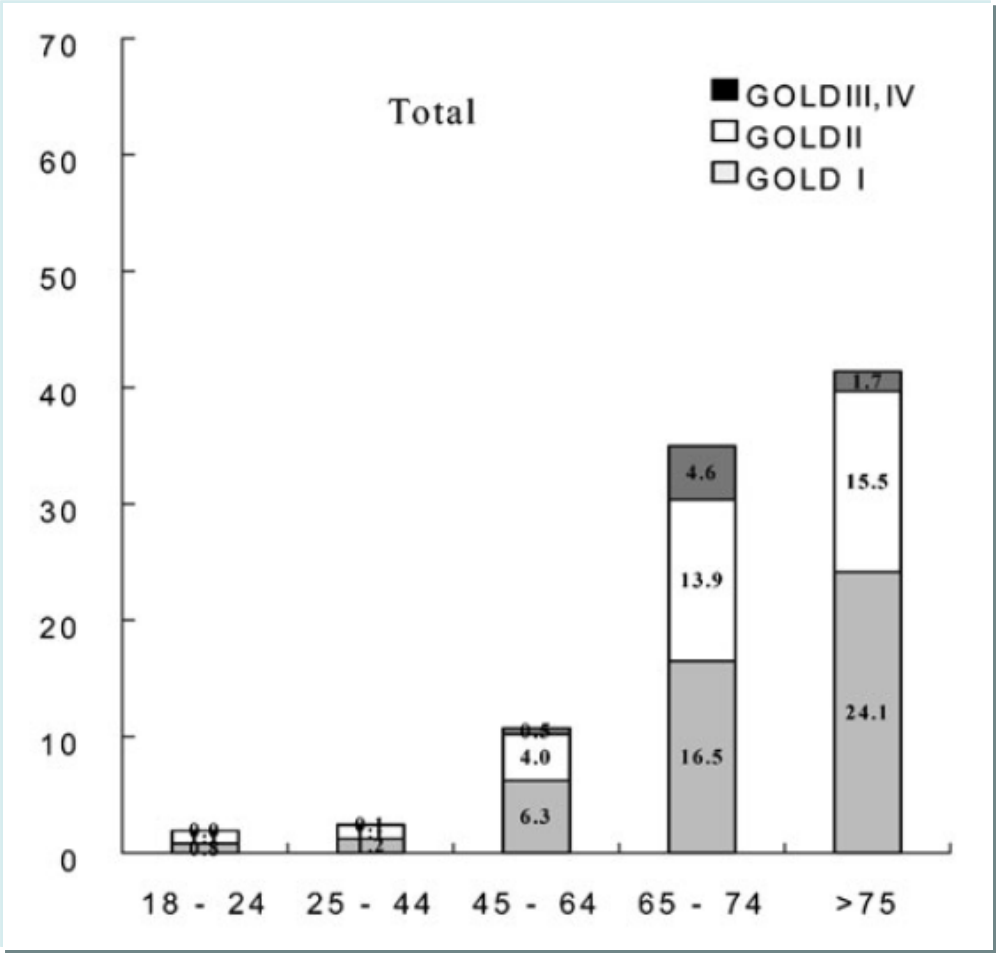
Definition of abbreviation: GOLD = Global Initiative for Chronic Obstructive Lung Disease.

* GOLD criteria: FEV_1/FVC ratio < 70%.

† Mean ± SEM: In females, standard errors are more than 10% of prevalence.

Am J Respir Crit Care Med Vol 172. pp 842–847, 2005

2001년도 유병률



Am J Respir Crit Care Med Vol 172. pp 842–847, 2005

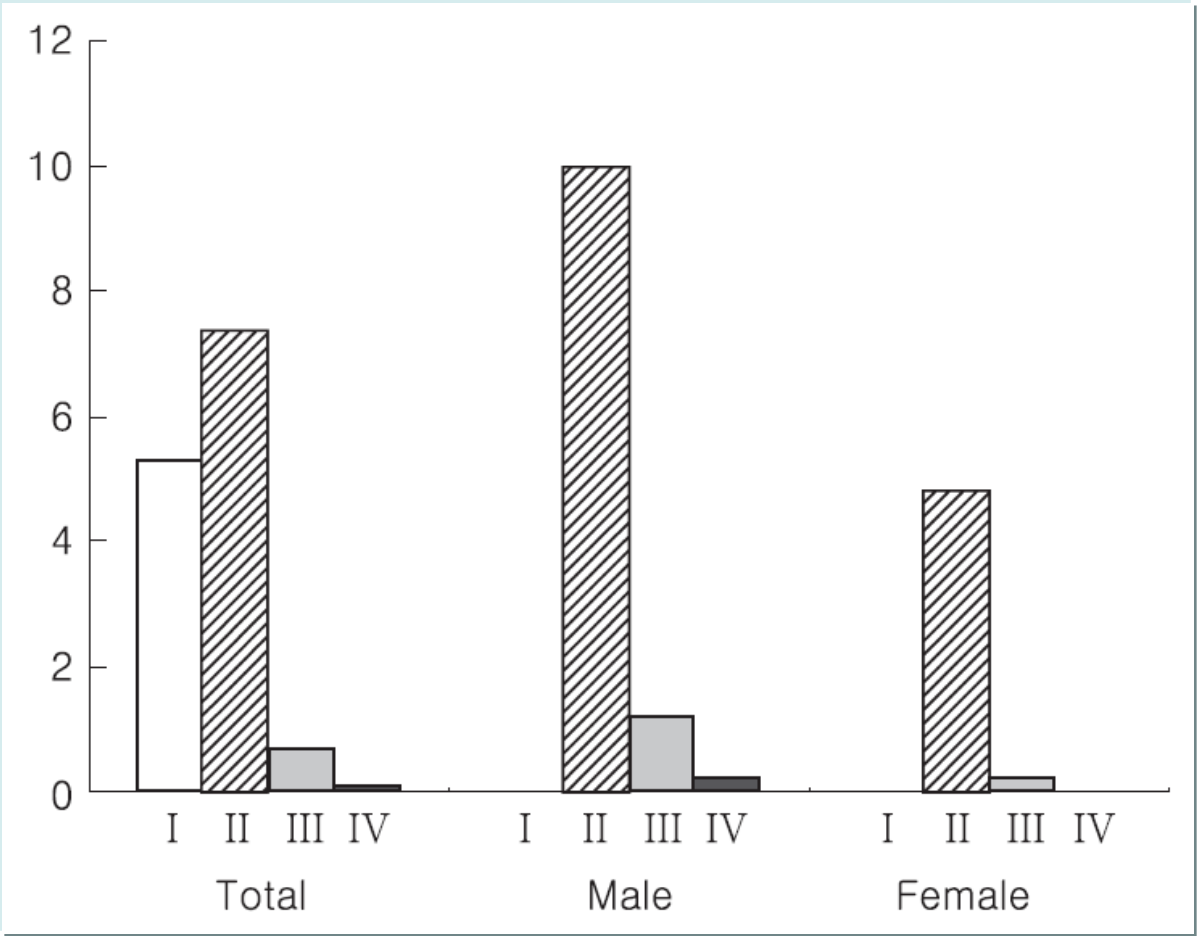
2008년도 유병률

Table 1 Prevalence of airflow obstruction stratified by place of residence, education and income

	Total population		Men		Women	
	Number of subjects	Prevalence %	Number of subjects	Prevalence %	Number of subjects	Prevalence %
Age						
≥19 years	3435	8.8	1478	11.6	1957	5.9
≥40 years	2501	13.4	1056	19.4	1445	7.9
Place of residence						
Rural	1741	12.2	730	17.4	1011	7.5
Urban	760	17.8	326	25.9	434	9.5
Education						
Elementary school or lower	957	21.2	275	38.6	682	12.7
Middle school	423	15.1	201	22.7	222	6.4
High school	712	7.0	318	11.4	394	2.6
College or higher	401	8.5	256	10.2	145	5.3
Income						
Low	561	14.6	221	20.6	340	9.2
Low ~ middle	596	13.2	257	19.7	339	7.0
Middle ~ high	629	11.8	281	17.7	348	5.8
High	642	10.7	267	15.6	375	6.6

Respirology (2011) 16, 659–665

2008년도 유병률



Prevalence of airflow obstruction among subjects older than 40 years, stratified according to GOLD classification. I, II, III and IV

