



Healthy behaviours and productive activities among Thai older adults: A repeated cross-sectional analysis

Nopphol Witvorapong

Centre for Health Economics, Faculty of Economics, Chulalongkorn University, Pathumwan, Bangkok, 10330, Thailand



ARTICLE INFO

Keywords:

Thailand
Social participation
Labour participation
Lifestyle
Elderly
Multivariate probit

ABSTRACT

Based on a nationally representative repeated cross-sectional sample of older individuals from the 2007 and 2011 Surveys of Older Persons in Thailand ($n = 50,138$, with the participation rate of 95.79%), this study investigates the extent to which healthy behaviours are interrelated with productive activities in old age. Healthy behaviours were represented by alcohol abstinence, tobacco abstinence, physical exercise, and consumption of a nutritious diet, encompassing all major lifestyle choices that could lower mortality risks among the general population. Productive activities were represented by social participation and labour participation, consistent with the paradigms of Active and Productive Ageing promoted by the World Health Organization. A multivariate probit model, whereby all six behaviours were jointly estimated, was explored. Conditional on pairwise combinations of the two productive activities, the probabilities of contemporaneously undertaking all four healthy behaviours were calculated. The results illustrate that the relationships among productive activities and health behaviours are inextricable and complex. Considering each of the four healthy behaviours separately, social participation and labour participation are associated with lower probabilities of abstaining from alcohol and tobacco but higher probabilities of exercising and keeping a nutritious diet among older adults. Considering all four healthy behaviours together, the productive activities are associated with a significant increase in the probability that a Thai older adult would simultaneously abstain from alcohol, abstain from tobacco, exercise, and eat healthily, compared to if the same individual undertakes neither social participation nor labour participation. This study calls for a consistent set of multiple-behaviour interventions to promote healthy and productive ageing.

1. Introduction

Defined as lifestyle choices that directly or indirectly impact health (Peel et al., 2005), health behaviours constitute a critical risk factor for non-communicable diseases (NCDs), which are now the leading cause of deaths globally (IHME, 2016). Unhealthy behaviours—notably, smoking, drinking, lack of exercise, and poor diet—have been associated with poor health and higher risks of mortality across settings (Balía and Jones, 2008; Dias, 2010; Holmes and Joseph, 2011; IHME, 2016). The NCD burden falls disproportionately on older adults, who are the most likely age group to be affected (IHME, 2016). The fact that health behaviours are modifiable and, consequently, that adverse impacts of NCDs could be partially avoided at a later stage of life provides a basis for the United Nation's Research Agenda on Ageing for the 21st Century which calls for more research on health behaviours in old age (Peel et al., 2005).

Consistent with the World Health Organization (WHO)'s paradigms of Active and Productive Ageing (Walker and Aspalter, 2015),

productive activities serve as a potential catalyst for health-related behavioural changes in old age. They refer to a process whereby older individuals are encouraged to remain active, serving as “a resource to their families, communities, and economies” (WHO, 2002). Productive activities can be market-based or non-market, for which labour participation and social participation represent an important example respectively. The literature has persistently linked labour participation and social participation with healthy behaviours and good health outcomes among older adults (Behncke, 2012; Godard, 2016; Robroek et al., 2013; Ronconi et al., 2012; Sirven and Debrand, 2008, 2012). The policy implication is clear: that the promotion of productive activities benefits health in old age.

The relationships among health behaviours, social participation, and labour participation in old age can nevertheless be more deeply investigated. The term ‘health behaviours’ is a broad umbrella for different activities. Within the same individual, it is possible to observe several healthy behaviours, unhealthy behaviours, or a combination of both (Dias, 2010; Poortinga, 2007). It is also possible to observe

E-mail address: nopphol.w@chula.ac.th.

<https://doi.org/10.1016/j.socscimed.2018.07.031>

Received 7 January 2018; Received in revised form 12 June 2018; Accepted 18 July 2018

Available online 20 July 2018

0277-9536/ © 2018 Elsevier Ltd. All rights reserved.

substitutability or complementarity among health behaviours (Kaestner et al., 2014). Social participation and labour participation are also interrelated. The two activities compete with each other, given the time constraint (Hank and Stuck, 2008). They may also complement each other, with social participation and labour participation in old age being considered complementary forms of social interactions (Saffer and Lamiraud, 2012). The complex interrelationships indicate that health behaviours, social participation, and labour participation are endogenously determined (Balía and Jones, 2008; Giordano et al., 2012; Sirven and Debrand, 2008). In addition to observable time and budget constraints, older adults differ in terms of life circumstances and preferences, which are unobserved. The presence of common unobserved factors implies that the decisions to adopt a certain lifestyle, participate in social events, and engage in paid employment are all jointly made, and that empirical investigation of these behaviours entails more than simple reduced-form regressions.

This study investigates the complex interrelationships among health behaviours, social participation, and labour participation in old age. More specifically, it tests the following hypotheses on a sample of older adults:

- Social participation is associated with health behaviours;
- Labour participation is associated with health behaviours;
- Social participation and labour participation are associated with each other;
- Health behaviours are associated with each other.

The literature suggests that the first two hypotheses can be signed; social participation and labour participation have proved to motivate healthy behaviours. The evidence is mixed for the last two hypotheses. While it is expected that social participation and labour participation, on the one hand, and health behaviours, on the other, are correlated among themselves, directions of these relationships are not well established.

