

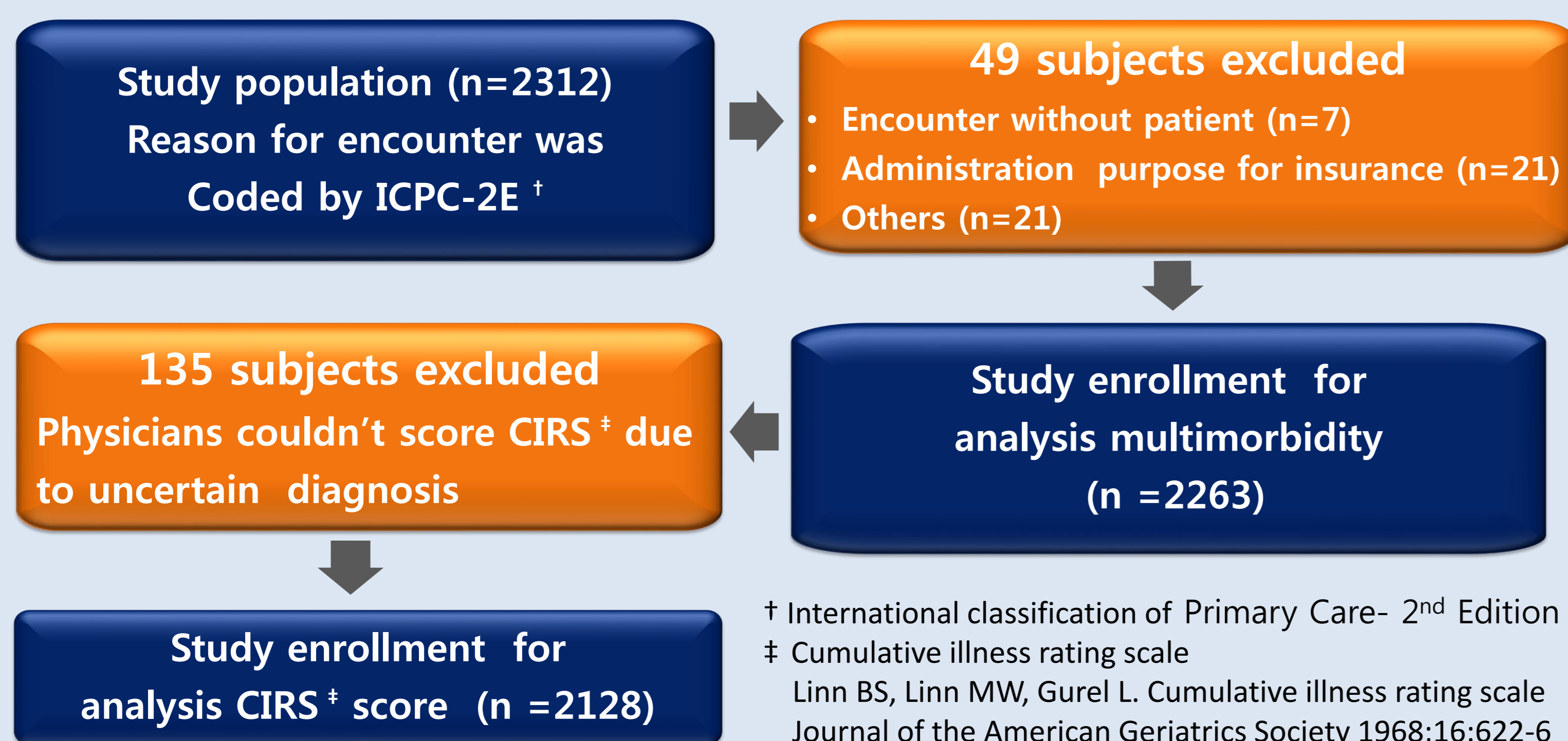
## OBJECTIVE

Multimorbidity means several concurrent medical conditions within one person. Multimorbidity is common in aging society. This study was aimed to estimate prevalence of multimorbidity and identify common comorbidities in primary care settings.

## METHODS

### 1. STUDY SUBJECTS

Patients who visited out-patient department of family medicine in Samsung Medical Center



### 2. STUDY PERIODS

Each one week of April, July, October 2012 and January 2013

### 3. DATA COLLECTION, MEASUREMENTS

- Case report forms by physicians, Medical records review
- Multimorbidity burden was measured by counting number of health problems and scoring Cumulative illness rating scale.

