

SWALLOW IT WHOLE

Introduction

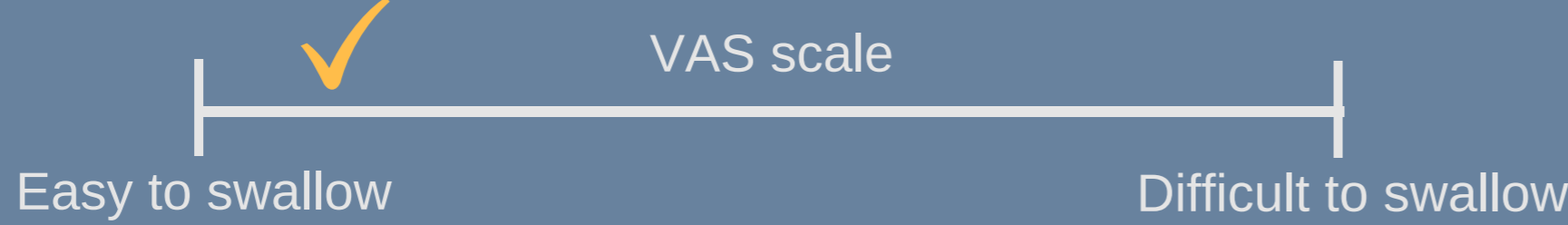
Dysphagia affects 35% of elderly, another 30% suffer from dry mouth [1,2]. This causes troubles in a daily life, not only during eating but also during ingestion of medicines. The vast majority of medicines are prescribed in solid dosage form (tablets, capsules). This poses a challenge for many patients. As a result, 60% of patients admit dosage manipulation: crushing, halving, dissolving, to help take medicines [1]. However, this practice may affect stability and bio-availability of drugs. A need for easy to swallow medicines for the elderly is a vital issue.

Methodology

In a cross-over clinical study participants received placebo tablets: one uncoated and 3 with various coatings. All volunteers received the same samples. Ethical approval was obtained from UoB.

Exclusion criteria:
1. < 18 or >75 years old
2. Smokers
3. Conditions that may compromise taste
4. People who report issues with ability to swallow the tablet.

The participants assessed how **easy-to-swallow** the tablet was using a Visual Analogue Scale (VAS) as shown below. Afterwards, participants held a tablet for 10s in their mouth and assessed the mouthfeel: **slipperiness, smoothness, stickiness and palatability.**