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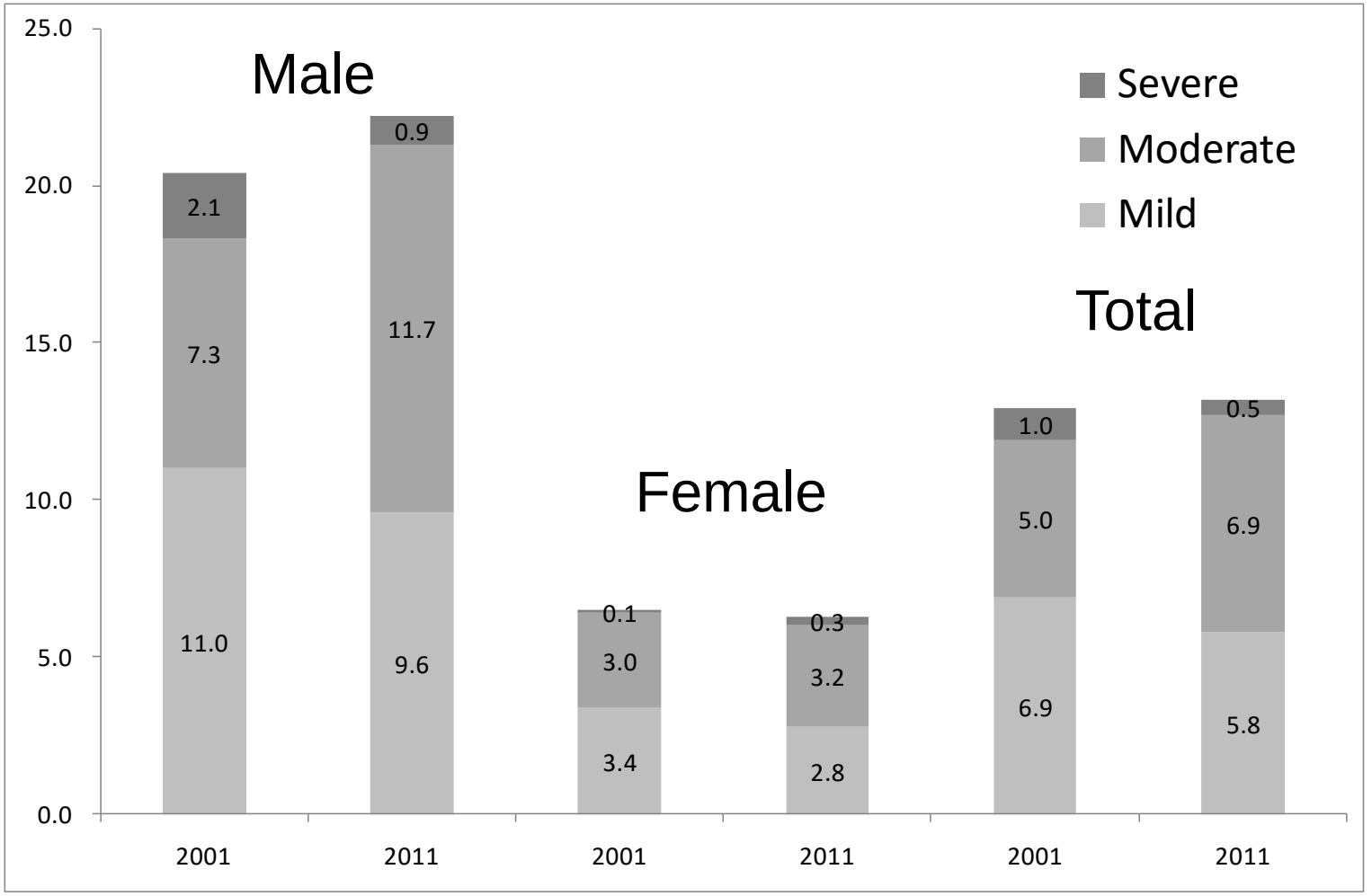
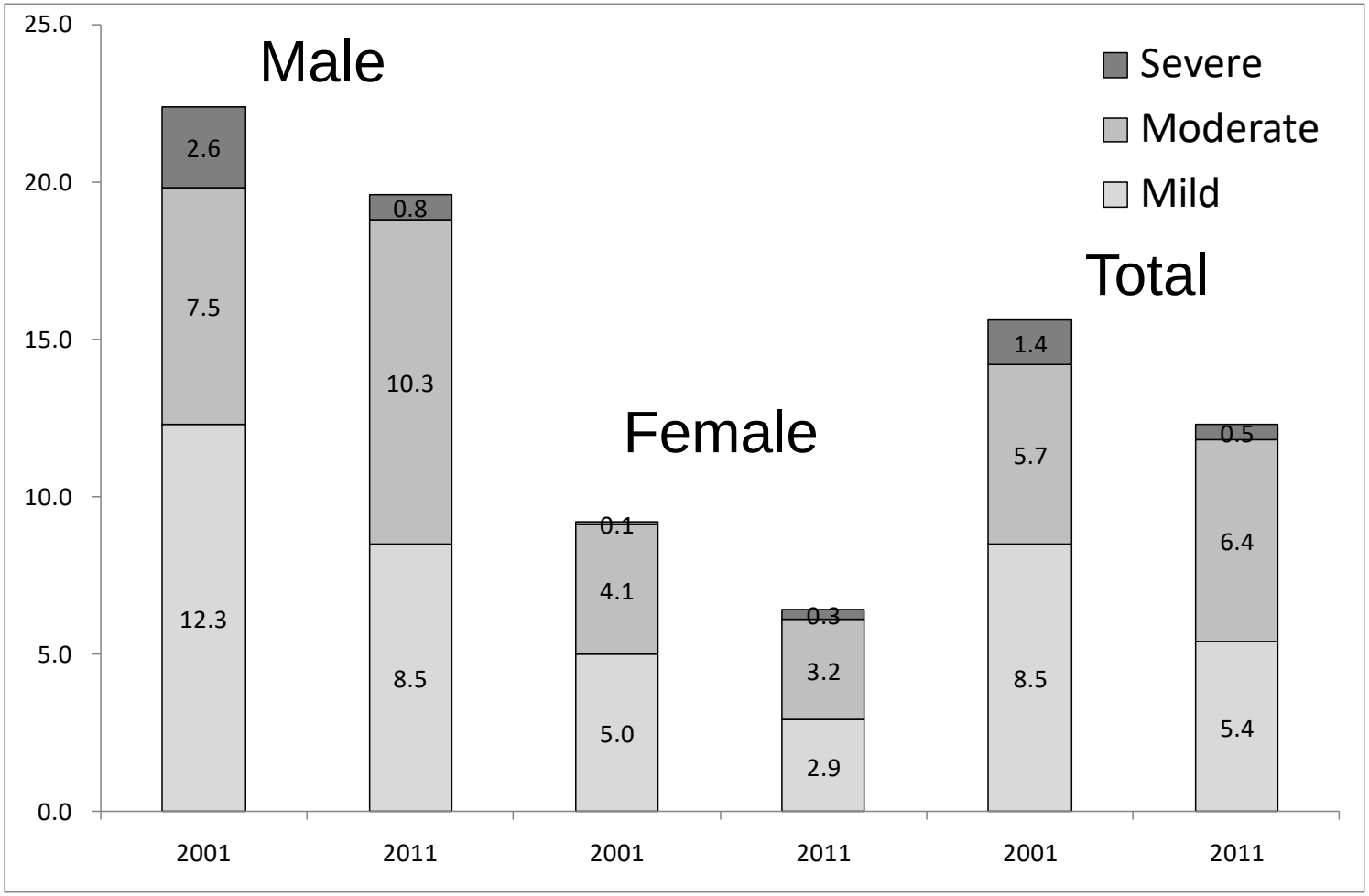
유병률의 변화



