Penny For Your Tooth?
Patients' Valuations of Preventative Dentistry in Porto Alegre, Brazil

Naeem Adam* Emma Walshaw* - Supervisors: **Dr Christopher Vernazza** (Newcastle University Dental Sciences) and **Dr Marina Lobato** (PUCRS Faculdade de Odontologia)
Pontifical Catholic University of Rio Grande do Sul (PUCRS), Porto Alegre, Brazil

Principle Objective

To investigate the value placed on preventative dental care by patients covered by **Sistema Único de Saúde (SUS)** in Porto Alegre, Brazil to inform decisions regarding resource allocation.

Introduction

Prevention of oral disease is cheaper than invasive treatment.

A more preventative approach is emerging worldwide in order to curb the cost of treatment and maintain universal dental healthcare provision.

For dental caries (decay), the efficacy of professionally applied fluoride varnish as a preventive measure has been demonstrated repeatedly in the literature[1].

The SUS system covers all Brazilian citizens and is comparable to the NHS. In either system, decisions regarding which treatments to fund are often difficult as there are competing demands.

One aspect of such decisions, is the value and preference that patients have for certain treatments. Understanding the factors that affect preferences may also help targeting of treatments

Willingness to pay (WTP) is an established means of measuring patient preference through obtaining a financial value a patient places on a treatment and/or its outcome. However, it has not often been applied in dentistry.

In most dentistry circumstances, WTP is better suited to assessing patient preference than other more established methods[2].

Aims

- To determine the value **fluoride varnish** as a preventative dental treatment using a WTP scale in adult Brazilians.
- To determine how demographic factors and self-perceived dental health affect WTP for fluoride varnish.

Left: Vila Fatima outreach centre, in a local community, where questionnaire responses were collected.
Centre: An example of housing within Vila Fatima.
Right: With Dr Lobato outside The Faculty of Dentistry of PUCRS.

Methods

Willingness to pay

WTP determines the value patients place on treatment by asking them to state the amount they would be willing to pay to avoid a particular health state scenario.

In our project we used tooth decay as the scenario to be avoided and the application of fluoride varnish as the treatment which would be preventative.

WTP has many advantages over established metrics. A monetary value makes costs and benefits of healthcare directly comparable.

The dentition, with its varied and differentially placed teeth lends itself to measurement which addresses these differences in the manner WTP does.

Data collection

Quantitative and qualitative data were collected from patients covered by the SUS system using a structured paper questionnaire in a variety of settings.

These included Outreach centres in the local community, The Faculty of Dentistry of PUCRS and the Oral Surgery clinics of Hospital São Lucas de PUCRS.

An interpreter with dental knowledge accompanied us and was present during interviews to facilitate communication.

Results

100 patients were recruited and all had complete data. The frequency of WTP responses is reported in Figure 1 and the mean, median and measures of spread of WTP are reported in Table 1.
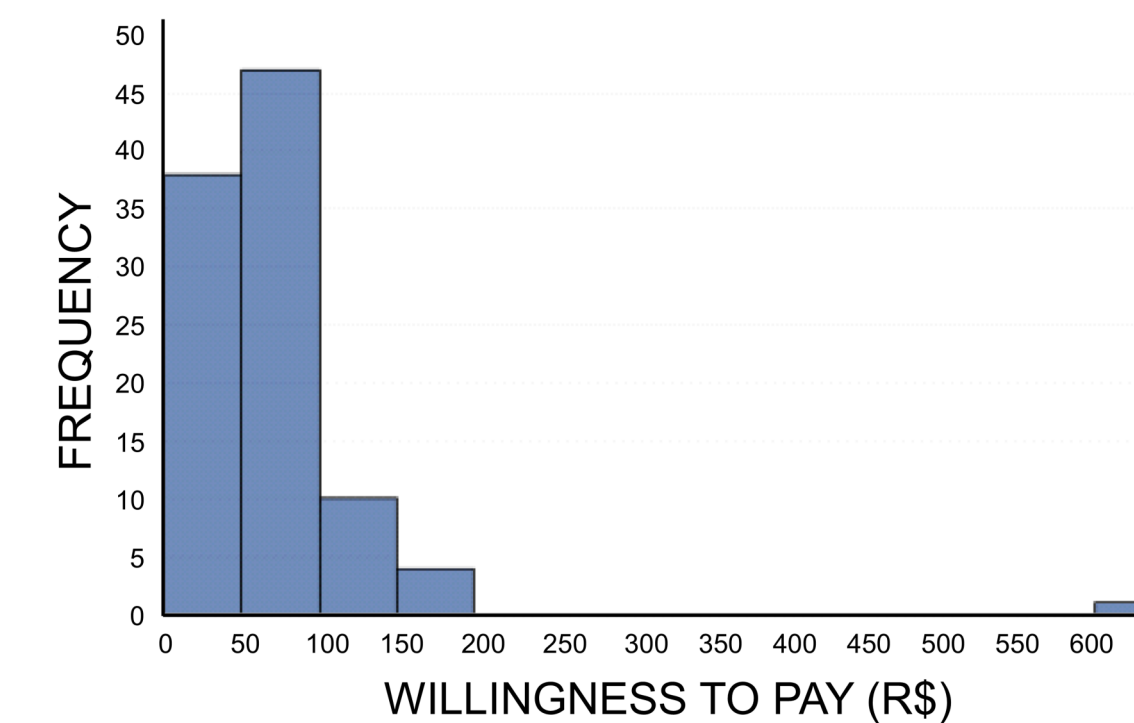
Figure 1 : Frequency of Willingness to Pay responses collected

Table 1: Descriptive statistics for WTP values

	Brazilian R$
Mean	60.37
Std. Deviation	63.44
Median	50.00
Minimum	1.00
Maximum	600.00

Factors influencing WTP were analysed using Tobit regression models. These revealed that very few of the measured demographic or dental factors had any significant influence on WTP. The only significant factors were patients with moderate incomes (R$ 1448 to 3620) and those who visited the Dentist infrequently (i.e. only when they experienced a problem), which both increased WTP.

Conclusions

Dental caries prevention (in the form of fluoride varnish) is valued by users of the SUS at a mean level of R$60.37 (= £15.17).

There is a significant variation within the sample with a standard deviation of 63.44

Regression modelling revealed that income and frequency of visits to the Dentist were significant influences on WTP but these only explained a small proportion of the variance.

These figures will be useful for policy makers when deciding about caries preventive programs to implement.

References: 1. Marinho VC (2009). Cochrane Reviews of Randomised Trials of Fluoride Therapies for Preventing Dental Caries. *Eur Arch Paediatr Dent.* 10(3):183-91
2. Vernazza, C. *et al.* (2012). How to measure the cost-effectiveness of periodontal treatments. *Perio 2000*, 60(1):138-46