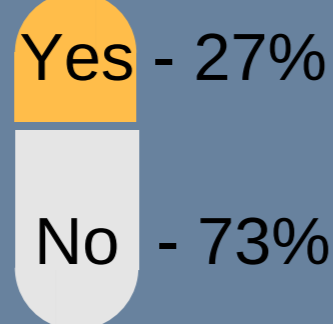
Demographics



83 participants

Gender

Male	41%
Female	59%

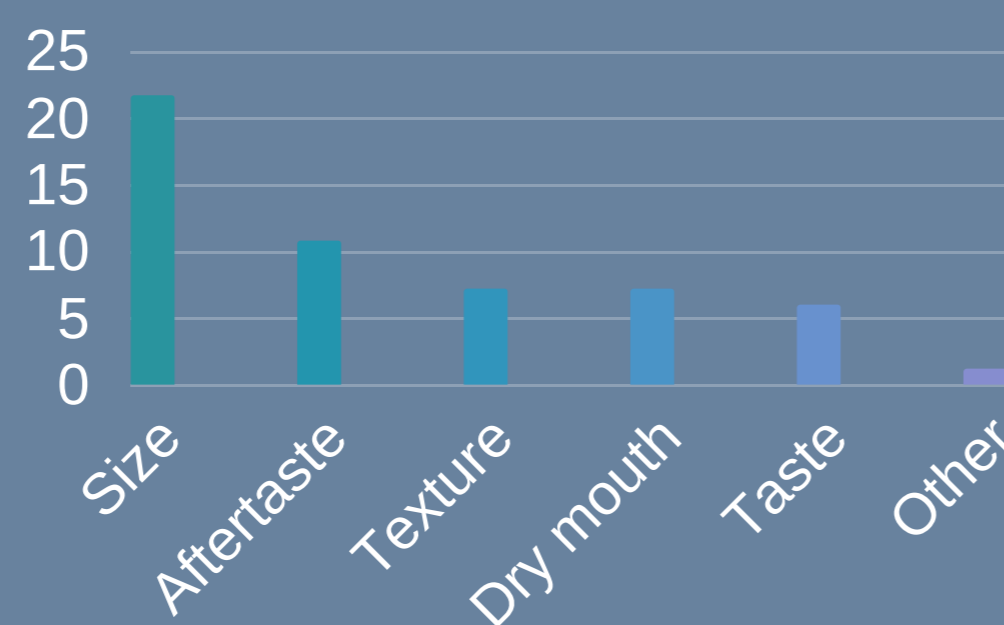


Have you experienced any problems with swallowing tablets?
Yes - 27%
No - 73%

Age range

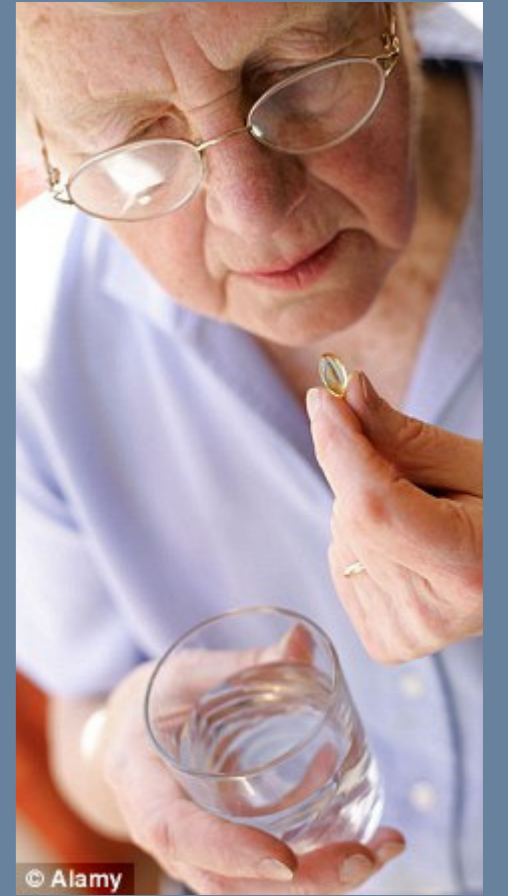
<24	12.0 %
25-34	15.7 %
35-44	13.3 %
45-54	8.4 %
55-64	12.0 %
>65	38.6 %

What characteristics of the tablet caused swallowing problems? (% of responses)



Aim

This study explores the factors that affect ease-of-swallowing and acceptability of tablets.



in their own words

"I wish all tablets were like this"

"Yuk!"

