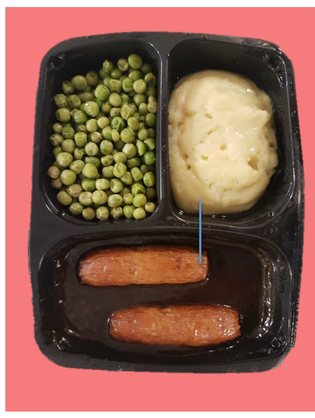

An Evaluation of ready meals and convenience foods as sources of nutritionally important water-soluble vitamins.

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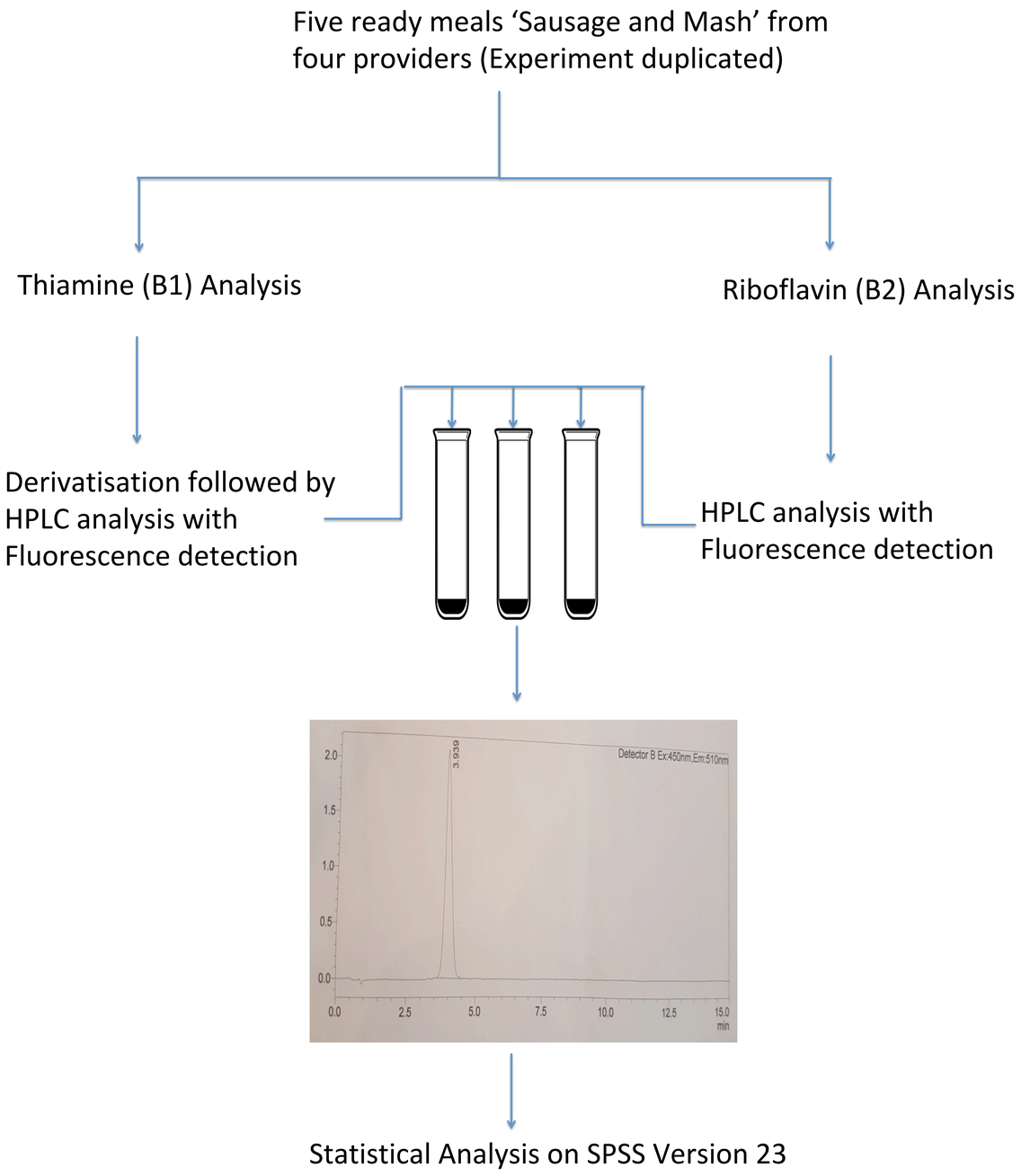
Introduction

Ready meals (RMs) are a convenient meal option, and it is assumed that they can be part of a balanced diet. Research has shown that energy, fat and salt content of RMs are "nutritionally chaotic"(Celnik et al., 2012), with many meals being significantly under- or overestimated in the labelling.

However, to our knowledge, no research has analysed the nutritional content of RMs in relation to labile water-soluble vitamins undergoing food processing, such as vitamin B1 or B2. Accurate estimations of certain water-soluble vitamins is important to understand whether RMs contribute sufficient amounts of these essential vitamins to the diet to meet the nutrient requirements for those who consistently consume RMs. The 'sausage and mash' range of RM is one of the most popular RMs eaten by meals-on-wheels users and purchased in supermarkets. The aim of this study is to compare process-labile vitamin content; vitamin B1 and B2, in sausage and mash RMs, and carry out price comparison between meals.

