

국민건강영양조사를 이용한 동반질환 및 다중이환의 패턴분석

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Pattern Analysis of Comorbidity and Multimorbidity in Reference to the 7th KNHANES

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● 요약 ●

This study investigated patterns of co-occurring chronic diseases and disorders in old ages. For this purpose, we utilized data from the Korean National Health and Nutrition Examination Survey for 3,734 old adults aged over 65. Data on 18 conditions were obtained, and analyzed using network analysis, associated rule mining, cluster analysis. The majority of participants has multimorbidity. Association rules analysis reveals unexpected comorbidities with high lift and confidence. Also, some morbidity clusters were present. Diabetes and emotional disorder had the greatest comorbidity and represent complex comorbid conditions. Old age is characterized by a complex pattern of multimorbidity and comorbidity. In conclusion, particular combinations of morbidities were very prevalent and will be needed to policy of health care interventions for old ages.

키워드: Comorbidity, KHANES, Multimorbidities, Network Analysis

I. Introduction

The tendency of co-occurring chronic disease and disorders increases as old ages. This has significant and obvious effects on the quality of life, hospitalization, function, and mortality of old ages [1]. Most research on multimorbidity has utilized large health system databases to determine the patterns of morbidities that cluster together and provide insights into disease pathogenesis [2]. The aims of this study were to investigate patterns of co-occurring chronic diseases and disorders in old ages.

II. Material and Method

This is the section where the authors describe the methods used at the level of detail necessary. The fifth Korean National

Health and Nutrition Examination Survey (KNHANES) was conducted for 3 years from 2016 to 2018, and 3,734 old adults aged over 65 sampled participated in this study.

Statistical analysis were performed using network analysis, association rule mining, and cluster analysis. Analysis tools used Gephi (version 0.9.1), R 4.0.3 and R-studio (version 0.99).

III. Results

Descriptive statistics of multimorbidity data were present. 80% of participants had two or more morbidities. Network analysis of multimorbidities in older ages. The network is dominated by diabetes and hypertension. In association rule results, diabetes and emotional disorder with greatest lifts.

Table 1. Major Association rules of conditions

Rule		Support	Confidence	Lift
Diabetes	→ Emotional Disorder	0.17	0.78	1.81
Diabetes	→ Hypertension	0.17	0.66	1.75
Hypertension	→ metabolic syndrome	0.09	0.54	1.56
Dislipidemias	→ low-HDL	0.09	0.46	1.52
Diabetes	→ abdominal obesity	0.05	0.45	1.46
Diabetes	→ obesity	0.05	0.45	1.46
metabolic syndrome	→ low-HDL	0.03	0.44	1.21
Hypertension	→ obesity	0.03	0.42	1.21

IV. Conclusions

Old age is characterized by a complex pattern of multimorbidity and comorbidity. In the future study, other researches or health care policy of finding interventions should target clusters of morbidities rather than a single disease outcome.

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