



ELSEVIER

Contents lists available at ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

Time cost of child rearing and its effect on women's uptake of free health checkups in Japan

Hisataka Anezaki*, Hideki Hashimoto

Department of Health and Social Behavior, The University of Tokyo School of Public Health, 7-3-1 Hongo, Bunkyo-ku, Tokyo, Japan



ARTICLE INFO

Keywords:

Japan
Women's health
Time cost
Child rearing
Health checkup

ABSTRACT

Women of child-rearing age have the lowest uptake rates for health checkups in several developed countries. The time cost incurred by conflicting child-rearing roles may contribute to this gap in access to health checkups. We estimated the time cost of child rearing empirically, and analyzed its potential impact on uptake of free health checkups based on a sample of 1606 women with a spouse/partner from the dataset of a population-based survey conducted in the greater Tokyo metropolitan area in 2010. We used a selection model to estimate the counterfactual wage of non-working mothers, and estimated the number of children using a simultaneous equation model to account for the endogeneity between job participation and child rearing. The time cost of child rearing was obtained based on the estimated effects of women's wages and number of children on job participation. We estimated the time cost to mothers of rearing a child aged 0–3 years as 16.9 USD per hour, and the cost for a child aged 4–5 years as 15.0 USD per hour. Based on this estimation, the predicted uptake rate of women who did not have a child was 61.7%, while the predicted uptake rates for women with a child aged 0–3 and 4–5 were 54.2% and 58.6%, respectively. These results suggest that, although Japanese central/local governments provide free health checkup services, this policy does not fully compensate for the time cost of child rearing. It is strongly recommended that policies should be developed to address the time cost of child rearing, with the aim of closing the gender gap and securing universal access to preventive healthcare services in Japan.

1. Introduction

Universal access to preventive healthcare services is expected to improve the population's health (Ottersen and Norheim, 2014). Public health policies in some countries, including the UK and Japan, provide various opportunities for people to access preventive health services for free, or at an affordable price (Yamada and Yamada, 2003; Labeit et al., 2013). However, despite this widespread availability, some segments of the population are known to exhibit lower uptake rates of preventive services, delineated by age, gender, socio-economic conditions, and ethnicity (Yamada and Yamada, 2003; Carney et al., 2013).

Women of child-rearing age consistently have the lowest uptake rates, both in the UK and Japan, suggesting the existence of gender- and age-based reasons for the unequal use of public health checkup services (Yamada and Yamada, 2003; Labeit et al., 2013). Although women in this age group are less likely to have conventional risks for chronic conditions, e.g. hypertension, hypocholesteremia, diabetes, and smoking, the US Preventive Service Task Force still recommends regular checkup for these conditions, even among women younger than 40 years (Agency for Healthcare Research and Quality, 2014).

Furthermore, some conditions (e.g. breast and cervical cancer) tend to be detected at a more advanced stage among younger women than among their older counterparts, resulting in a poorer prognosis in clinical, social, and psychological terms (Trogdon et al., 2016; Lantz et al., 2006). Discussions of health policy should thus pay attention to improving the uptake of regular health checkups among women of child-rearing age, to achieve health equality.

Previous studies have discussed the possible reasons why women of child-rearing age access free public health checkups less frequently, by focusing on the higher perceived costs relative to the perceived benefits of such checkups among this age–gender group (Carney et al., 2013). Torgerson et al. (1994) argued that an individual's time cost, under time constraints, was a significant determinant of their healthcare utilization. Indeed, time constraints in relation to childcare represent a particular problem among this subpopulation, especially in Japan, and a government survey showed that women in their 30s and 40s spent considerable amounts of time on housekeeping and child care, compared with their male counterparts (Statistics Bureau of Japan, 2016; Organisation for Economic Co-operation and Development, 2011).

Several studies suggested that time constraints incurred by

* Corresponding author.

E-mail addresses: h-anezaki@umin.ac.jp (H. Anezaki), hidehashimoto-circ@umin.ac.jp (H. Hashimoto).

childcare, especially for children under 5 years, and the subsequent competing demands on time may be a significant barrier preventing women of child-rearing age from undergoing cervical screening (Majeed et al., 1994; Sabates and Feinstein, 2006) and breast cancer screening (Carney et al., 2013). However, these studies simply used the number of dependent children as a marker of time constraints, and did not explicitly take account of other possible competing demands on time, such as participation in the formal labor force, determined by women's life choices in relation to work and household duties (Ghez and Becker, 1975).

These previous studies also failed to provide a quantitative estimate of the potential time cost incurred by child-rearing, which could help to design incentives to encourage service uptake. Although quantitative estimates of the time costs of informal care for the frail elderly have been studied rigorously, the equivalent cost of informal childcare by mothers and its impact on their health and health-related behaviors has been relatively poorly studied (Van den Berg et al., 2005; Van den Berg et al., 2006; Van den Berg & Ferrer-I-Carbonell, 2007; Mentzakis et al., 2011).