### 4. STATISTICAL ANALYSIS

Analysis of variance , Kruskal-Wallis test

Table 3. Mean CIRS score by Age and Sex

|                      | 15-40 year          | 41-64 year          | ≥65 year            | P-value <sup>†</sup> |
|----------------------|---------------------|---------------------|---------------------|----------------------|
| Male                 | 2.28<br>(2.01-2.58) | 3.24<br>(3.06-3.42) | 3.60<br>(3.30-3.88) | < 0.01               |
| Female               | 1.81<br>(1.64-1.99) | 2.90<br>(2.75-3.05) | 3.66<br>(3.44-3.89) | < 0.01               |
| P-value <sup>‡</sup> | < 0.01              | < 0.01              | 0.75                |                      |

† P-value from Kruskal-Wallis test for mean difference of all three age groups both male and female  
‡ P-value from T-test for mean difference of CIRS between male and female

Table 4. TOP 10 most common health problems by category

| Consulted chronic health problem |  | Frequency (%) |       |
|----------------------------------|--|---------------|-------|
| K86                              | Hypertension uncomplicated             | 23.5          | 23.5* |
| T93                              | Lipid disorder                         | 16.0          | 39.5  |
| T90                              | Diabetes non-insulin dependent         | 11.2          | 50.8  |
| L95                              | Osteoporosis                           | 3.8           | 54.6  |
| D03                              | Heart burn                             | 2.3           | 56.9  |
| B80                              | Iron deficiency anemia                 | 2.1           | 59.0  |
| T86                              | Hypothyroidism/Myxoedema               | 2.1           | 61.1  |
| T99                              | Endocrine/metab/nutrit.dis.other       | 2.0           | 63.1  |
| T82                              | Obesity                                | 1.7           | 64.8  |
| N01                              | Headache                               | 1.3           | 66.1  |
| Consulted acute health problems  |  | Frequency (%) |       |
| A44                              | Preventive immunisations / Medications | 9.0           | 9.0*  |
| A98                              | Health maintenance / Prevention        | 8.3           | 17.4  |
| R05                              | Cough                                  | 7.5           | 24.9  |
| N01                              | Headache                               | 5.4           | 30.3  |
| R21                              | Throat Symptom / Complaint other       | 4.5           | 34.8  |
| A04                              | Weakness / Tiredness general           | 3.4           | 38.2  |
| D07                              | Dyspepsia / Indigestion                | 3.4           | 41.7  |
| N17                              | Vertigo / Dizziness                    | 3.4           | 45.1  |
| R08                              | Nose Symptom /Complaint other          | 3.3           | 48.4  |
| P06                              | Sleep disturbance                      | 3.1           | 51.5  |

\* Cumulative frequency

## RESULTS

Mean age of outpatients was 53.6 years in both male and female. Prevalence of multimorbidity in 15- to 40-year of age, 41- to 64- year of age, more than 65-year of age were 36.4%, 69.9%, 70.2% in male and 35.2%, 62.2%, 76.1% in female, respectively (Table 1) .