Unpublished Data using KNAHNES 2001 and 2011

표준화 유병률의 변화



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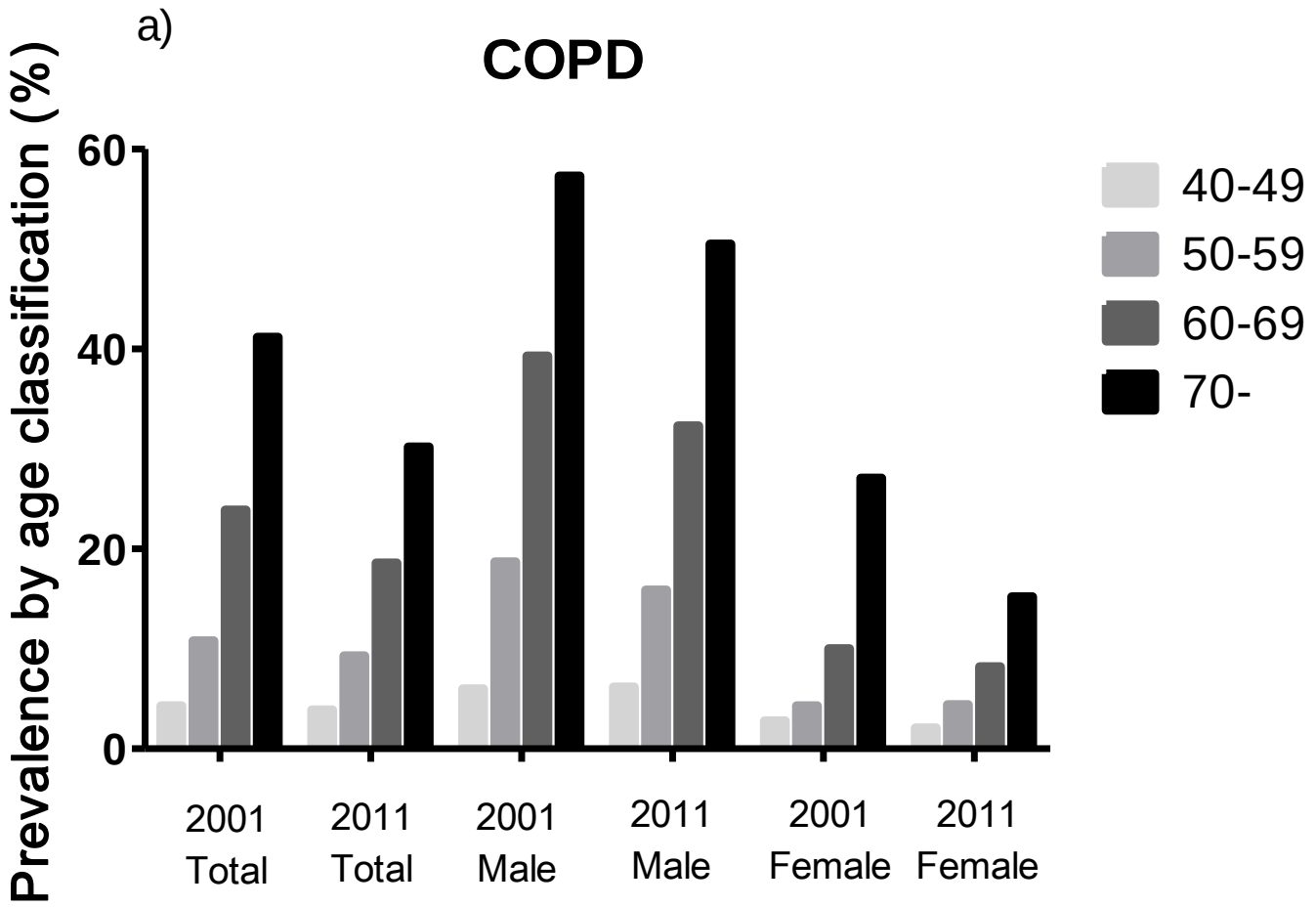

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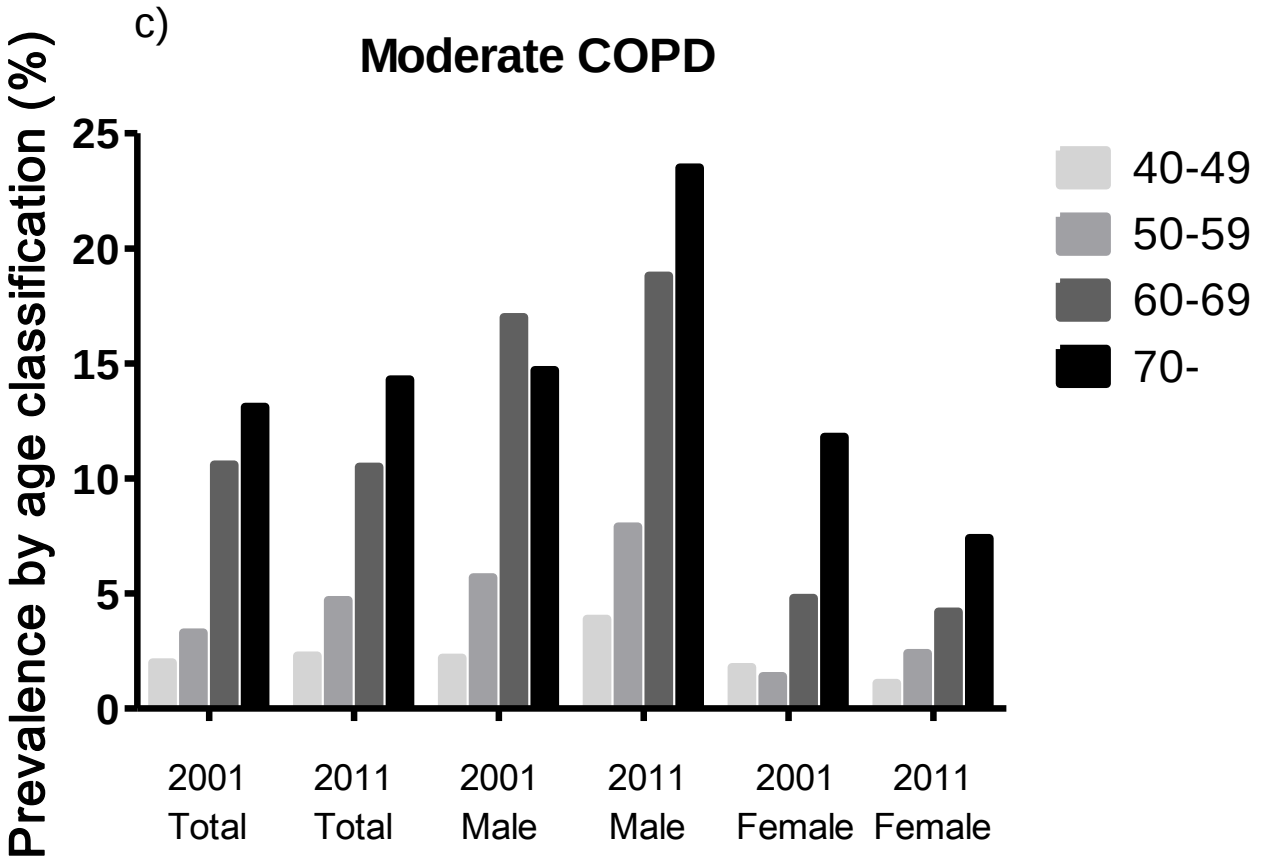

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2001년도 관련요인

		COPD		Bivariate Analysis			Multivariate Analysis		
	Total (*No.*)	%	No.	OR	p Value	95% CI	OR	p Value	95% CI
Age, yr									
< 65	1,312	10.7	141						
⩾ 65	361	36.0	130	4.67	< 0.0001	3.54–6.17	4.05	< 0.0001	2.92–5.61
Sex									
Female	883	7.9	70						
Male	790	25.4	201	3.95	< 0.0001	2.96–5.31	2.62	< 0.0001	1.64–4.18
Area									
Urban	1,219	14.7	179						
Rural	454	92	41	1.48	0.0061	1.12–1.95	1.02	0.9318	0.73–1.42
Monthly income									
High	1,116	12.1	135						
Low	423	26.5	112	2.62	< 0.0001	1.98–3.47	2.13	< 0.0001	1.52–2.98
Smoking amount									
Never	991	8.8	87						
0 – 19 pack-yr	271	15.9	43	1.96	0.0008	1.32–2.9	1.11	0.6908	0.66–1.87
⩾ 20 pack-yr	388	35.6	138	5.74	< 0.0001	4.24–7.76	2.81	< 0.0001	1.76–4.5

Definition of abbreviations: CI = confidence interval; COPD = chronic obstructive pulmonary disease; OR = odds ratio.

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2008년도 관련요인

	n	%	Univariate analysis			Multivariate analysis		
			OR	*P*-value	95% CI	OR	*P*-value	95% CI
Age, years								
<65	1812	8.0	Reference	—	—	Reference	—	—
≥65	689	31.1	1.45	>0.05	0.88–2.37	1.78	<0.05	1.01–3.17
Gender								
Female	1445	7.9	Reference	—	—	Reference	—	—
Male	1056	19.4	4.01	<0.001	2.84–5.68	3.07	<0.001	1.90–4.97
Place of residence								
Rural	1741	12.2	Reference	—	—	Reference	—	—
Urban	760	17.8	1.30	>0.05	0.95–1.77	1.18	>0.05	0.85–1.63
Education								
Elementary	957	21.2	Reference	—	—	Reference	—	—
College or higher	401	8.5	0.96	>0.05	0.52–1.76	0.60	>0.05	0.30–1.20
Income								
Low	561	14.6	Reference	—	—	Reference	—	—
Low ~ middle	596	13.2	0.85	>0.05	0.57–1.28	0.89	>0.05	0.58–1.38
Middle ~ high	629	11.8	0.73	>0.05	0.47–1.13	0.86	>0.05	0.54–1.36
High	642	10.7	0.61	<0.05	0.39–0.96	0.87	>0.05	0.54–1.39
Smoking								
Never	1506	7.7	Reference	—	—	Reference	—	—
Former	501	17.7	2.48	<0.001	1.66–3.64	1.28	>0.05	0.77–2.11
Current	485	22.9	5.41	<0.001	3.64–8.05	2.80	<0.001	1.76–4.45