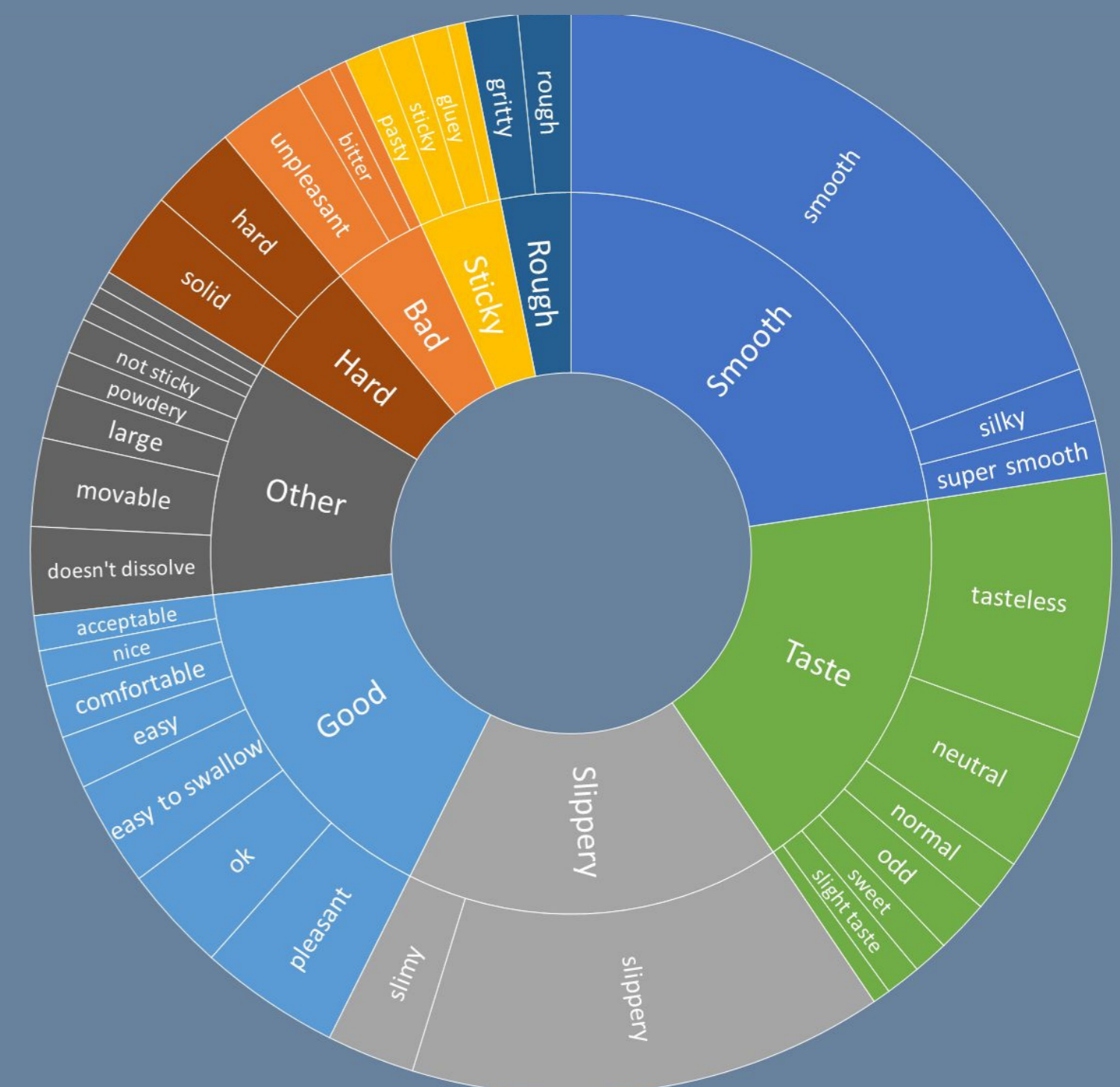


Figure 1. Descriptions of a tablet with coating 1; the size of segment is based on the frequency of descriptor

"It didn't feel as if it wanted to go down my throat"

"Very smooth as it went down"

Findings

- The participants were able to distinguish all tested tablets, and rank them from best to worst. (Chart 1)
- The most preferred sample (Coating 1) was described as very slippery, smooth and not sticky. This reflects a desired profile of the tablet. (Chart 2)
- The perception of medicines depends on age and gender. Females and young people tend to be more sensitive to detection of the differences between tablet coatings.

