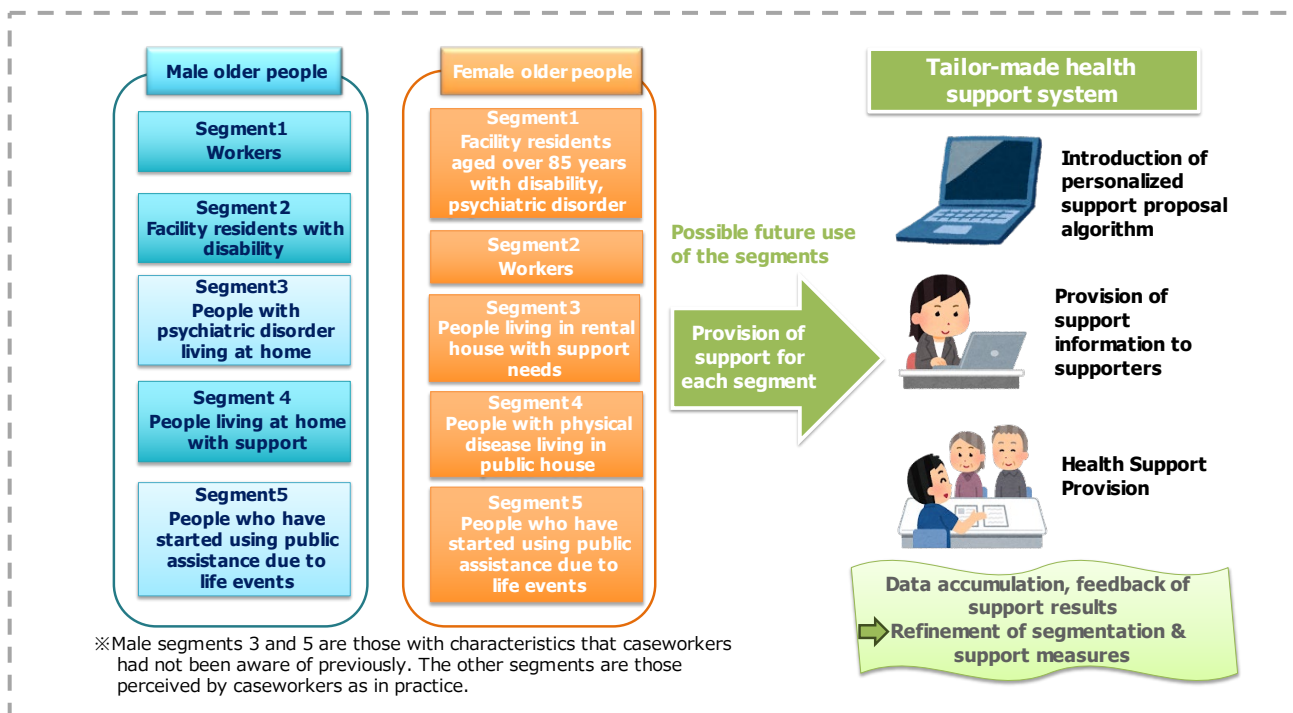


Development of a new method for tailor-made health support for public assistance recipients

Summary

Besides financial support, public assistance recipients have diverse and complex health and social support needs. The segmentation approach can be used to provide tailored support interventions for a targeted group of individuals. The research group was led by Associate Professor Naoki Kondo (during the research, currently a Professor at the Graduate School of Medicine and School of Public Health, Kyoto University) and Keiko Ueno, a PhD student at the Graduate School of Medicine, The University of Tokyo (during the research, currently Assistant Professor at the Graduate School of Medicine and School of Public Health, Kyoto University), employed market segmentation and a soft clustering technique to characterize different segments within the population of older public assistance recipients in Japan. They examined the similarities between the extracted segments and public assistance recipients in practice by interviewing caseworkers at welfare offices. Consequently, five distinct segments of older recipients were identified for each sex. Caseworkers perceived several segments as those in practice. Moreover, we extracted segments with characteristics that caseworkers had not previously been aware of. Accordingly, they have been developing a tailor-made health support system that presents support plans for each segment.

The results of this research were published online in the International Journal for Equity in Health on August 3, 2023.



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■Abstract

Background: Public assistance recipients have diverse and complex needs for health and social support in addition to financial support. Segmentation, which means dividing the population into subgroups (segments) with similar sociodemographic characteristics, is a useful approach for allocating support resources to the targeted segments. Clustering is a commonly used statistical method of segmentation in a data-driven marketing approach. This explanatory sequential mixed methods study applied a clustering technique, aiming to identify segments among older public assistance recipients quantitatively, and assess the meaningfulness of the identified segments in consultation and support activities for older recipients qualitatively.

Methods: We identified the segments of older recipients in two municipalities using probabilistic latent semantic analysis, a machine learning-based soft clustering method. Semi-structured interviews were subsequently conducted with caseworkers to ask whether the identified segments could be meaningful for them in practice and to provide a reason if they could not think of any older recipients from the segment.

Results: A total of 3,165 older people on public assistance were included in the analysis. Five distinct segments of older recipients were identified for each sex from 1,483 men and 1,682 women. The qualitative findings suggested most of identified segments reflected older recipients in practice, especially two of them: female Cluster 1 (facility residents aged over 85 years with disability, psychiatric disorder), and female Cluster 2 (workers). Some caseworkers, however, did not recall older recipients in practice when working with certain segments.

Conclusions: A clustering technique can be useful to identify the meaningful segments among older recipients and can potentially discover previously unrecognized segments that may not emerge through regular consultation practices followed by caseworkers. Future research should investigate whether tailored support interventions for these identified segments are effective.

<Comments by author>

The new analytical approach for validating the results of the segments of older public assistance recipients created by soft clustering, a machine learning method, with caseworker interviews was interesting and challenging. Based on the results of this study, we will continue to develop a health support system for public assistance recipients.

<Bibliographic information>

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