Respirology (2011) 16, 659–665

지역사회 기반 코호트

안성코호트

농촌지역

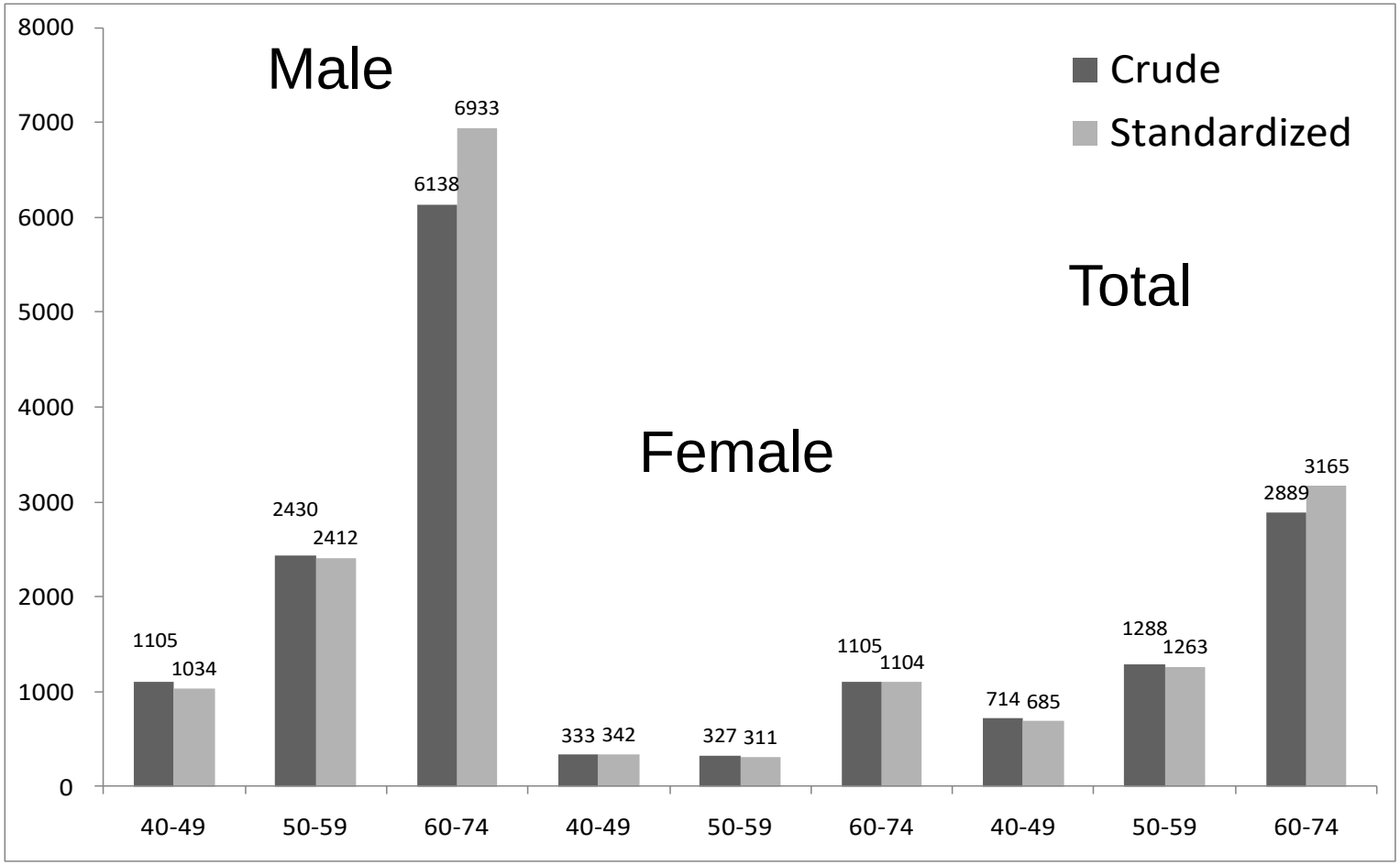
* '13~, 6차 추적조사(7기) 진행중

안산코호트

도시지역

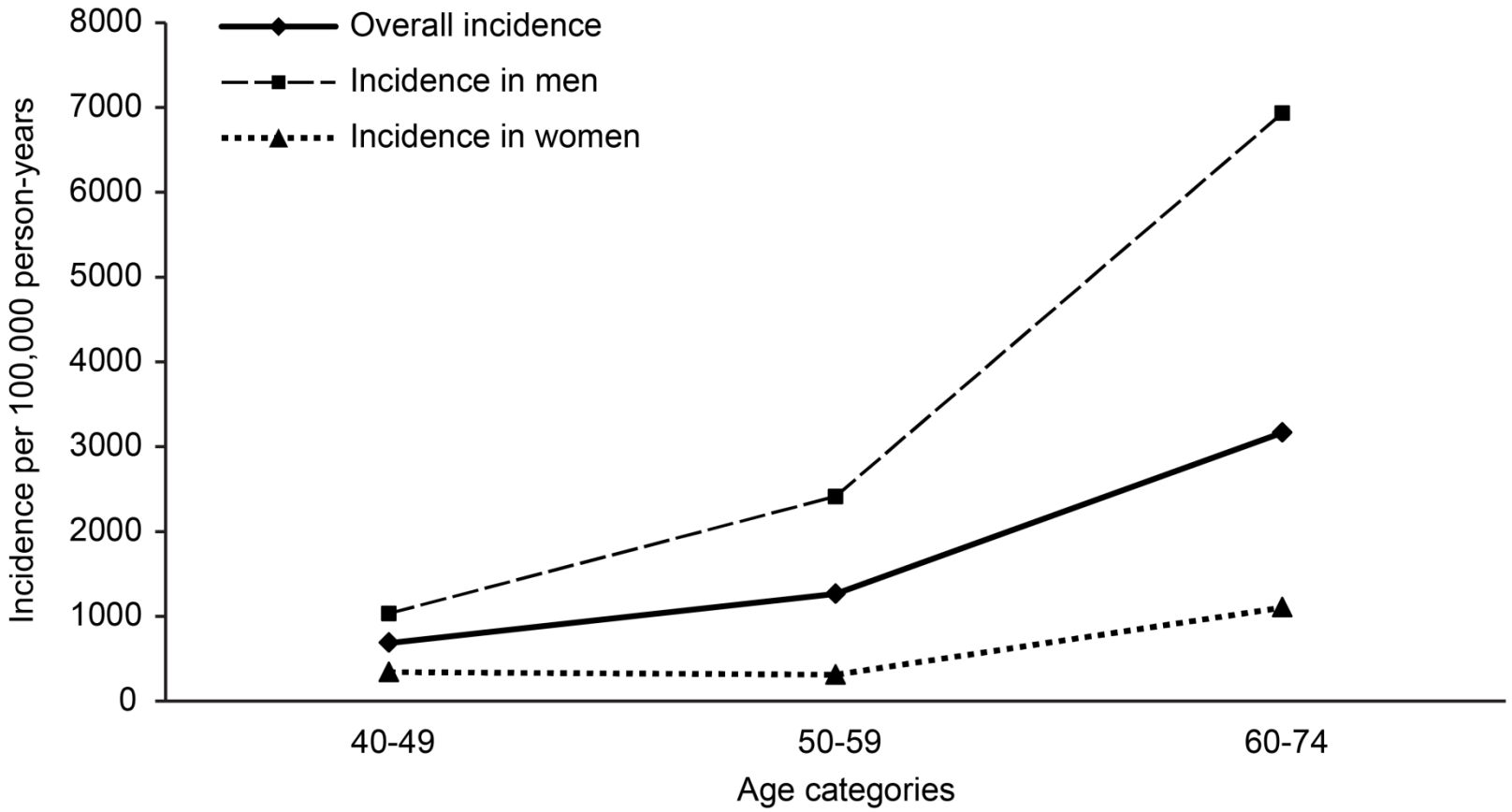
* '13 ~ , 6차 추적조사(7기) 진행중

표준화발생률



Unpublished Data using Ansung and Ansan Kohort

표준화발생률



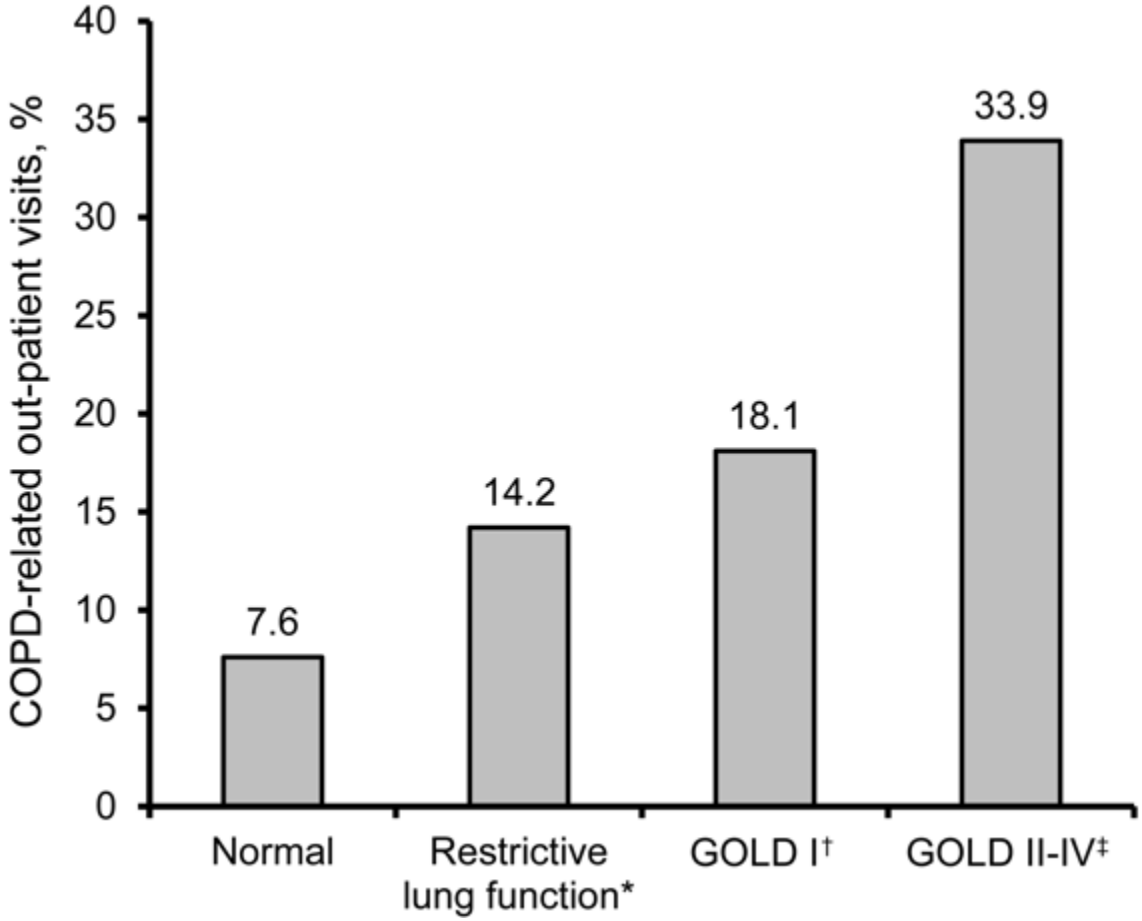
Unpublished Data using Ansung and Ansan Kohort

발생위험요인

Risk factors	Adjusted Relative Risk[a]	95% CI
Age		
< 60 yr	Reference	Reference
≥ 60 yr	2.52	2.23-2.85
Sex		
Female	Reference	Reference