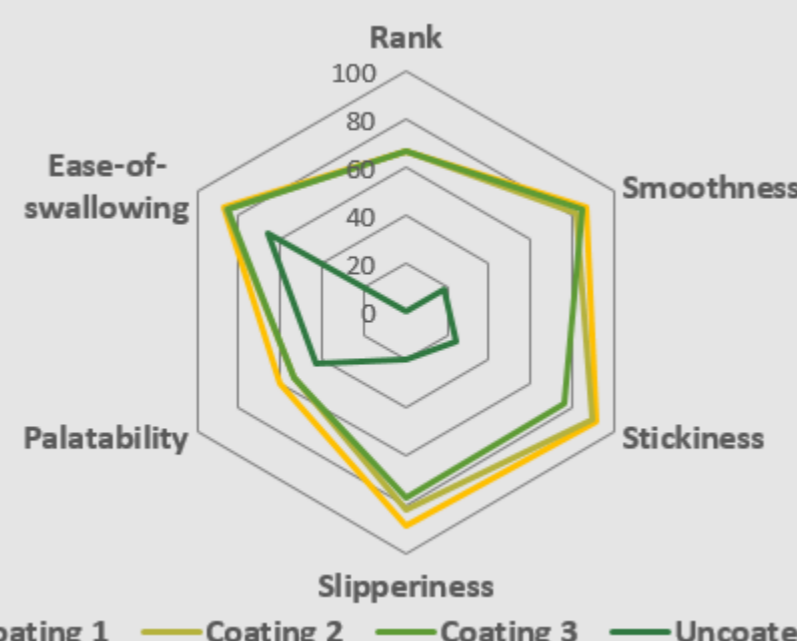
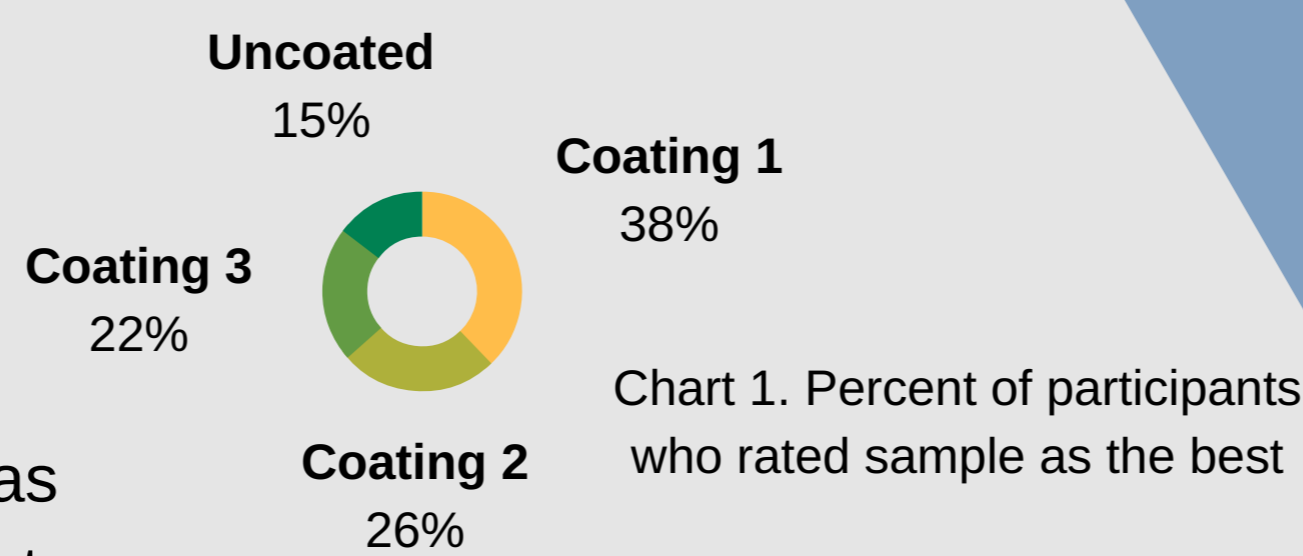


Chart 2. Median VAS scores of each sample

Conclusions

Visual Analogue Scale was very easy to use and practical to rate tablet features

Coatings improved swallowability and acceptability of tablets

Stickiness and dissolving had negative impact on tablet palatability