Method



Results

- RMs significantly differed between providers where vitamin B1(x^2= 8.073, $p<0.05$) and B2(x^2= 7.964, $p<0.05$) content was between 0.033-0.089mg/ serving and 0.009-0.021mg/100g , respectively. (Figure 1)
- The price of the RMs ranged between £2.00-£3.50.
- Analysis showed that cheaper meals had a higher thiamine content (r= -0.675, $p<0.001$), which could be due to the presence of green peas; a source of thiamine, in one of the cheaper RMs.
- Results showed that the percentage(%) of meat/serving was higher in the more expensive meals (r= 0.603, $p<0.001$), and the cheaper meals had a higher percentage of mashed potatoes(r= -0.837, $p<0.001$).

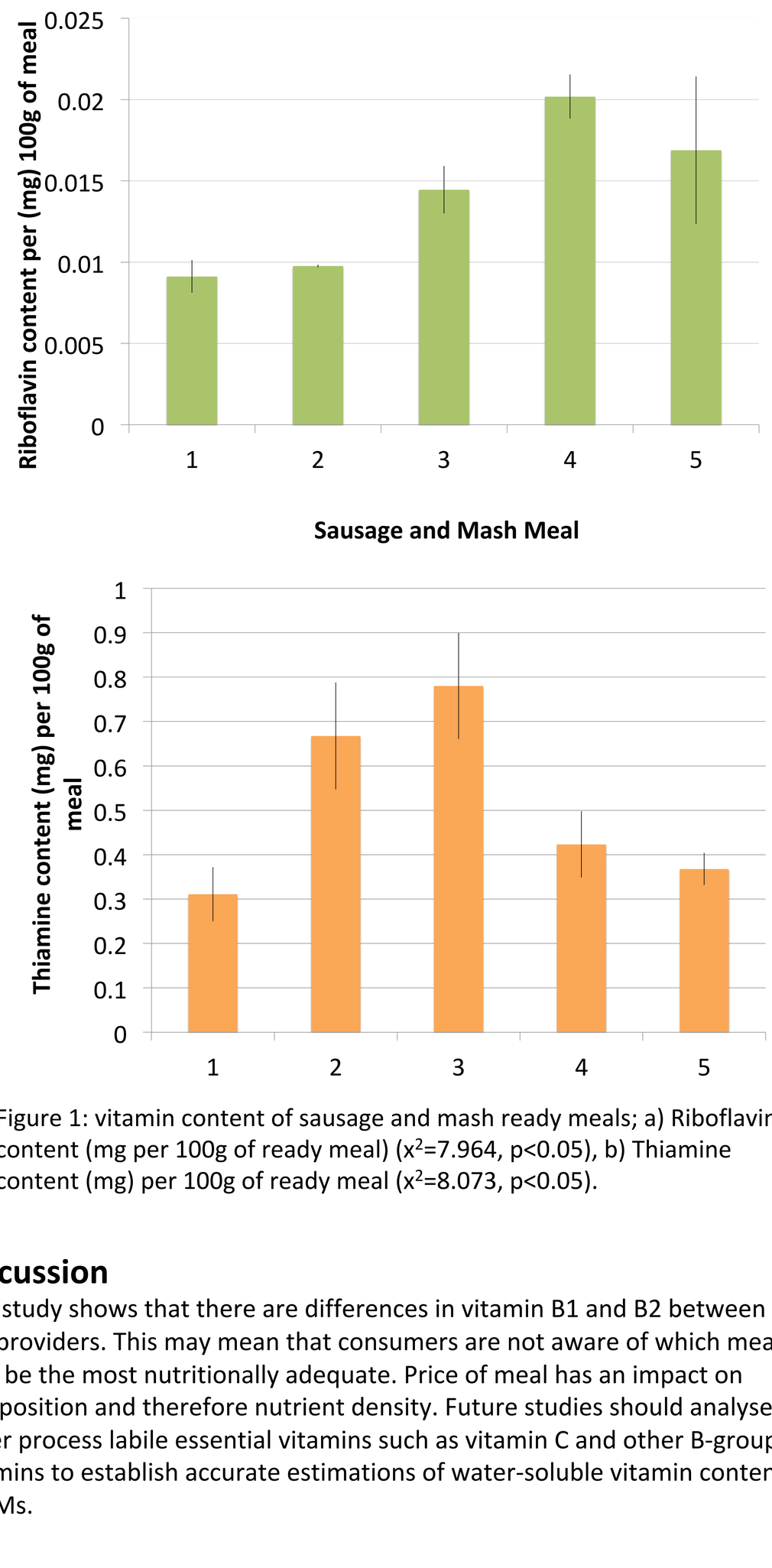


Figure 1: vitamin content of sausage and mash ready meals; a) Riboflavin content (mg per 100g of ready meal) (x^2=7.964, $p<0.05$), b) Thiamine content (mg) per 100g of ready meal (x^2=8.073, $p<0.05$).

Discussion

This study shows that there are differences in vitamin B1 and B2 between RM providers. This may mean that consumers are not aware of which meals may be the most nutritionally adequate. Price of meal has an impact on composition and therefore nutrient density. Future studies should analyse other process labile essential vitamins such as vitamin C and other B-group vitamins to establish accurate estimations of water-soluble vitamin content in RMs.

Potential for the UK Farming Industry

- The Peas Please campaign (Food Foundation, 2012) aimed at increasing the vegetable content of ready meals
- Vegetables add nutrients to a meal at a lower cost than meat
- Pledges have already been made from the likes of Sainsbury's and LIDL
- Only one meal had a distinct vegetable portion

Peas Please
Making a pledge for more veg

University of Hertfordshire

Perry Foundation

References:

- The Food Foundation (2019) [online] accessed: 9th April 2019, URL: https://foodfoundation.org.uk/veg-pledges/
- CELNIK, D., GILLESPIE, L. & LEAN, M. E. J. 2012. Time-scarcity, ready-meals, ill-health and the obesity epidemic. *Trends in Food Science & Technology,* 27**,** 4-11.

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