Male	2.02	1.64-2.48
Smoking history		
Never smoker	Reference	Reference
1-19 pack-years	1.78	1.44-2.20
≥20 pack-years	2.54	2.09-3.08
Income		
4th quartile	Reference	Reference
3rd quartile	1.29	1.01-1.65
2nd quartile	1.56	1.26-1.93
1st quartile	2.03	1.64-2.50

Unpublished Data using Ansung and Ansan Kohort

의료이용 (2001년 KNHANES 코호트)



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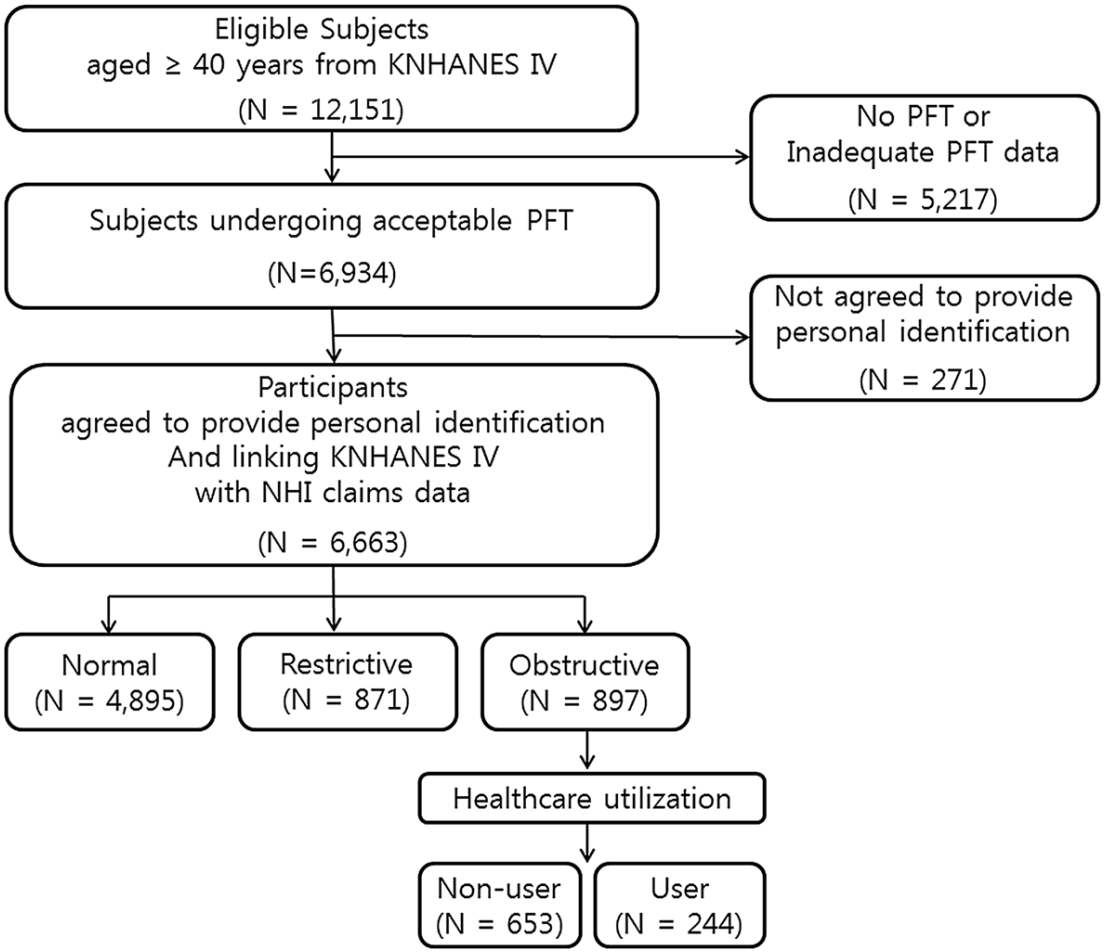
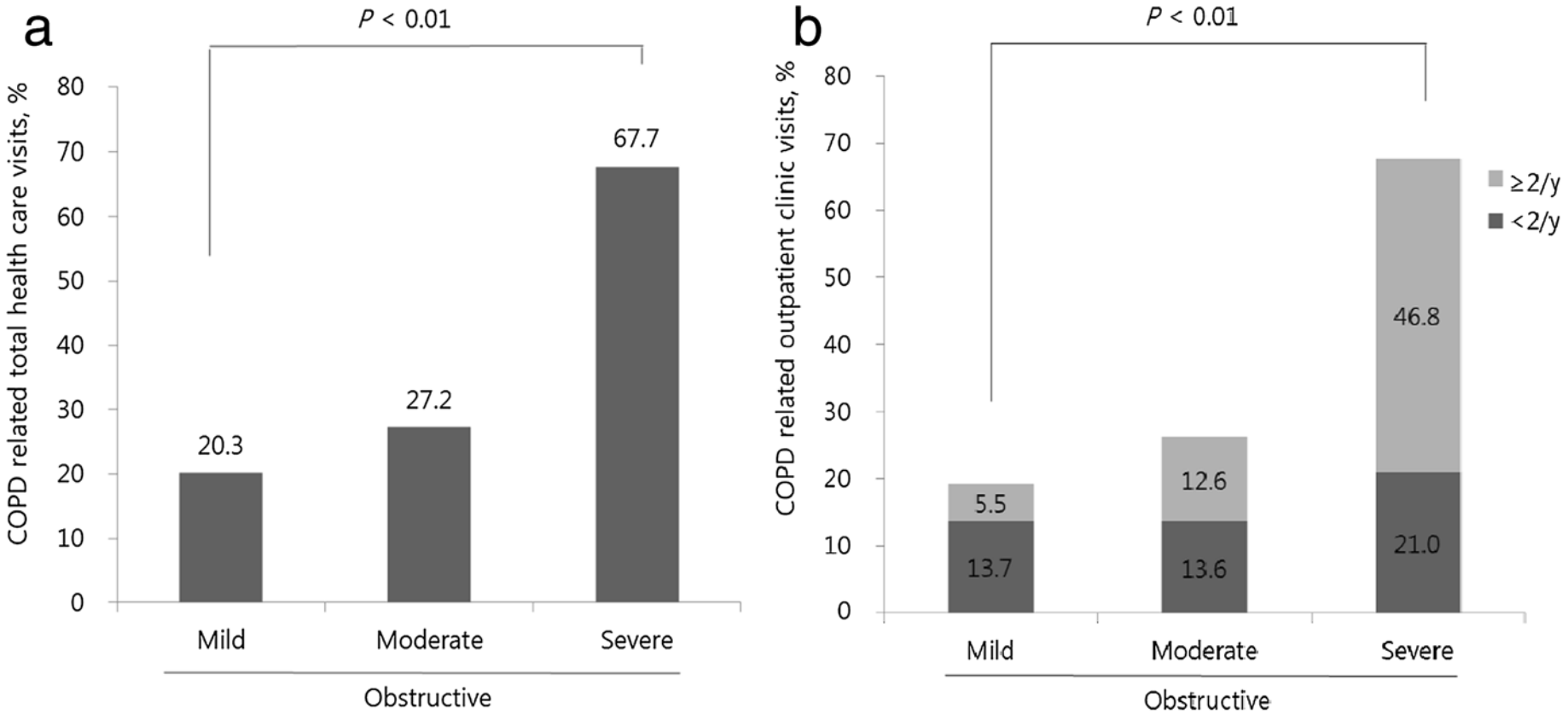
의료이용 (KNHANES IV 코호트)