This study is a repeated cross-sectional analysis, using the nationally representative 2007 and 2011 Surveys of Older Persons, Thailand. Distinctly sampled, the two surveys do not form panel data (NSO, 2008, 2012). The final sample consists of 50,138 Thai older adults in the post-retirement ages (i.e. older than 60 years), and is analysed under a multivariate probit model, where all outcomes of interest are jointly estimated. The 2007, 2011 surveys are also separately investigated; the results are compared with those from the repeated cross-sectional sample to provide robustness checks.

The study offers important contributions. While existing studies are largely based on developed countries (Holmes and Joseph, 2011), this study utilises data from a developing country in Asia: Thailand. The country represents a valid case study, as it is phasing into an aged society, with 13% of the population being considered old (Witvorapong, 2015), and is experiencing an epidemiological shift towards NCDs, similar to the global trend (IHME, 2016). This study represents one of the few studies to address four main behavioural risk factors, namely poor diet, smoking, alcohol consumption, and physical inactivity (Poortinga, 2007); existing studies often focus on one risk factor (Godard, 2016; Lindstrom et al., 2001). Finally, it methodologically improves upon the existing literature by jointly modelling the outcomes of interest and explicitly accounting for unobserved heterogeneity (Balía and Jones, 2008; Dias, 2010; Sirven and Debrand, 2008, 2012).

2. Methods

2.1. Study design and data

This study employs a repeated cross-sectional study design. Data used for estimation are from the nationally representative 2007 and 2011 Surveys of Older Persons in Thailand, collected under the same sampling frame and method by the National Statistical Office (NSO,

2008; 2012). Since respondents from the two surveys were independently sampled (NSO, 2008; 2012), observations between the years cannot be matched, and the combination of the two waves does not yield panel data. Instead, the two surveys offer repeated cross-sectional data that include information on personal and household characteristics, lifestyle choices, as well as labour and social participation.

The unit of analysis is older individuals. The 2007, 2011 surveys respectively comprise 20,841 and 31,501 individuals, who were older than 60. In addition to the age cut-off, sample selection is based on the fact that the use of a multivariate probit model requires complete data on all variables. The process excludes 5 observations in 2007 and 2199 observations in 2011 with missing data on labour participation and whether the older individual co-resided with adult children, which is an explanatory variable, respectively.

The final, repeated cross-sectional sample consists of 50,138 observations, with 20,836 and 29,302 observations from 2007 to 2011 respectively. This is equivalent to 95.79% of the original sample prior to the sample-selection process. According to the World Development Indicators database, the size of the Thai older population was 5,426,606 in 2007 and 6,205,430 in 2011, therefore the final sample addresses 0.38% and 0.47% of the older population in 2007 and 2011 respectively. The high participation rate (95.79%) implies that sample selection bias, if any, is likely to be minimal.

In light of the absence of panel data, the choice of a repeated cross-section over a single cross-section is deliberate. Using repeated cross-sectional data increases the number of observations and degrees of freedom in the analysis (Witvorapong, 2015). This is especially important, since this study employs an empirical strategy that requires a large data set, jointly estimating several outcomes. Repeated cross-sectional data can also be used to (partially) capture time-varying components of outcomes of interest, allowing for the inclusion of a time trend or time fixed effects in the regression (Øvrum, 2011; Witvorapong, 2015).

Nevertheless, even though repeated cross-sectional data are preferred, this study takes full advantage of the availability of multiple years of comparably collected data and investigates each year of data separately. The comparison of repeated cross-sectional versus cross-sectional samples can be used to assess consistency of the results in this study (Williams et al., 2014).

2.2. Empirical model

There are six binary outcomes of interest: alcohol abstinence (A_i), tobacco abstinence (T_i), physical exercise (E_i), healthy diet consumption (D_i), social participation (S_i), and labour participation (W_i). A multivariate probit model is used, assuming the following latent variable equations:

$$A_i^* = x_i' \beta_a + \varepsilon_{ai}, \text{ where } A_i = 1(A_i^* > 0) \tag{1}$$

$$T_i^* = x_i' \beta_t + \varepsilon_{ti}, \text{ where } T_i = 1(T_i^* > 0) \tag{2}$$

$$E_i^* = x_i' \beta_e + \varepsilon_{ei}, \text{ where } E_i = 1(E_i^* > 0) \tag{3}$$

$$D_i^* = x_i' \beta_d + \varepsilon_{di}, \text{ where } D_i = 1(D_i^* > 0) \tag{4}$$

$$S_i^* = x_i' \beta_s + \varepsilon_{si}, \text{ where } S_i = 1(S_i^* > 0) \tag{5}$$

$$W_i^* = x_i' \beta_w + \varepsilon_{wi}, \text{ where } W_i = 1(W_i^* > 0) \tag{6}$$

x_i represents a vector of explanatory variables that are the same across all six equations and are composed of characteristics of individual i as well as regional fixed effects. Exploiting the nature of repeated cross-sectional data, x_i also includes, where applicable, time fixed effects. ε_{ji} represents the error term for outcome j that pertains to individual i . β_j is a vector of coefficients to be estimated.

The multivariate probit model assumes that error terms are jointly

Download English Version:

<https://daneshyari.com/en/article/7327144>

Download Persian Version:

<https://daneshyari.com/article/7327144>

[Daneshyari.com](https://daneshyari.com)