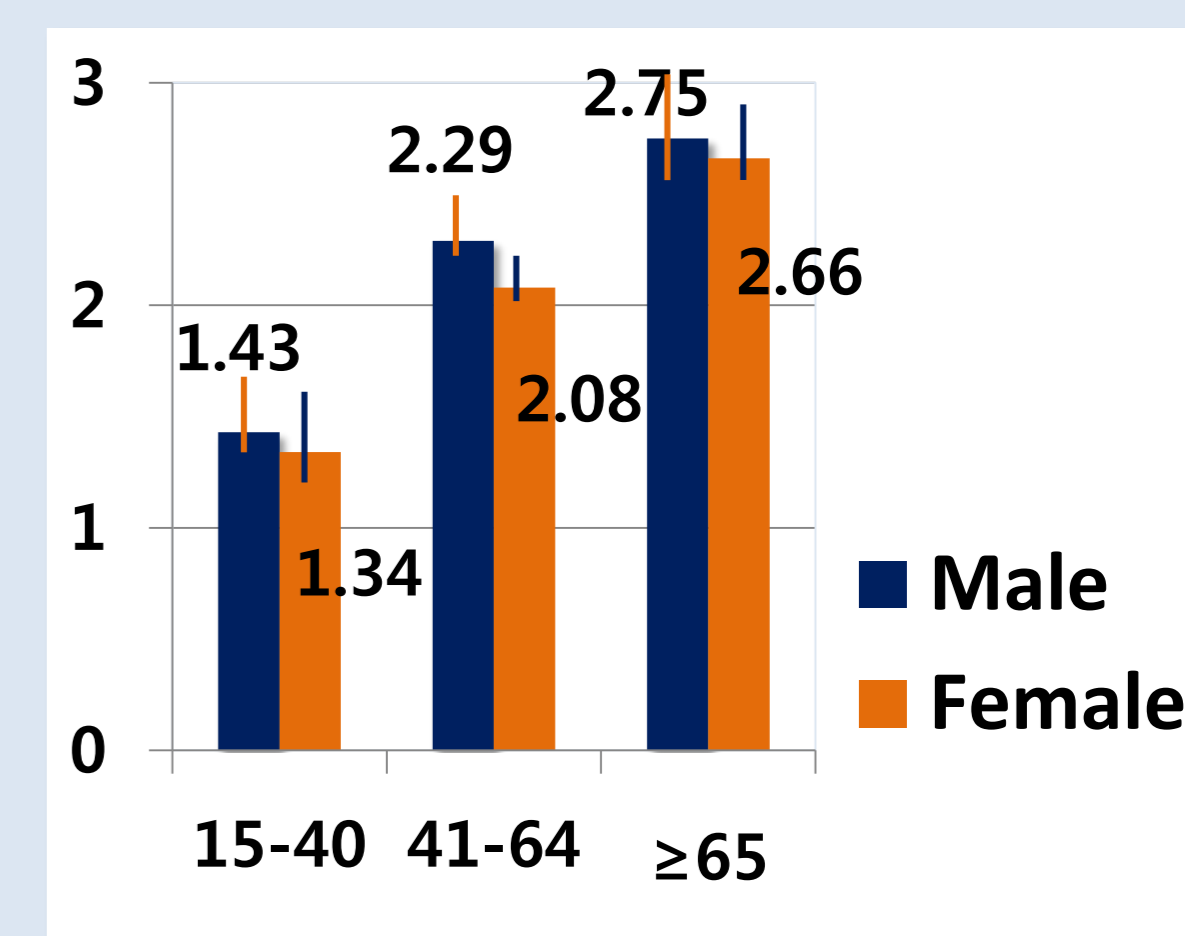
Table 1. Prevalence of multimorbidity

|                           |        | 15-40 year                | 41-64 year  | ≥ 65 year   |
|---------------------------|--------|---------------------------|-------------|-------------|
| Sex                       | Male   | 177 (35.8% <sup>†</sup> ) | 476 (40.6%) | 240 (40.3%) |
|                           | Female | 317 (64.2%)               | 697 (59.4%) | 356 (59.7%) |
| Number of health problems | 0 or 1 | 292 (59.1% <sup>‡</sup> ) | 348 (29.7%) | 134 (22.5%) |
|                           | 2      | 115 (23.3%)               | 367 (31.3%) | 136 (22.8%) |
|                           | 3      | 51 (10.3%)                | 258 (22.0%) | 137 (23.0%) |
|                           | 4      | 20 (4.0%)                 | 117 (10.0%) | 94 (15.8%)  |
|                           | ≥5     | 16 (3.2%)                 | 83 (7.0%)   | 95 (15.9%)  |

† Percentage of male and female in each age group

‡ Percentage of each number of health problems in each age group

Figure 1. Mean number of health problems by age and sex



66% of patients addressed more than 2 health problems and only 15% of them consulted 1 health problem with their physician. Approximately 67% of them consulted all health problems they had during one visit (Table 2) .

Table 2. Addressed health problems during one visit

| Number of health problems | Number of addressed health problems |       |       |       |       |
|---------------------------|-------------------------------------|-------|-------|-------|-------|
|                           | 0 or 1                              | 2     | 3     | 4     | ≥5    |
| 0 or 1 (n=774)            | 100%                                |       |       |       |       |
| 2 (n=618)                 | 19.9%                               | 80.1% |       |       |       |
| 3 (n=446)                 | 15.2%                               | 18.4% | 66.4% |       |       |
| 4 (n=231)                 | 10.4%                               | 15.6% | 26.0% | 48.1% |       |
| ≥5 (n=194)                | 6.2%                                | 8.2%  | 13.4% | 21.1% | 51.0% |

Table 5. Common comorbidities of chronic health problems

| Chronic health problem             | Most common comorbidities            | Frequency (%) |
|------------------------------------|--------------------------------------|---------------|
| K86 Hypertension uncomplicated     | T93 Lipid disorder                   | 17 17*        |
|                                    | T90 Diabetes non-insulin dependent   | 12 29         |
|                                    | L95 Osteoporosis                     | 3 32          |
|                                    | D97 Liver disease NOS                | 3 35          |
|                                    | Y85 Benign prostatic hypertrophy     | 3 38          |
| T90 Diabetes non-insulin dependent | T93 Lipid disorder                   | 25 25         |
|                                    | K86 Hypertension uncomplicated       | 25 50         |
|                                    | D97 Liver disease NOS                | 2 52          |
|                                    | T82 Obesity                          | 2 54          |
|                                    | L95 Osteoporosis                     | 2 56          |
| T93 Lipid disorder                 | Y85 Benign prostatic hypertrophy     | 2 58          |
|                                    | K86 Hypertension uncomplicated       | 23 23         |
|                                    | T90 Diabetes non-insulin dependent   | 11 34         |
|                                    | L95 Osteoporosis                     | 4 38          |
|                                    | T99 Endocrine/metab/nutrit.dis.other | 3 41          |
| L95 Osteoporosis                   | D97 Liver disease NOS                | 3 44          |
|                                    | K86 Hypertension uncomplicated       | 14 14         |
|                                    | T93 Lipid disorder                   | 14 28         |
|                                    | T90 Diabetes non-insulin dependent   | 5 33          |
|                                    | P03 Feeling depressed                | 3 36          |
|                                    | P06 Sleep disturbance                | 3 39          |

\* Cumulative frequency

## CONCLUSION

This study shows high prevalence of multimorbidity with increasing age in primary care settings. Further study is required to explain the mismatch between health problems patient had and health problems addressed by physician.