HOKKAIDO UNIVERSITY

Title	The epidemiological studies of the association between life satisfaction and health among older adults [an abstract of dissertation and a summary of dissertation review]
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Description	配架番号：2830
Degree Grantor	北海道大学
Degree Name	博士(医学)
Dissertation Number	甲第15896号
Issue Date	2024-03-25
Doc URL	https://hdl.handle.net/2115/92411
Rights(URL)	https://creativecommons.org/licenses/by/4.0/
Type	doctoral thesis
File Information	SHINOHARA_Naoko_abstract.pdf, 論文内容の要旨

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学位論文内容の要旨

博士の専攻分野の名称　博士（医　学）　氏 名　篠　原　尚　子

学 位 論 文 題 名

The epidemiological studies of the association between life satisfaction and health among older adults
（地域在住高齢者における生活満足度と健康に関する疫学研究）

Abstract

Introduction: Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Well-being includes the meaning of health and happiness in English. Well-being appears to be subjective and has benefits for both physical and mental health.

Subjective well-being is a broad concept in several fields and comprises of three dimensions: evaluative well-being (life satisfaction, LS), hedonic well-being (feelings of happiness, sadness, anger, stress, and pain), and eudemonic well-being (a sense of purpose and meaning in life). Subjective well-being has been explored in previous studies; however, few have measured it correctly. Most studies are partially measured and do not seem to represent the entire concept of subjective well-being. This can be attributed to the chronological nature of the indicators. This is because subjective well-being includes a person's entire life, from the past to the future, meaning that they feel about their total life.

LS seems to be a good indicator for older adults to reflect on their lives because older people accumulate emotional wisdom that leads to the selection of more emotionally satisfying events, friendships, and experiences as they age, although they become more vulnerable.

Chapter 1

Introduction: The world is ageing rapidly and the number of older adults is expected to increase to 2.1 billion by 2050. Japan is one of the leading countries representing an ageing society. Although average life expectancy has increased, the gap between longevity and healthy life expectancy remains. This has led to a continuous increase in healthcare costs.

Previous studies have examined the relationship between LS and health issues, such as chronic diseases, cancer, activity limitations, and mortality. Although previous studies have reported an association between LS and some health conditions, evidence among older adults remains scarce. Therefore, this study aimed to investigate the association between LS and health in older adults through a narrative review.

Methods: A systematic search of articles published in PubMed before October 2023 using the search terms: "life satisfaction" and ('aged' or 'older people' or 'older adult' or 'elderly') and ('cross-sectional' or 'longitudinal' or 'cohort' or 'review' or 'meta-analysis') was conducted. As the concept of LS was sometimes vague, the contexts were carefully analysed and checked for their meanings and measurements.

Results: Seventeen studies (13 cohort studies and 4 cross-sectional studies) were found. LS was assessed using questionnaires, but the time span was different: in the last month, in these days, in current, in general, overall, or all things considered. Outcomes included mortality, cognitive function, health status, and activity limitations. LS significantly affected most health outcomes in older adults.

Discussion: The analysis indicated that LS is associated with mortality, cognitive function, activity limitations, and health status among older adults. However, the concept of LS has not yet been fully established. Sometimes, it shows part of subjective well-being or represents itself. This may cause confusion or an oversight of the LS. LS is a psychological indicator used to measure people's lives. LS is a promising way to enhance several other aspects of

health and well-being in a rapidly ageing population. Because older people are more vulnerable than younger people, maintaining a higher LS might help them maintain their health.

Chapter 2

Introduction: In Chapter 1, LS was reported to predict mortality. However, little is known about LS on functional decline. This study examined the association between LS and functional decline in older adults. Additionally, by exploring gender differences and the chronological effect of LS on functional decline, data was analysed and stratified by gender across the four time points.

Methods: A total of 1,899 community-dwelling individuals aged 65 years were analysed in a prospective cohort study conducted from 2000 to 2005. LS was assessed using the Life Satisfaction Index (LSI) K and divided into quartiles. Functional decline was defined using the Japanese Long-Term Care Insurance (LTCI) system as follows: 1) all-cause mortality, 2) severe disability or death, and 3) mild or severe disability or death. A Cox proportional hazards model was used to investigate the association between LS and functional decline. The temporal effects of LS were investigated in the 8^{th}, 10^{th}, 12^{th}, and 14^{th} years. Through a self-administered questionnaire, information was obtained and controlled for covariates such as years of participation, lifestyle variables, sociodemographic factors, social activities, comorbidity variables, TMIG-IC, and stress. A variable was created with four groups of LS according to its distribution: 0–3, 4–5, 6, and 7–9 points. Person-years were calculated from the baseline to the date of relocation, LTCI certification, death from all causes, or the end of each time point. Cox proportional hazard regression models were constructed to calculate the hazard ratio (HR) with a 95% confidence interval (CI) of functional decline and mortality. Because of the differences in the effects of gender on functional decline, data stratified by gender was also analysed. Subsequently, the composing three factors of LS such as 'satisfaction with the whole life', 'evaluation of ageing', and 'psychological stability' were examined to investigate which of the three factors was associated with functional decline.

Results: The effect of LS attenuated over time. In the 8^{th} year (aged 72–73), a higher LS was found to be associated with a lower risk of severe disability or death in female participants (adjusted HR [95% CI] = 0.24 [0.06–0.70]). However, the impact weakened over time (adjusted HR [95% CI] = 0.31 [0.11–0.76]) in the 10^{th} year (aged 74–75), 0.57 (0.28–1.14) in the 12^{th} year (aged 76–77), and 0.60 (0.32–1.12) in the 14^{th} year (aged 78–79). This trend continued with mild or severe disability, or death (adjusted HR [95% CI] = 0.30 [0.14–0.68], 0.46 [0.24–0.87], 0.67 [0.41–1.10], and 0.65 [0.42–1.02]) in the 8^{th}, 10^{th}, 12^{th}, and 14^{th} years, respectively. In men, no associations were found at any timepoint or outcome category. Regarding three factors of LS, higher score of 'evaluation of ageing' showed significant decrease of HR in mild or severe disability, or death among both men and women, but the association weakened gradually. In women, higher score of 'psychological stability' diminished HR in both severe disability or death and mild or severe disability, or death. However, the association attenuated over time.

Discussion: Higher LS among women was inversely associated with functional decline and the effect of LS gradually attenuated over time. No association was observed in men. In the factors of LS, higher 'evaluation of ageing' decreased the risk of functional decline among both men and women. 'Psychological stability' in women also had inverse association on functional decline, but the associations weakened chronologically.

Conclusion: The review indicated that LS is associated with mortality, cognitive function, activity limitation, and health status among older adults. The prospective cohort demonstrated an inverse association between LS and functional decline among older women with severe levels of functional decline or death, and mild, severe levels of functional decline, or death; however, the effect of LS may gradually weaken over time. Among three factors of LS, higher score of 'evaluation of ageing' was associated with the lower risk of mild or severe disability, or death among both men and women, but the association attenuated gradually.