

Study on the Reserch Trend of Korean Academy of Community Health Nursing Using Text Mining

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Abstract

Purpose: The Korean Academy of Community Health Nursing founded in 1971, is an academic research organization with approximately 710 nursing scholars. Topic analysis was applied using the title of the paper in the Journal of Community Nursing.

Methods: This study applied topic analysis using 294 paper titles published from 2017 to 2022 in the Journal of Korean Academy of Community Health Nursing published by the academic society. In particular, in order to compare research trends before and after Corona, topic analysis was conducted by dividing the period from 2017 to 2019 and 2020 to 2022. To facilitate interpretation, the correlation rules for each selected topic were applied to provide some information. A better interpretation was derived.

Results: As a result of this analysis, 5 and 6 topics were selected as research topics before and after Corona, respectively. As a result of analyzing these topics, many topics related to 'Youth Online Survey' and 'Mediation Effect Analysis' appeared before Corona. In the post-corona period, many topics related to 'women's health care' and 'psychological health care' appeared.

Conclusion: Compared to pre-COVID, post-COVID research has expanded from health studies for the elderly to adolescents, women, and the elderly, and psychological health management that deals with depression and stress has been expanded.

Key words: Text mining, Topic analysis, Trends analysis, Association rule

I. Introduction

Text mining is a statistical method that aims to extract and process meaningful information from a large amount of text on structured or unstructured data(Hotho, Numberger and Paaß, 2005). Due to the recent development of information processing technology, data mining analysis techniques for analyzing text data among unstructured data are gradually expanding, and text mining techniques are emerging to analyze them(Shin, 2016).

Therefore, this study analyzes the key words in the titles of papers for each of the three years before Corona (2017 ~ 2019) and after Corona (2020 ~ 2022) and investigates the research trend of Korean Academy of Korean Academy of Community Health Nursing by identifying the relationship between words. Through this, we will help you understand the current status and research trends in the field of community nursing, and suggest the direction of the future development of Korean Academy of Community Health Nursing.

II. Methods

1. Study design

This study is a literature review study conducted to identify the research trends before and after Corona as a result of extracting the titles of papers published in the Journal of Korean Academy of Community Health Nursing before Corona (2017 ~ 2019) and after Corona (2020 ~ 2022) and applying topic analysis in data mining. In 1998, Papadimitriou et al. proposed the Latent Semantic Indexing (LSI) model, and now the Latent Dirichlet Allocation (LDA) developed by Blei, Ng, and Jordan (2002) is the most commonly used (Kim NK et al., 2017).

2. Subject, Ethical considerations and preparations of the researcher

This study was approved by the Bioethics Committee of D University(DIRB-202403-HR-W-08) prior to data collection to protect the ethical aspects of research participants, and was published in the Journal of Community Nursing before Corona (2017~2019) and after Corona (2020~2022), and the title of the study was extracted from the Journal of Korean Academy of Community Health Nursing(<https://kchn.or.kr>) and a total of 294 paper titles were examined.

III. Results

1. Analysis of the frequency of paper titles before and after COVID-19

First, topic analysis was applied to 150 paper titles from 2017 to 2019 and 144 paper titles from 2020 to 2022. The frequency analysis of the most frequently used terms (more than 5 times) and the resulting visual representation of the word cloud are presented in Table 1 and Figure 1. The most frequently used terms were elderly (43 times) before COVID-19 and impact (35 times) after COVID-19.

2. Analysis of association rules of key words by topic of paper title before and after COVID-19

Next, in order to make it easier to interpret the topics obtained from the topic analysis, the representative association rules are presented in Table 5 through the association rule analysis of key words for each topic. The association rules presented here allow for a more meaningful interpretation of the content of the topic.

IV. Conclusions

Beyond the fragmentary study of the Journal of Korean Academy of Community Health Nursing, the topic analysis was divided into the period of 2017~2019 and the period of 2020~2022 to analyze the research trends before and after the coronavirus, and a better interpretation was confirmed by applying the relevance rules for each selected topic for easy interpretation. This study

showed the time and economic cost savings effect of data analysis through text mining techniques, and the CaoJuan method, which does not show monotonous decrease or increase, was used to determine the number of topics.

References

- Kim, NK et al. 2017. Trends in Text Analytics Technology and Utilization. *Journal of the Korean Telecommunications Society*. 42(2): 471-492.
- Hotho A, Numberger A and Paaß G. 2005. A brief survey of text mining. *Journal for Language Technology and Computational Linguistics*. 20(1):19-62..
- Shim, YS. 2016. A Study on the Determinants of Destination Image Using Text Mining. Master's thesis, Sejong University.