RWD 172

Sex Differences in Characteristics and Treatment Patterns of Patients with Sleep Disorders in South Korea

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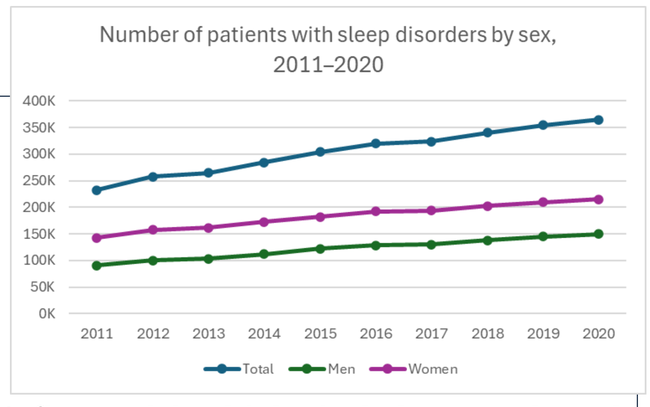
BACKGROUND

Sleep disorders (SD)

- Increasing major **clinical and public health concern**
- Steadily increasing number of patients with SD in both sexes, remaining higher among women
- **In South Korea, SD patients nearly doubled from 2011 to 2020**

Source: HIRA (2011–2020)



Sex differences

- Well recognized in sleep health and influenced by **biological, hormonal, and psychosocial** factors

→ may lead to variations in healthcare utilization and treatment approaches between men and women

- However, Real-world data exploring sex-based differences in SD diagnosis, treatment patterns, and outcomes remain limited.

OBJECTIVES

- To examine sex differences in demographics and healthcare utilization among patients with SD in South Korea.

METHODS

Study Design and Data Source

- Retrospective cross-sectional study
- **2018 HIRA-NPS (Health Insurance Review and Assessment Service-National Patient Sample)**

→ represents approximately 3% of the entire Korean population

→ includes patients' demographic characteristics, medical diagnoses, treatments, healthcare utilization, and costs based on **national health insurance claims.**

Study Population

Inclusion Criteria

- Patients with ≥2 claims with a primary diagnosis of sleep disorder (ICD-10 code: **F51**)

Exclusion Criteria

- Patients with **only a single visit** were excluded to improve diagnostic validity.

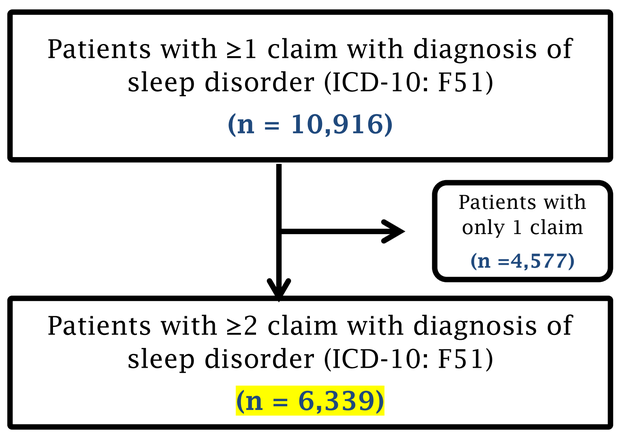


FIGURE 1. Flow of study population

Variables

Demographic variables

- Sex
- Age group
- Type of insurance.

Clinical variables

- Charlson Comorbidity Index (CCI) ,
- Sleep Disorder-related comorbidities (Hypertension, anxiety, depressive disorders)

Healthcare utilization variables

- Type and number of medical visits
- Type of medical service (Western vs. Korean)
- Annual medical expenditures (1 USD ≈ 1,350 KRW).

Statistical Analysis

- Descriptive analysis by **sex**
- Comparative Analysis

✓ Continuous variables
→ T-tests
→ Wilcoxon rank-sum test

✓ Categorical variables
→ Chi-square tests.

- *P-value* < 0.05 was considered statistically significant.
- Analyses were conducted using SAS version 9.4

