A recent meta-analysis estimates that around 2-5% of children are affected by food allergy that can be clinically confirmed. However, up to 35% of the population self-report food allergy (Rona et al., 2007). As the only effective treatment at present is total avoidance of the allergen and emergency treatment of symptoms caused by accidental ingestion, quality of life can be affected in a profound way (King, Knibb & Hourihane, 2009).

Children diagnosed with food allergy and their parents are given a large amount of information at clinic regarding diet and use of medication. However, little is known about the level of understanding children might have about food allergy, and parents of children with food allergy have been reported to gather the majority of their information about food allergy from the media and family and friends rather than medical sources (Knibb & Semper, 2008).

The preliminary data presented here are part of a larger, ongoing study to investigate levels of sophistication of knowledge in children and adults with and without food allergy. A further objective is to investigate children’s and adults’ scientific reasoning. Previous studies on scientific reasoning within an oral health context (Croker & Buchanan, 2008; under review) show that context, prior beliefs and a good/bad outcome can have an effect on performance on hypothesis-testing tasks (see Figure 2).

Method

Eight adults with clinically confirmed food allergy and 21 adults without food allergy were given a hypothesis-testing task in which they had to choose a set of food consumption patterns in order to test hypotheses about which foods do or do not cause symptoms (see Figure 1). Participants were presented with two scenarios about individuals who either do or do not experience food-allergy symptoms. In the bad outcome condition, the character in the story experienced food-allergy symptoms and had a belief about what food caused the symptoms. In the good outcome condition, the character experienced no symptoms because they avoided several foods, but had a belief about which particular food was responsible. In both cases, the characters believed that peanuts were the potential cause of symptoms. Participants were asked to choose which of three alternative patterns of food consumption could be used to test the character’s hypotheses. Participants were then asked to verbalise their decision making process and give reasons for their answers.

Results

There was no effect of outcome on task success, neither did participants’ experience with food allergy have an effect (see Figure 3). Across conditions, 62-67% of participants chose the VOTAT response. Almost all the other answers were the HOTAT response; only 3 participants chose the CA response in the good outcome condition, and one chose CA in the bad outcome condition.

Discussion

These results contrast with previous findings (Croker & Buchanan, 2008) in which an effect of outcome was found, with adult participants achieving greater task success in bad outcome scenarios across several contexts. One explanation for this difference may be that whereas good oral health requires behaviours such as tooth-brushing and visiting the dentist to be actively carried out, a good outcome with respect to food allergy requires avoidant behaviours. Alternatively, it may be that participants’ answers are mediated by the potential severity of making an incorrect choice in a food allergy context, which is both greater and more proximal than in an oral health context.

Croker & Buchanan (2008) also found an interaction between outcome and belief in participants aged 6-10 years. If the evidence presented in the task was inconsistent with their beliefs about oral health, they scored higher in the bad outcome scenario. If the evidence was consistent with their beliefs, the effect of outcome was reversed, with a greater proportion of participants succeeding in the good outcome scenario.

In order to determine if these same effects of knowledge and good/bad outcome occur in children on the food allergy task, we are currently collecting data from children with and without food allergy.

References