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## CHALLENGES FACED BY EXPATRIATE CHILDREN WITH FOOD ALLERGY IN AN ASIAN COUNTRY

Food allergy is more prevalent in the West compared with in Asia.<sup>1</sup> Correspondingly, food allergy awareness in the Asian community is lower. It is anticipated that this disparity in community awareness between regions would affect the social adjustments of children with food allergies and their families who migrate from Western countries to Asia. We, therefore, sought to determine how parents of expatriate children coped with food allergy in Singapore. With Singapore being an Asian country with first-world economic and health care standards, we believe that the findings from this study would be largely reflective of developed and developing Asian countries.

A self-administered survey based on a validated quality-of-life questionnaire<sup>2</sup> was distributed to expatriate members of Food Allergy (Singapore), a support group for food-allergic families to which most expatriate families belong. Information on differences in stress after immigration and the reasons behind these were collected.

Fifty-three of 84 expatriate members (63%) responded to the survey, of whom 33 (62%) had previously lived in a Western country for at least 2 years. We had complete responses from 30 of these 33 members (91%). Approximately equal numbers of respondents were from North America, Europe, and Australia/New Zealand. The most common allergenic foods were peanuts (72.7%), egg (63.6%), tree nuts (57.6%), and milk (45.6%). Based on answers to the question, "How has living in Singapore altered your stress level compared with living in the West?" 13 of 30 families (43%) experienced mild to moderate and 8 (27%) extreme increases in stress levels. Of the 9 families who felt no increase in stress after immigration, no significant differences in demographic characteristics were identified to account for the difference in stress perception.

We present findings from this subset of 21 parents who identified stressors after moving to Singapore (Table 1). These stressors included concern about their child's teacher's lack of aware-

Table 1. Contribution of Specific Factors to Stress Levels in Expatriate Families After Migration to Singapore

| Stress factor                                | Contribution to parental stress level, No. (%) (n = 21) |                      |                   |
|----------------------------------------------|---------------------------------------------------------|----------------------|-------------------|
|                                              | Not at all                                              | To a moderate extent | To a large extent |
| Teacher's awareness of food allergy          | 3 (14.3)                                                | 7 (33.3)             | 9 (42.9)          |
| Safety concerning food labeling              | 3 (14.3)                                                | 6 (28.6)             | 11 (52.4)         |
| Food preparation in restaurants and eateries | 3 (14.3)                                                | 2 (9.5)              | 15 (71.4)         |
| Availability of adrenaline autoinjectors     | 8 (38.1)                                                | 6 (28.6)             | 6 (28.6)          |
| Quality of medical care in Singapore         | 6 (28.6)                                                | 7 (33.3)             | 7 (33.3)          |

ness about handling the allergic condition (84.5%), poor food labeling (85.7%), and poor food preparation in eateries (85.7%). Food preparation (71.4%) and food labeling (52.4%) caused the greatest rise in stress levels. Almost 35% of parents were unnecessarily concerned that epinephrine autoinjectors were not available in Singapore, although they are. However, this caused no increase in stress levels because expatriate families probably obtained autoinjectors from their home countries.

Unlike countries such as the United States that have passed legislation such as the Food Allergy and Anaphylaxis Management Act or have established protocols for coping with allergic reactions, most Asian countries do not have such measures in schools. Immigrant parents typically opt to enroll their children in international schools, which are generally more aware of food allergy.

Current food labeling laws in Singapore do not require common allergens to be listed separately from other ingredients as a noticeable food warning. This is unlike in the United States, where the Food Allergen Labeling and Consumer Protection Act requires the 8 most common allergens, accounting for 90% of all allergies, to be listed.<sup>3</sup> Similar labeling laws, such as the Food Labelling Regulations (1996) in the United Kingdom<sup>4</sup> and the Australian/New Zealand Food Standards Code (2002)<sup>5</sup> are also in place. Such legislature is rare in most Asian countries. Problems such as identifying local food allergens may account for this. Eating outside the home is another reason for stress because Asian cooking involves the use of a multitude of spices, nuts, and flavorings. Migrant parents have suggested that Asian eateries are not food allergy trained and do not have contingencies to provide safe meals, which is in contrast to the standards they may have been accustomed to in the West.<sup>6</sup>

Parents of food-allergic children expect medical professionals to provide adequate information and advice on dealing with allergies.<sup>7</sup> However, the present study suggests that approximately two-thirds of expatriate parents were moderately or extremely stressed by the inability of medical professionals to meet their expectations. We, therefore, suggest the following as an advisory to expatriate parents travelling to or living in Asia. Parents are advised to purchase prepackaged imported foods in Asian supermarkets, avoiding poorly labeled produce, and to have increased vigilance when eating at local restaurants owing to the possibility of cross-contamination. They may also want to

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supply their child's school with a written protocol for dealing with their child's allergic reactions and ensure that the teachers are properly trained to deal with such reactions. Parents should ideally consult a food allergy specialist, who would be able to provide proper advice on how to best manage their child's allergies in a new environment.

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