

## Changes in Cognition of Elderly People: A Longitudinal Study in Kanchanaburi Province, Thailand

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**Abstract :** Longitudinal studies related to cognitive impairment in elderly are necessary for health promotion and development. The purposes of this study were (1) to examine changes in cognition of elderly over time and (2) to examine the impacts of changes in social determinants of health (SDH) toward changes in cognition of elderly by using the secondary data derived from the Kanchanaburi Demographic Surveillance System (KDSS) by the Institute for Population and Social Research (IPSR) which contained longitudinal data on individuals, households, and villages. Two selected projects included the Health and Social Support for Elderly in KDSS in 2007 and the Population, Economic, Social, Cultural, and Long-term Care Surveillance for Thai Elderly People's Health Promotion in 2011. The samples were 586 elderly participated in both projects. SDH included living arrangement, social relationships with children, relatives, and friends, household asset-based wealth index, household monthly income, loans for livings, loans for investment, and working status. Cognitive impairment was measured by category fluency and delayed recall. This study employed Generalized Estimating Equation (GEE) model to investigate changes in cognition by taking SDH and other variables such as age, gender, marital status, education, and depression into the model. The unstructured correlation structure was selected to use for analysis. The results revealed that 24 percent of elderly had cognitive impairment at baseline. About 13 percent of elderly still had cognitive impairment during 2007 until 2011. About 21 percent and 11 percent of elderly had cognitive decline and cognitive improvement, respectively. The cross-sectional analysis showed that household asset-based wealth index, social relationship with friends, working status, age, marital status, education, and depression were significantly associated with cognitive impairment. The GEE model revealed longitudinal effects of household asset-based wealth index and working status against cognition during 2007 until 2011. There was no longitudinal effect of social conditions against cognition. Elderly living with richer household asset-based wealth index, still being employed, and being younger were less likely to have cognitive impairment. The results strongly suggested that poorer household asset-based wealth index and being unemployed were served as a risk factor for cognitive impairment over time. Increasing age was still the major risk for cognitive impairment as well.

**Keywords :** changes in cognition, cognitive impairment, elderly, KDSS, longitudinal study

**Conference Title :** ICACS 2019 : International Conference on Applications of Crop Sciences

**Conference Location :** Paris, France

**Conference Dates :** June 25-26, 2019