BMC Pulmonary Medicine 2014, 14:27

의료이용 (KNHANES IV 코호트)



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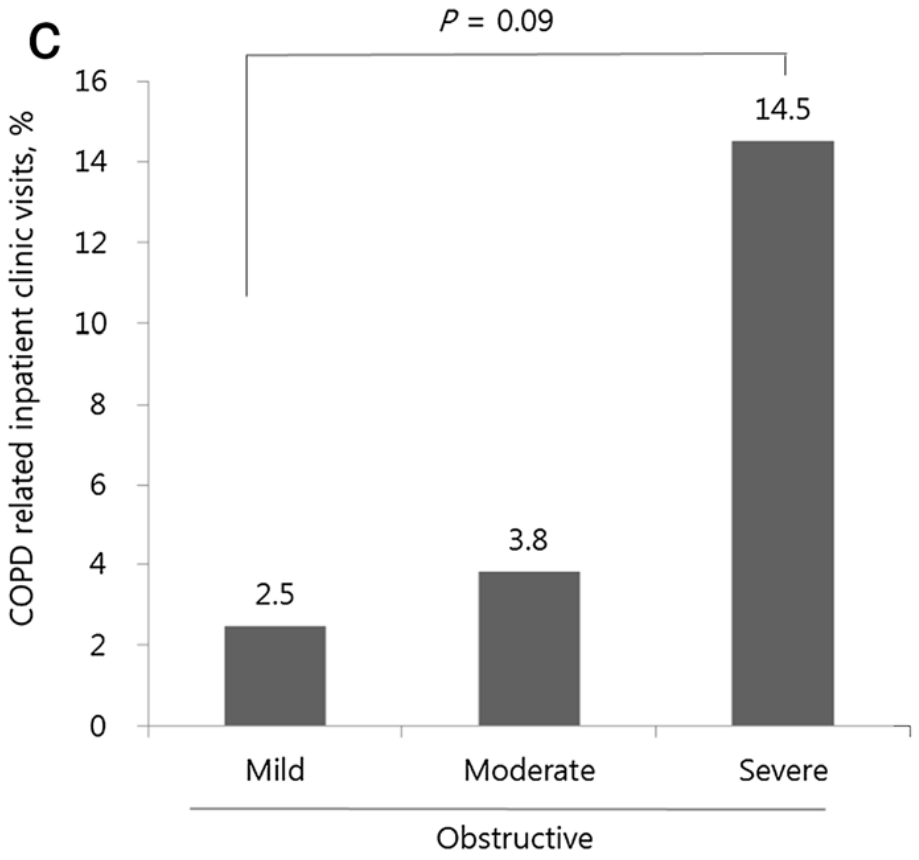

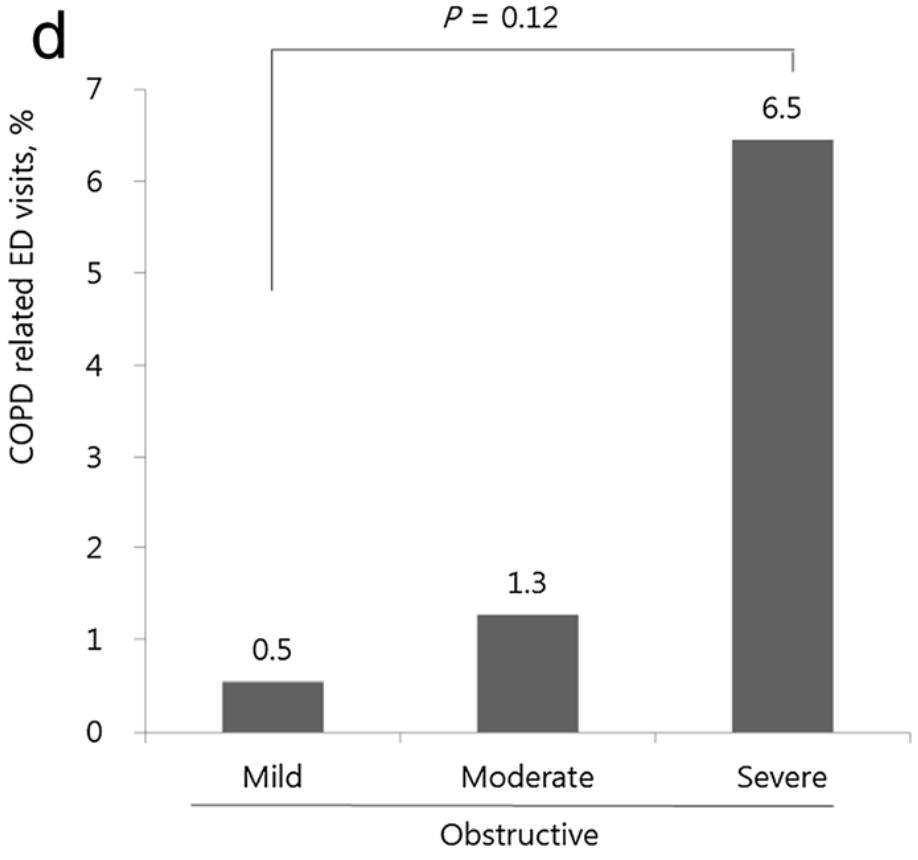

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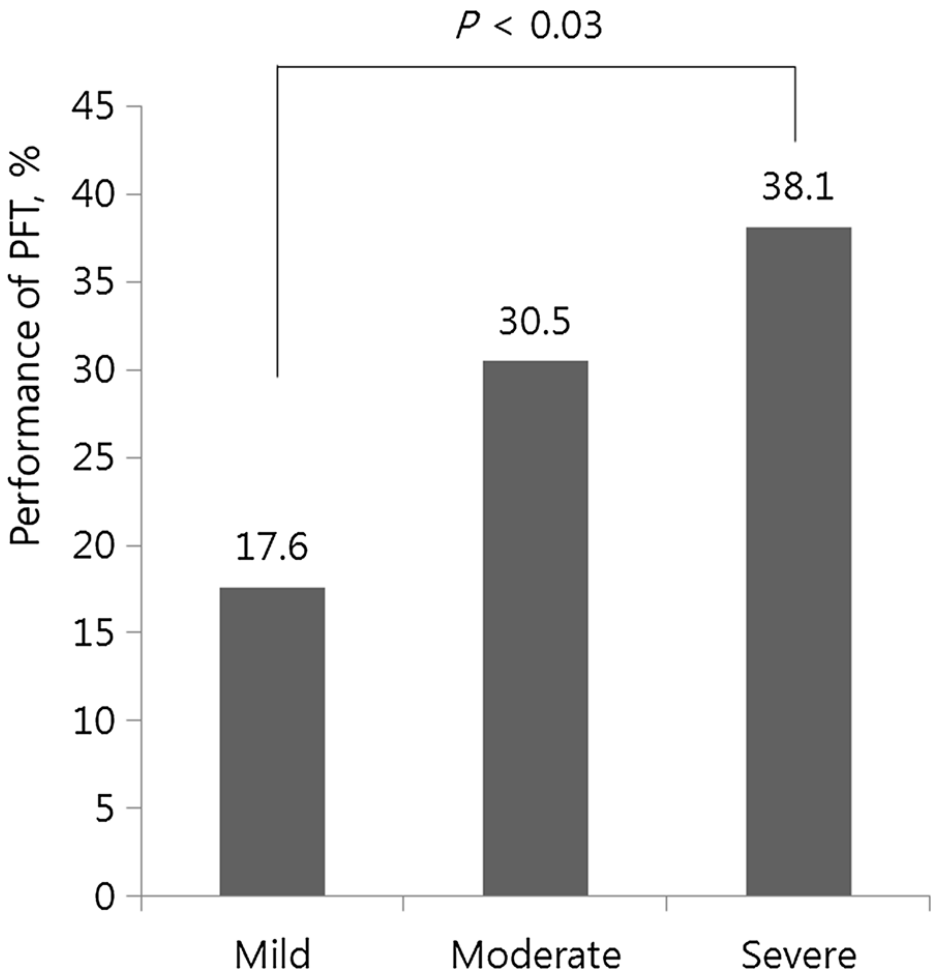
폐기능검사 시행률 (KNHANES IV 코호트)



