

一般口演

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広域保健医療・連携医療支援

2022年11月18日(金) 15:30 ～ 17:30 G会場 (204会議室)

[2-G-3-07] CVMによるマレーシア市民の遠隔医療相談に対する支払い意思額の評価

*タン メイ メイ¹、小笠原 克彦¹（1. 北海道大学）

*MEY MEY Tan¹, Katsuhiko Ogasawara¹（1. 北海道大学）

キーワード：willingness to pay, Telehealth, contingent valuation methods, Double-bounded Dichotomous Choice, CVM

背景・目的マレーシア政府は、1997年に遠隔医療法を制定し、デジタルヘルス技術の活用による医療サービスの強化と再構築、医療サービスの効率化を図っている。現在マレーシア市民が医療費の大きさに対する関心は増加している。遠隔医療に対する潜在的な需要を把握し、その受容性を確認するとともに、消費者が遠隔医療サービスに対して支払う意思を理解することは、効果的で適切な医療提供の確立、患者の健康改善、医療費削減のために重要である。本研究は、医療機関への受診に代わる遠隔相談に対するマレーシア市民の支払い意思額(WTP)の推定を行う。方法 WTPの測定には二重境界二項選択評価法とランダム効用ロジットモデル分析を用い、過去の研究と予備的なオンライン調査の結果に基づき、支払い意思額予測のための入札モデル(3種類の価格を変えた調査票)を調査対象者にランダムに配布した。調査対象者は、マレーシア全国の20歳以上の一般市民(男女)を対象に調査協力を受諾した市民220名に対して Google Formsを用いたネットでの質問紙調査を行った。結果参加者は220名の内訳は、男性32%、女性68.5%であった。遠隔医療相談に対する WTPの中央値は、1回あたり58リンギット（1768 円）であり、参加者は民間企業の遠隔医療サービスに対して実際の価格よりも低い金額を支払うことを希望していると推定された。回答者の約30.1%が年収6000～9000MYR（182629 円～273943円）と回答し、79.9%が大学卒であった。回答者の65.8%が、このサービスが保険で償還されるべきだと考えていた。本調査では、回答者の大多数（86.3%）が遠隔医療相談の経験がなかった。しかし、60.3%の回答者が「利用したい」と回答した。この調査研究から、参加者は一般的に遠隔医療を利用することに前向きであることが明らかになった。

CVM によるマレーシア市民の遠隔医療相談に対する支払い意思額の評価

Evaluation of Malaysian Citizens' Willingness to Pay for Telehealth Consultation by CVM

Mey , Tan Ogasawara Kathshuhiko

Graduate School of Health Sciences, School of Medicine, Hokkaido University

Abstract: Innovations in e-health technology development have led to a simultaneous expectation that they will lead to significant efficiency gains, and reduction in overall health spending [1]. As a result, e-health adoption has risen dramatically during the pandemic, as telehealth solutions offer a practical alternative allowing for success in terms of revenue, cost, and quality. Healthcare is the most regulated sector of the economy, so extending telehealth services post-pandemic will require regulatory reform, as well as consumer demand [2]. Certainly, this requires determining the potential demand and acceptability of telehealth services to help make decisions about their expansion, preferences, and deployment. This study aims to estimate Malaysian citizens' willingness to pay for telehealth consultation, to assist in telehealth implementation decisions. A random sample of adult Malaysian respondents was surveyed via the Internet using the contingent valuation method (CVM) to estimate the willingness to pay (WTP) for this service among 220 citizens. The median WTP was estimated to be RM 58 (JYP 2198).

Keywords: Telehealth, Contingent Valuation methods, Double-bounded dichotomous choice, WTP.

1. Introduction

The accelerated development of technology and innovative applications in healthcare delivery during the COVID-19 pandemic has also led policymakers to pay increasing attention to telehealth, which can help improve healthcare value and affordability. However, there is a need for evidence on the effects of innovative technology on health outcomes or costs, before its widespread use [3]. Rising costs for healthcare services represented a growing burden in our society long before the COVID crisis, and many health executives have been grappling with how to provide access in an affordable way. Many organizations embrace telehealth services as valuable tools to improve healthcare quality and lower costs. As telehealth gains momentum, more research outcomes, and inputs on the quality, convenience, and cost from a patient's perspective are needed [4]. Therefore, this article aims to provide an overview of the amount that Malaysian citizens are willing to pay for telehealth consultation, and

accordingly propose funding models, resource allocation decisions, and policy initiatives. The outcomes from this research not only provide relevant monetary estimates but can also be used as an indication of the intensity of the sample population's interest in receiving the service and likely service demand.

