Financial incentives to promote preventive care: abridged secondary publication

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KEY MESSAGES

1. Vouchers are a financial incentive that reduce user fees for preventive services in the private sector. Older people preferred vouchers with attributes of flexibility, no expiry date, and a transparent list of service charges. These attributes could potentially influence the acceptance and use of the vouchers by older people who were willing to trade off some voucher's financial value for these attributes.
2. As a financial incentive for flu vaccination, a lottery draw was less preferred by older adults, compared with cash or a shopping voucher. Older adults were willing to trade off some of the reward amount in exchange for a reminder about flu vaccination.

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Introduction

Hong Kong has an ageing population. To contain increases in healthcare costs and to maintain high quality of life for older persons, adoption of healthy behaviours and preventive services should be encouraged. Factors affecting health-related behaviours include monetary, temporal, and psychological costs and benefits. The 2017 Nobel Prize winner for Economics, Professor Richard Thaler, introduced the concept of 'nudging' people towards more appropriate behaviour using incentives.[1] In behavioural economics, there are financial and non-financial incentives. This study focuses on the financial incentive.

The Elderly Health Care Voucher Scheme aims to encourage older adults aged ≥65 years to access private primary care services for curative and preventive care. An interim report showed that 82.4% of older adults used the vouchers for acute curative services, whereas only 7% used the vouchers for preventive services.[2] Financial incentives are effective in promoting healthy behaviours, especially for one-time actions such as screening and vaccination. Financial incentives are largely affected by the characteristics of the incentive programme and the consumers.[3] Whether financial incentive works for older people and what components of financial incentive are preferred by them remain unknown.

Discrete choice experiments (DCEs) are increasingly used by health economists to explore stated preferences. DCE describes hypothetical scenarios that consist of key attributes (ie, characteristics) with varying levels for each attribute. By asking individuals to choose among scenarios that combine different levels of each attribute, the DCE elicits preferences in terms of the relative importance of each attribute. This study investigated the relative preferences of older adults regarding various attributes of financial incentives for preventive care and explored whether these preferences varied according to sociodemographic characteristics and health status.

Methods

This was a cross-sectional study using a DCE questionnaire, which was designed in three stages: identification of attributes and their levels, DCE experimental design to establish choice sets, and questionnaire development and piloting. Three preventive services were used to elicit older adults' preferences for financial incentives. Three sets of DCEs were designed to elicit older adults' preferences for (1) financial incentives in terms of a voucher for an optometric examination and general health check, and (2) a financial reward for flu vaccination. A cross-sectional study of older adults attending elderly centres across 18 districts in Hong Kong was conducted via face-to-face interviews using the DCE questionnaire.

Optometric examinations and general health checks are provided by private practitioners. Therefore, the financial incentive considered in these two scenarios constituted a new voucher to

reduce user fees for an optometric examination (or a general health check) at a private practice. This voucher involved five attributes: type (flexible for any preventive service type vs specific to one preventive service), value, expiry (with vs without expiry date), reminder about the service (reminder vs none), and list of transparent charges (charge list vs none). A forced choice method was used to present the choice set to participants without providing an opt-out option. An orthogonal design was selected for the DCE. To determine the main effect of the orthogonal design, the Hahn and Shapiro catalogue was used to reduce the full factorial design of 64 profiles to a fractional factorial design of eight profiles. Older adults were asked to consider a new voucher with different profiles (a combination of attributes with levels) that they would prefer to use for an optometric examination (or a general health check) in each choice set.

Currently, flu vaccination is provided free of charge in the public sector or with a subsidy per dose for private doctors. Therefore, the financial incentive considered was a financial reward to nudge the older adults to receive a flu vaccine. The financial reward involved three attributes: type (cash vs shopping voucher vs lottery draw), value, and reminder about flu vaccination (reminder vs none). An unforced choice method was used to present the choice set to participants (ie, choice A vs B vs neither). To determine the main effect of the orthogonal design, the Hahn and Shapiro catalogue was used to reduce the full factorial design of 24 profiles to a fractional factorial design of 16 profiles. These 16 profiles were randomly split into two blocks with eight choice sets in each block, and each participant was asked to complete only one block.

A DCE questionnaire was developed to collect information regarding previous utilisation of preventive services, the DCE choice sets for financial incentives, sociodemographic characteristics, history of chronic disease, self-perceived health, and awareness of the importance of preventive care. The questionnaire was tested for two rounds before the pilot test and for another two rounds before survey implementation.

The sample size was estimated based on Orme's rule-of-thumb. In accordance with recommended practice for conjoint analysis,[4] a minimum of 125 participants was required for two alternatives in the trade-offs, with a maximum of four levels per attribute and eight choice sets for each participant. Orme updated this theory in 2000, recommending at least 300 participants to ensure an adequate choice scenario combination.[5] We aimed to recruit at least 600 participants to enable subgroup analyses and adjustment for a possible 20% non-participation rate. Elderly centres across 18 districts in Hong Kong were randomly selected for recruitment until the target sample size for each district was reached. Individuals aged ≥65 years attending the selected elderly centres with eligibility to receive the vouchers were invited to participate. Participants were asked to complete the DCE choice sets for incentives for two out of the three preventive services, which were randomly allocated to them using block randomisation. Multinomial logit models were used to analyse the DCE data. The marginal willingness for a trade-off between the value of the voucher amount and other attributes was calculated. Subgroup analyses were conducted to explore whether preferences for attributes and their levels varied according to participant characteristics.

Results

Of 80 elderly centres approached, 20 agreed to participate and helped to recruit 770 older adults. Among these older adults, 731 confirmed participation and completed the DCE questionnaire.

All five attributes of the financial incentive of a voucher for an optometric examination were statistically significant. The positive coefficient of the value attribute indicated that respondents preferred a higher voucher value. The magnitude of the coefficient (β) showed the change in utility in moving from the reference level to the preferred level. Older adults preferred a voucher flexible for any preventive service (β=0.83), with no expiry date (β=0.53), with a transparent list of charges from the service provider (β=0.47), and with a reminder (β=0.21). They were willing to trade off HK$741 for a voucher with flexibility, HK$473 for a voucher with no expiry date, HK$420 for a voucher with a transparent list of service charges, and HK$188 for a voucher with a reminder. These preferences were consistent across subgroups for all attributes except the reminder, which was not important to the group receiving Comprehensive Social Security Allowance (CSSA) and the group with no chronic disease.

All five attributes of the financial incentive of a voucher for a general health check were statistically significant. Older adults were willing to trade off HK$587 for a voucher with a flexibility, HK$516 for a voucher with no expiry date, HK$405 for a voucher with a transparent list of service charges, and HK$167 for a voucher with a reminder. These preferences were consistent across subgroups for all attributes except the reminder, which was not important to men and the group with no chronic disease.

All three attributes of the financial reward for flu vaccination were statistically significant. Older adults preferred a higher value of reward (β=0.00755). Using cash as the reference, older adults preferred a shopping voucher as the reward type (β=0.14, P=0.048) and showed less preference towards a lottery draw (β= –0.65, P<0.001). Older adults preferred to have a reminder about the

service (β=0.77, P<0.001); they were willing to trade off HK$102 for the reminder. In subgroup analyses, these preferences were consistent for all attributes, except that the group without CSSA preferred the shopping voucher (β=0.18, P<0.05) rather than cash.

Discussion

Generally, older adults preferred a voucher for optometric examination or general health check flexible for any preventive service, with no expiry date, with a reminder, with a transparent list of charges from the service provider, and with a higher monetary value. They were willing to trade off HK$167 to 741 of the voucher amount for these attributes.

Regarding the financial reward, older adults showed less preference towards a lottery draw as the reward type. They preferred a higher reward amount and were willing to trade off HK$102 for a reminder for vaccination.

Conclusion

Vouchers for preventive services that have a flexible type, no expiry date, and a transparent list of service charges were preferred by older adults; they were willing to trade off some of the financial value to obtain these attributes. Older adults were less keen on a lottery draw as an incentive for a flu vaccination; they were willing to trade off some of the reward amount for a reminder to get flu vaccination.

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Disclosure

The results of this research have been previously published in:

1. Liao Q, Lau W, McGhee S, et al. Barriers to preventive care utilization among Hong Kong community-dwelling older people and their views on using financial incentives to improve preventive care utilization. Health Expect 2021;24:1242-53.

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