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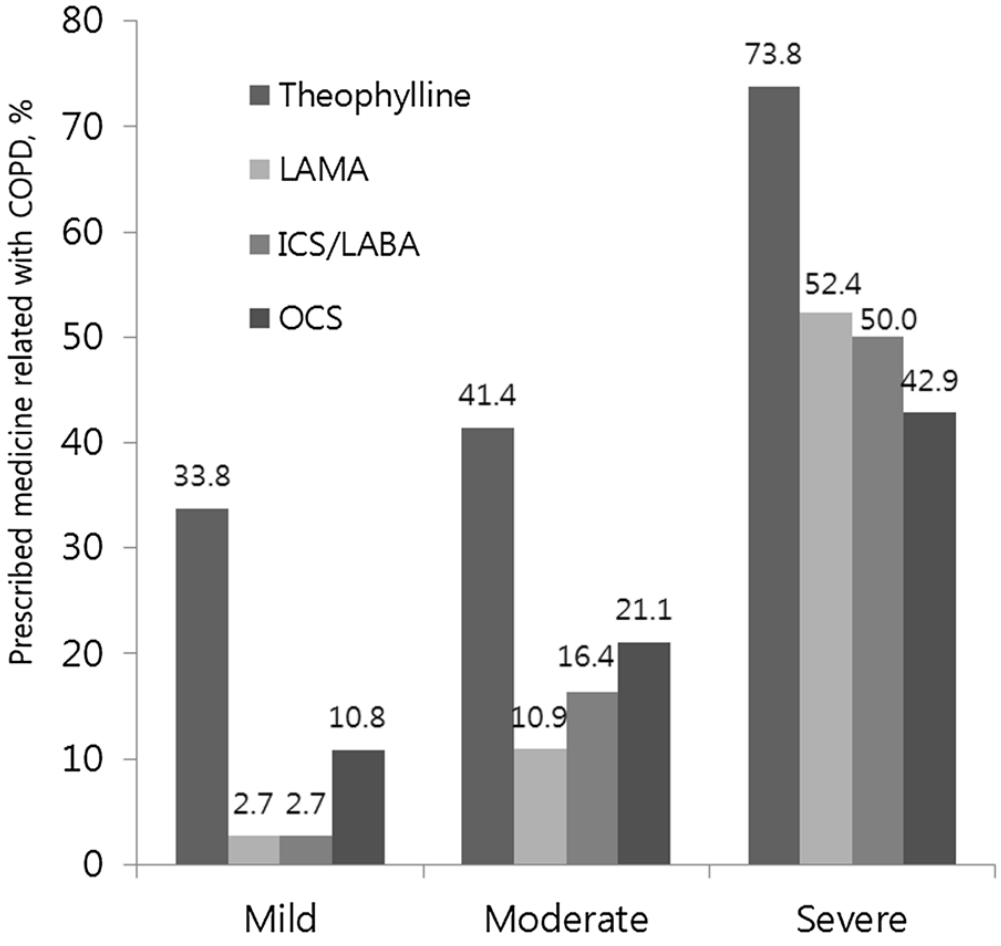
투약내역 (KNHANES IV 코호트)



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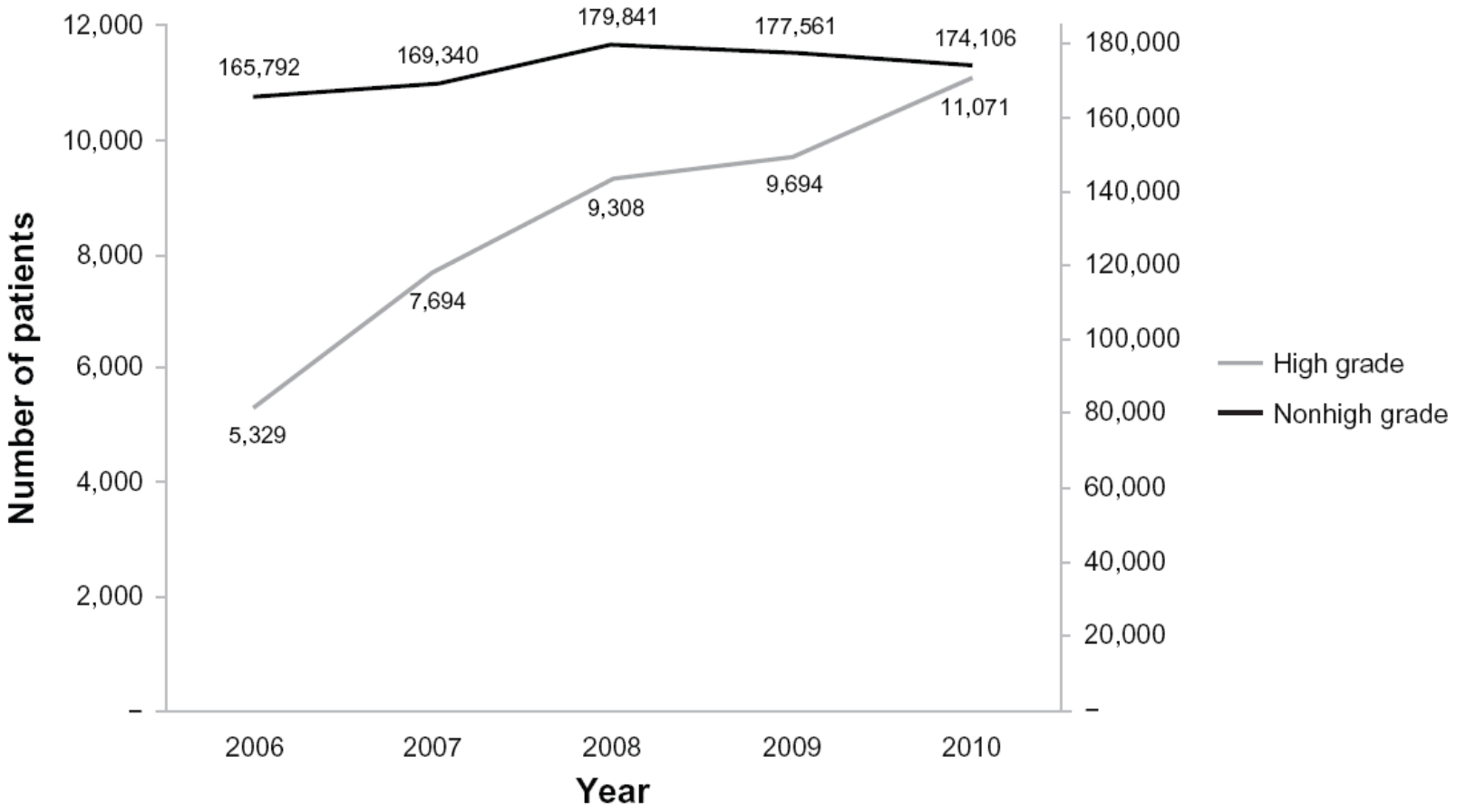
의료이용 (건강보험Data)