2. Methods

A random sample of adult Malaysian respondents was surveyed via SNS, using double-bounded dichotomous choice and follow-up open-ended questions. The WTP for using tele-consultation per session for 30 minutes was measured and estimated using a double-bounded dichotomous choice contingent valuation method and a random utility logit model analysis. The response data obtained were analyzed using a logit model derived from the random utility model (Hanemann et al., 1991; Hanemann, 1984).

$$\ln L^D(\theta) = \sum_i^N \{ b_i^{YY} \ln f^{YY}(P_i, P_i^U) + b_i^{NN} \ln f^{NN}(P_i, P_i^L) + b_i^{YN} \ln f^{YN}(P_i, P_i^U) + b_i^{NY} \ln f^{NY}(P_i, P_i^L) \}$$

3. Result

A total of 220 participants were recruited, majority of whom were female (68.6%), with an average age of 40-49 years. Male respondents had an average age of 20-29 years. We estimated the median WTP for telehealth as RM 58 (JYP 2198). (Figure 1)

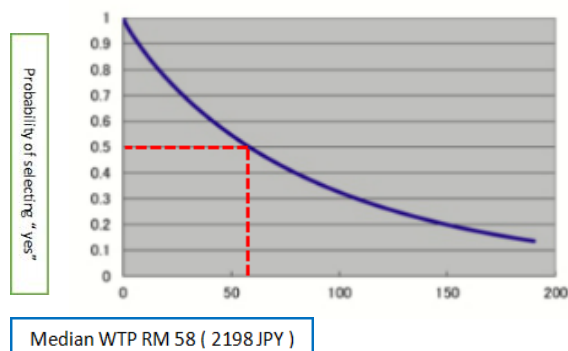
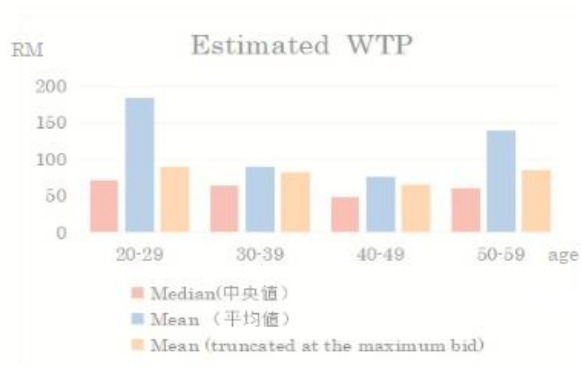


Figure 1: The estimated demand Curve

4. Discussion

The study found: Most participants had no telehealth experience. This indicates low awareness of telehealth services in Malaysia, which proves to be a significant obstacle in their implementation in the Malaysian healthcare system. We found that the young and middle-income generations have positive attitudes towards e-health technology. (Table 2). This may be because the younger generation has higher expectations of technology payments. However,, it is important to remember that cost is only one of the many factors that determine technology adoption.

Table 2: Comparing Different Age Groups in WTP



5. Limitations.

Sampling bias may exist because of the small sample size and the fact that certain groups of citizens may not actively participate on social networks like Facebook. The online data collection method is also a limitation of this study, however, given the travel restrictions in various countries, it is currently the best way to obtain relevant data.

6. Conclusion

The WTP for telehealth services in this study, is higher than that for government support systems and lower than that for private medical services in Malaysia. This study found that participants were generally willing to use telehealth, but preferred personal care, and those who preferred telehealth visits were more sensitive to out-of-pocket costs. This finding suggests that governments and health policymakers should consider affordability when implementing digital health services.

7.Ethical approval

This study was approved by the Malaysian Medical Research and Ethics Committee (NMRR ID-22-00658-5SD) and the Ethics Committee of the Graduate School of Health Sciences, Hokkaido University. All the participants provided written informed consent.

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