In this study, we aimed to assess the impact of conflicting time demands between child rearing and labor participation on the uptake of public health checkups among women of child-rearing age, by articulating their time costs. By explicitly considering endogeneity among work preference, household duties, and one's own health investment, the results of this analysis may have policy implications for the design of economic incentives to help women of child-rearing age to invest efficiently in their own health, and to balance their conflicting roles in the household and work place.

2. Methods

2.1. Data

J-SHINE recruited a random sample of 4357 adults aged 25–50 years living in four municipalities of Japan (two in the Tokyo metropolitan area and two in neighboring prefectures) in 2010 (Takada et al., 2014). The study had an overall response rate of 31.3%, and a response rate of 51.8% among those who could be contacted. Spouses of the respondents were invited to complete a supplemental survey in 2011. All the information was collected via an online self-administered questionnaire or left-behind personal computers. The study protocol was approved by the Ethics Committee of the Graduate School of Medicine of The University of Tokyo, and written informed consent was obtained at survey recruitment.

We excluded single mothers from the current study because their competing time demands would be expected to differ from those of women with partners. The sample analyzed in the current study included 1606 women who provided self-reported information on their current child rearing and working statuses, and their uptake of public health checkups in the past year, regardless of their formal marital status. A new policy was introduced in Japan in 2008 to provide basic health checkups via a public scheme, without copayment.

2.2. Estimation of time cost of child rearing

We estimated the time cost corresponding to child rearing by employing the concept of a 'shadow price' (Heckman, 1974): when a woman chooses household duties over participation in the formal labor force, it suggests that she attaches a greater value to these household duties compared with what the labor market could offer her as a wage. We extended this concept to estimate the additional time costs due to child rearing. Under the given time constraints, allocation of time for informal care should be optimally balanced to those with time for other activities, including leisure, health checkups, and labor participation, based on the individual's pricing of their time (Heitmueller, 2007; Becker, 1965). We estimated the counterfactual wage for labor force

participation instead of child rearing at home. Details of this step are presented in Appendix A.

We used a two-step estimation strategy. First, we estimated the mother's counterfactual wage rate if she had joined the formal labor force. However, given that the wage for non-working mothers was not actually measurable, we used Heckman's two-stage selection model to estimate the wage rate for non-working women. This selection model has been widely used for the same purpose in economic studies, to account for missing data due to sample selection (Heckman, 1976). The selection of work-force participation was regressed on age, education, annual income of the partner, work force participation of the partner, household saving, house ownership, and mother's attitude to her labor participation in terms of its effect on the wellbeing of pre-school children, while the expected wage was regressed on age, education, job change, and residential municipality. Details of the selection model are presented in Appendix B.

Second, we accounted for the reciprocal relationship between the choice between having a child and labor participation, given that these were interdependent decisions. This is a common problem in labor economics studies, and a simultaneous equation model can be used to obtain an unbiased estimate of the optimal choice. We used a simultaneous equation model with bivariate probit regression with having a child aged 0–3 years and labor participation as target variables. Based on this model, we could obtain the likelihood (λ) of having a child aged 0–3. As a second stage estimation, we conducted an ordinary least squares regression among mothers who did have children aged 0–3 years to estimate the optimal number of children, by regressing the number of children aged 0–3 on covariates and the estimated λ to adjust for the likelihood of having a child aged 0–3, according to the previous method used by Connelly (1992). Details of this step are presented in Appendix C and Appendix D.

Previous studies indicated that having children aged 0–2 years and the chance of married women joining the labor market were determined endogenously (Connelly, 1992; Smith and Blundell, 1986; Stern, 1989). We therefore assumed that this endogeneity problem also applied to children aged 0–3 years, because public kindergartens in Japan only accept children older than 3 years. In contrast, the number of children aged 4 years and older was assumed to be an exogenous variable, as explained in a previous study (Shimizutani and Noguchi (2004).

Based on the estimation of counterfactual wage rate and the optimal number of children, we then regressed labor participation on these estimated numbers, adjusting for age, age squared, education, annual income of partner, household savings, cohabitation with mother's parents/parents-in-law, subjective health status, attitude toward mother's labor participation, and residential municipality, to re-estimate the time cost of child rearing. We derived the time cost of child rearing as the increment in wage required to compensate for labor force participation in relation to rearing an additional child.

2.3. Time cost of child rearing and its effect on uptake of health checkup

Finally, we regressed uptake of health checkups using a probit model on total time cost, or the sum of the estimated time cost of child rearing and of labor participation (estimated wage rate), adjusting for age, age squared, maternal education, cohabitation with mother's parents/parents-in-law, type of public health insurance, and residential municipality. We then predicted the mother's uptake rate of health checkups in relation to the estimated time cost of child rearing and the average values for other covariates (listed in the legend to Table 3).

We chose to use the estimated total time cost of child rearing and labor participation in the prediction, rather than the estimated number of children per se. Although use of the estimated number of children in the regression model could overcome endogenous problems between decisions over child rearing and labor participation, we considered that the estimated total time cost of child rearing and labor participation

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات