Preferences for Managing Symptoms of Differing Severity: A Discrete Choice Experiment

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A B S T R A C T

Background: To design cost-effective health services it is important to understand why people adopt particular symptom management strategies. *Aim:* To establish the relative importance of factors that influence decision making when managing symptoms of differing severity, to establish how people trade between these factors, and to estimate the monetary value placed on different management types. *Design:* Discrete choice experiment. *Setting:* UK online research panel. **Method:** Successive members of an online panel were invited to participate until 480 discrete choice experiment questionnaires were completed. Relative preferences for managing three symptom scenarios of varying severity were measured. Symptom management was described by three characteristics (management type, availability, and cost). Preferences for ways of managing symptoms were measured by using conditional logit analysis. **Results:** A total of 98.5% of the completed questionnaires were valid (473 of 480 respondents). People preferred to manage minor symptoms by self-care or by visiting a pharmacy and were willing to

pay £21.58 and £19.06, respectively, to do so. For managing moderately severe symptoms, people preferred to consult a general practitioner and were willing to pay £34.86 for this option. People preferred to manage potentially very severe symptoms by consulting a general practitioner and were willing to pay £73.08 to do so. Respondents were willing to trade between management types; options less preferred became more attractive when waiting time and cost were reduced. **Conclusion:** People value self-care, supported self-care, and general practitioner consultation differently depending on the type of symptoms. Manipulating costs to users and waiting times for different services could allow policymakers to influence the services people choose when managing symptoms.

Keywords: discrete choice experiment, health care costs, primary health care, symptom management, willingness to pay.

Introduction

It is generally acknowledged that the demand for primary health care in the United Kingdom is increasing beyond the provision of available resources [1]. Strategies to help manage demand include increasing government spending on health care [2] and developing new services in addition to general practice such as National Health Service (NHS) walk-in centers, telephone/Internet services (www.nhsdirect.nhs.uk; www.nhs24.com), and community pharmacy Minor Ailment Services [3]. One aim of such services is to increase the availability of general practitioner (GP) appointments for more serious cases. However, a significant proportion of GP consultations still involve minor illnesses that could be managed without GP intervention [4–6], and the demand for appointments continues to increase annually [7].

The UK Government and the NHS promote self-care [8,9]. By encouraging people to take personal responsibility for their health, some demand for health care can be met at a personal level [10] and scarce NHS resources can be preserved. Existing services such as community pharmacies and NHS telephone/Internet services can support self-care, with the added advantage of readily available professional advice for cases requiring further investigation. The success of these services in managing the demand for primary care will partly depend on public's willingness to use

them. It is crucial that people with more serious symptoms recognize when it is appropriate to seek medical help.

Applying economic methods to elicit health care users' preferences informs the rationing of health care by means that satisfy demand [11,12]. At present, there is a lack of information regarding the trade-offs people make in managing moderate and serious symptoms. A discrete choice experiment (DCE), a survey-based technique described previously, was used successfully in 2005 to measure preferences for managing symptoms of minor illness [13]. People preferred to manage self-limiting, flu-like symptoms by self-care or, where advice was needed, by consulting a pharmacist or GP. Other options (e.g., NHS helpline and complementary therapy) were significantly less preferred. This study expanded the original experiment to establish people's preferences for managing symptoms of differing severity. Our a priori expectations were that preferences would differ depending on symptom severity and that health professional advice would be valued more highly for more severe symptoms.

Method

The DCE method presents individuals with hypothetical choice-sets described in terms of attributes and associated levels. Attri-

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Type of management:

GP
You could make an appointment at your GP surgery and get professional medical advice in the usual way. You may or may not be given a prescription or advised to purchase a treatment.

Practice nurse
You could arrange to see the practice nurse at your GP surgery for professional advice/information. You may or may not be given a prescription or advised to purchase a treatment.

Pharmacy
You could ask for professional advice or information from a pharmacist or from a counter sales assistant at a community pharmacy (local chemist). You may or may not be advised to purchase a treatment.

Complementary
You could get advice by consulting a professional complementary therapist such as a herbalist, homeopath, aromatherapist, massage therapist etc. You may or may not be advised to purchase a treatment.

NHS24 / NHS Direct
You could call and ask for information or advice from a health professional on the 24-hour NHS telephone help line. You may or may not be advised to purchase a treatment.

Self-care
You could deal with the symptoms by yourself or by asking for advice from friends or family. This might include using an over-the-counter medicine or a home remedy, exercise, resting etc. You might also look for advice or extra information e.g. from books or the internet. In this case, you would NOT consult a health professional directly.

Do nothing
You could choose to do nothing about the symptoms, i.e. you would not ask anyone for advice or information, and would not change your normal behavior in any way.

Availability:
The length of time you would have to wait before you can deal with your symptoms in your preferred way. This might include: the time you have to wait for an appointment, travel time, and time taken to get any treatment.
- 0 hours
- 1 hour
- 5 hours
- 1 day
- 2 days
- 5 days

Cost:
We want to know how much you value the different options. One way of doing this is to measure how much you would be willing to pay. We want you to think about how much you would be prepared to spend to get your preferred option This would include **all** associated costs, such as travel costs and the cost of any treatment (for example any consultation fee, over-the-counter medicines, complementary remedies etc).
- £5
- £10
- £20
- £30

Fig. 1 – Discrete choice experiment attributes: Descriptions and levels. GP, general practitioner.

bute levels are varied systematically between choice-sets to create different options. Respondents choose their preferred option within each choice-set. Regression analysis yields information on the relative importance of attributes and indicates how respondents trade between them [14].

Development of the experimental design has been described previously [13]. In the current study, the 72 choice-questions used to collect preference data were almost identical to those used in 2005 and included three attributes: management type, availability, and cost. However, compared with 2005, levels of the "cost" attribute were increased and covered a wider range (Fig. 1), reflecting our expectation that some management types would be valued more highly for more severe symptoms.

Three hypothetical symptom scenarios were developed in consultation with two practicing GPs: one minor, one more severe but likely to be self-limiting, and one potentially very severe (Fig. 2). To