International Journal of COPD 2013:8 1–8

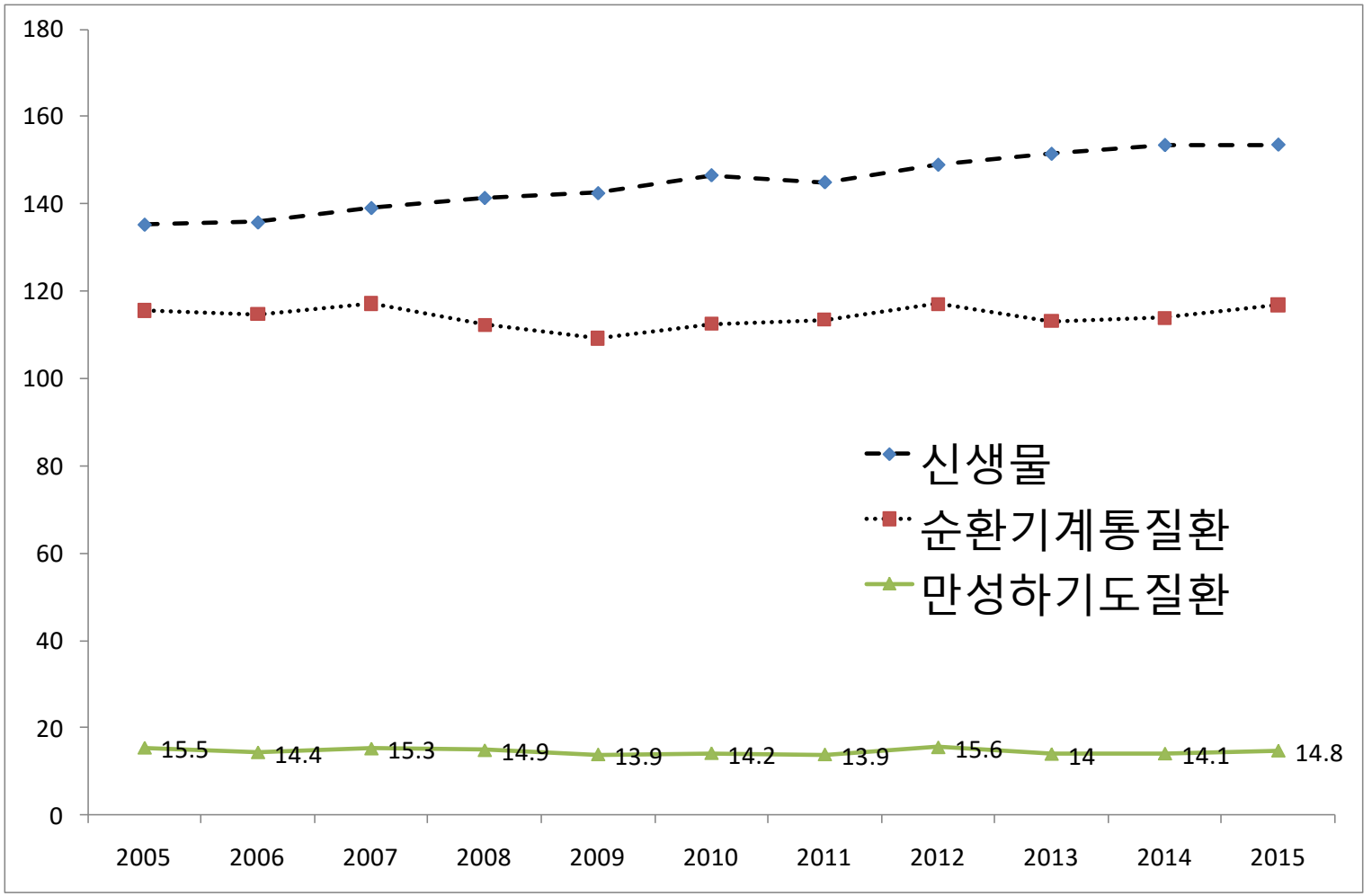
의료이용 (건강보험Data)

Table 2 Health care resource utilization of COPD patients according to grade of disease

	High grade COPD (n = 9,694)	Nonhigh grade COPD (n = 177,561)	*P* value
History of hospitalization (yes)†	5,331 (55.0%)	37,564 (21.2%)	<0.001
History of ICU admission (yes)†	74 (0.8%)	587 (0.3%)	<0.001
History of ER visit (yes)	3,363 (34.7%)	15,399 (8.7%)	<0.001
Number of visits (%)			<0.001
0 visit	6,331 (65.3%)	162,162 (91.3%)	
1–2 visits	2,855 (29.5%)	14,379 (8.1%)	
3≥ visits	508 (5.3%)	1,020 (0.6%)	
Last year hospitalization (yes)*	2,969 (30.6%)	20,654 (11.6%)	<0.001
Last year ER visit (yes)	1,751 (18.1%)	8,658 (4.9%)	<0.001
Used days			
Outpatient services	9.6 ± 9.8	7.4 ± 8.6	<0.001
Inpatient services	30.0 ± 38.1	24.6 ± 35.8	<0.001
Total used days	26.0 ± 33.8	12.5 ± 21.0	<0.001

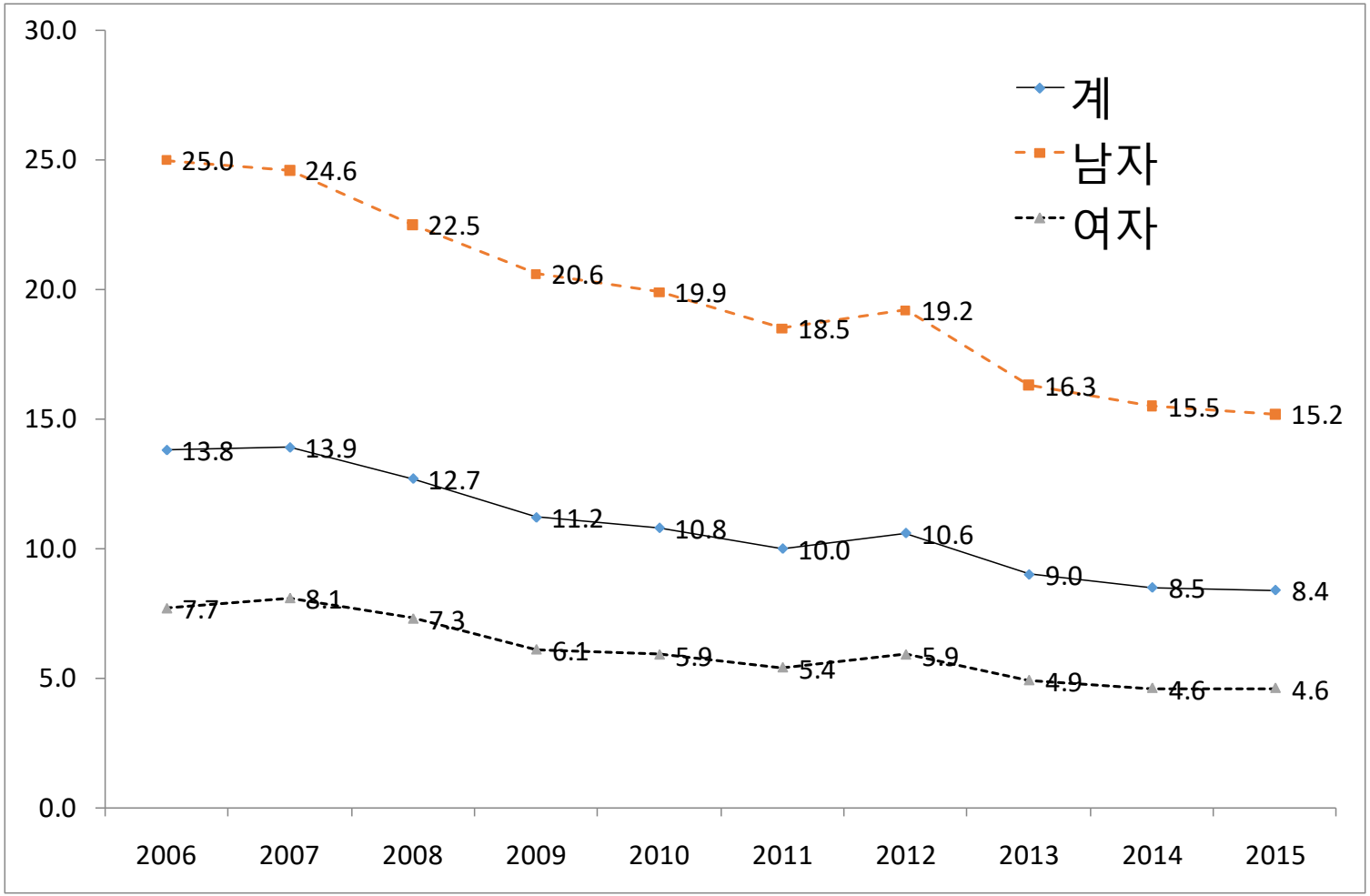
International Journal of COPD 2013:8 1–8

연도별 인구 10만명 당 사망률



만성하기도질환의 사망률: 출처 통계청

연도별 성별 연령별 표준화 사망률



만성하기도질환의 사망률: 출처 통계청

결 론

질문 1. 현재 COPD 환자는 얼마나 많고, 어떤 경우에 많은가?

- 40세 이상 인구의 13%로 남성에서는 20% 여성에서는 8% 전후가 될 것으로 추정함.
- 65세 이상, 남성 및 흡연자에서 많음.

질문 2. COPD 환자는 증가하고 있고, 앞으로도 증가할 것인가?

- 지난 10년간 증가하고 있으나 이는 인구구조의 노령화에 의한 것으로 추정되며 앞으로도 더욱 증가할 것임.

결 론

질문 3. COPD 환자는 얼마나 많이 발병하고, 어떤 경우에 잘 생기는가?

- 아직은 자료가 부족하여 더 많은 연구가 필요함.

질문 4. COPD는 환자는 얼마나 많이 병원을 이용하는가?

- 외래 이용이 적고 지침에 따른 치료가 이루어 지 않고 있음.

질문 5. COPD는 환자는 얼마나 많이 사망을 하는가?

- 인구 10만 명 당 사망률은 15명 전후로 지난 10년간 차이가 없으나 표준화 사망률은 감소하고 있음.

제 언

- 유병률에 대한 연구는 많이 이루어졌음
- 코호트 연구 결과가 부족하여 발생률과 추후 발생에 대한 정확한 예측이 힘듬.
- 아직 의료이용이 적고, 지침에 따른 치료가 잘 이루어지지 않고 있음.
- 기존 코호트의 추적 관찰연구 및 여러 데이터베이스의 연계연구가 필요함.