RESULTS

Sex and Age Distribution of Patients

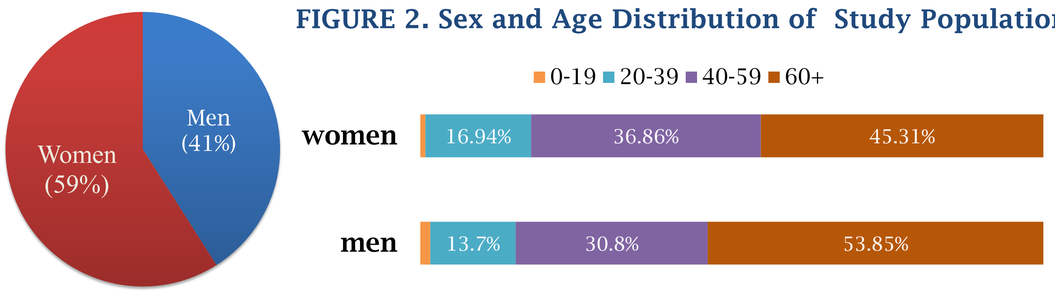


FIGURE 2. Sex and Age Distribution of Study Population

Insurance Coverage

- National Health Insurance (NHI) : Total 91.7%, Men 89.5%, Women 93.2%
- Medical aid (MA) : Total 8.0%, Men 9.7% vs. women 6.8%
- Veterans : total 0.3%, Men 0.8%, Women 0%

→ Significant sex difference in insurance type distribution (p < 0.001)

RESULTS

CCI(Charlson Comorbidity Index)

- Higher in men (**1.3**) than women (**1.1**), $p < 0.001$
- CCI ≥ 3 more frequent in men (18.9%) than women (12.7%) , $p < 0.001$

→ **higher comorbidity burden**

	total		men		women		P-Value
CCI Score	Mean	SD	Mean	SD	Mean	SD	
	1.2	1.5	**1.3**	**1.7**	**1.1**	1.4	<0.001
CCI Group	N	%	N	%	N	%	<0.001
0	2712	42.8	1054	40.6	1658	44.3	
1	1739	27.4	666	25.6	1073	28.7	
2	922	14.5	386	14.9	536	14.3	
≥3	966	15.2	**492**	**18.9**	**474**	**12.7**	

Table1. Comparison of Charlson Comorbidity Index (CCI) by Sex

SD-related comorbidities

	Total		men		women		P-Value
Comorbidities	N	%	N	%	N	%	
Hypertension (HTN)	2054	32.4	**923**	**35.5**	1131	30.2	<0.001
Anxiety Disorder(AD)	1925	30.4	762	29.3	**1163**	**31.1**	**0.1345**
Depressive Disorder(DD)	1939	30.6	768	29.6	**1171**	**31.3**	**0.1391**

Table2. Comparison of SD-Related comorbidities by Sex

- HTN : **more prevalent in men (35.5%)** than women (30.2% , $p < 0.001$)
- Psychiatric comorbidities (AD, DD) : **Slightly more common in women** but not statistically significant → **Further studies needed**

Healthcare Utilization and Costs

	men		women		P-Value	
	N	%	N	%		
Type of Medical Service					<0.001	
Korean medicine	378	2.0	**803**	**3.0**		**Both sexes mainly used WM KM use higher in women**
Western medicine	18276	98.0	25620	97.0		
Type of medical visit					<0.001	
Inpatient	**49**	**0.3**	14	0.1		**Hospitalization rare, but higher in men**
Outpatient	18605	99.7	26409	99.9		

Table3. Type of Medical Services and Visits for Sleep Disorders by Sex

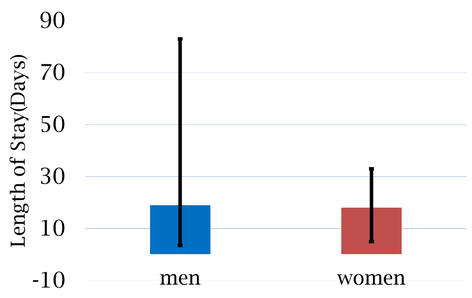


Figure 3. Sex Differences in LOS

Length of Stay (LOS)

Mean LOS

- Men 56.3 (±79.1) days
- Women 18.6 (±15.0) days

Median LOS (Figure 3)

19.0 [3.0-83.0] days vs. 18.0 [5.0-33.0] days

→ IQR wider in men, indicating **greater variability**

Annual Medical Expenditure

→ **Despite some differences, annual medical expenditures were comparable** between sexes.

	Total	Men	Women	P-Value
Mean ± SD	375.7 ± 962.5	384.0 ± 1125.8	369.6 ± 830.5	
Median [Q1–Q3]	162.2 [69.5–366.1]	164.2 [68.5–365.9]	160.7 [70.0–367.9]	0.9983

Table 4. Annual SD -Related Medical Costs(USD) per Patient by Sex

DISCUSSION

- **SD were more prevalent in women** but patterns of HRCU differed by sex.
- **Men had a greater comorbidity and showed higher hospitalization** and LOS.
- However, annual medical expenditure per patient were comparable between sex

CONCLUSIONS

- This study identifies sex-based differences in the clinical and healthcare profiles of SD patients, suggesting the need for tailored care and health policy.

CONFLICT OF INTEREST/ACKNOWLEDGEMENT

- All authors declare that they have no conflicts of interest.
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