

Canadian parent perceptions of oral food challenges: A qualitative analysis

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To the editor:

Oral food challenges (OFCs) are the gold standard diagnostic test for food allergy.¹ However, families face barriers to OFCs. Data on the Canadian caregiver perspective on OFCs are lacking.² Therefore, our study aimed to assess perceptions of OFCs among Canadian parents of children with food allergy.

We recruited parents of children with allergist-diagnosed food allergies from British Columbia (BC) and Ontario to participate in focus groups. Focus group questions (Table 1) were developed from literature reviews and expert opinions. Participants were recruited through advertisements at allergy clinics and on social media. Participants provided written informed consent. Focus groups were audio-recorded and transcribed verbatim. Data collection ended when data saturation was achieved. Data were analyzed using the constant comparative method.³ Coding was performed using NVivo (<https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home>, [RRID:SCR_014802](#)), version 12.6. The study was approved by the BC Children's Hospital (BCCH) Institutional Review Board.

TABLE 1. Focus group guide

1. What does the term oral food challenge mean to you?
2. Why would someone be told they need an oral food challenge?
3. How often do you think allergists actually perform oral challenges?
4. Tell us about an experience your child had with an oral food challenge.

5. What barriers can you think of that prevent your family from participating in an oral food challenge?
6. What solutions might make it easier for your family to participate in one?

Between June 2017 and January 2018, 51 parents participated across six focus groups (three per province). Each focus group had 8–9 participants and lasted 2–3 h. Participant demographic information is provided in Table 2. Most participants were of European origin, female, and socioeconomically advantaged. Half had children who had undergone OFCs. In Ontario, 41.5% had children with multiple food allergies—these data were not available from BC. Figure 1 summarizes perceived barriers to OFCs and solutions. Table A1 provides representative quotes for themes.

TABLE 2. Demographic characteristics of participants

	All participants <i>N</i> = 51 <i>N</i> (%)	British Columbia <i>N</i> = 27 <i>N</i> (%)	Ontario <i>N</i> = 24 <i>N</i> (%)
Parent characteristics			
Age in years, median (interquartile range)	43 (39–49)	44 (40–49)	41.5 (35–47)
European origin	42 (82.3)	19 (70.3)	23 (95.8)
Female	39 (76.4)	22 (81.5)	17 (70.8)
Family income >\$100,000	28 (54.9)	12 (44.4)	16 (66.6)
Post-secondary education	45 (88.2)	24 (88.9)	21 (87.5)
Healthcare professional	7 (13.7)	5 (18.5)	2 (8.3)
Child characteristics [†]			
Allergist diagnosis based on history plus:			
Skin prick test only	8 (15.7)	3 (11.1)	5 (20.8)
Skin prick test +food specific IgE	38 (74.5)	20 (74.1)	18 (75.0)
Oral food challenge [‡]	28 (54.9)	15 (55.6)	13 (54.2)

† Parents that reported having children with the listed characteristics.

‡ In combination with skin prick tests and/or serum IgE level assessment.

§ N/A, Data not available.

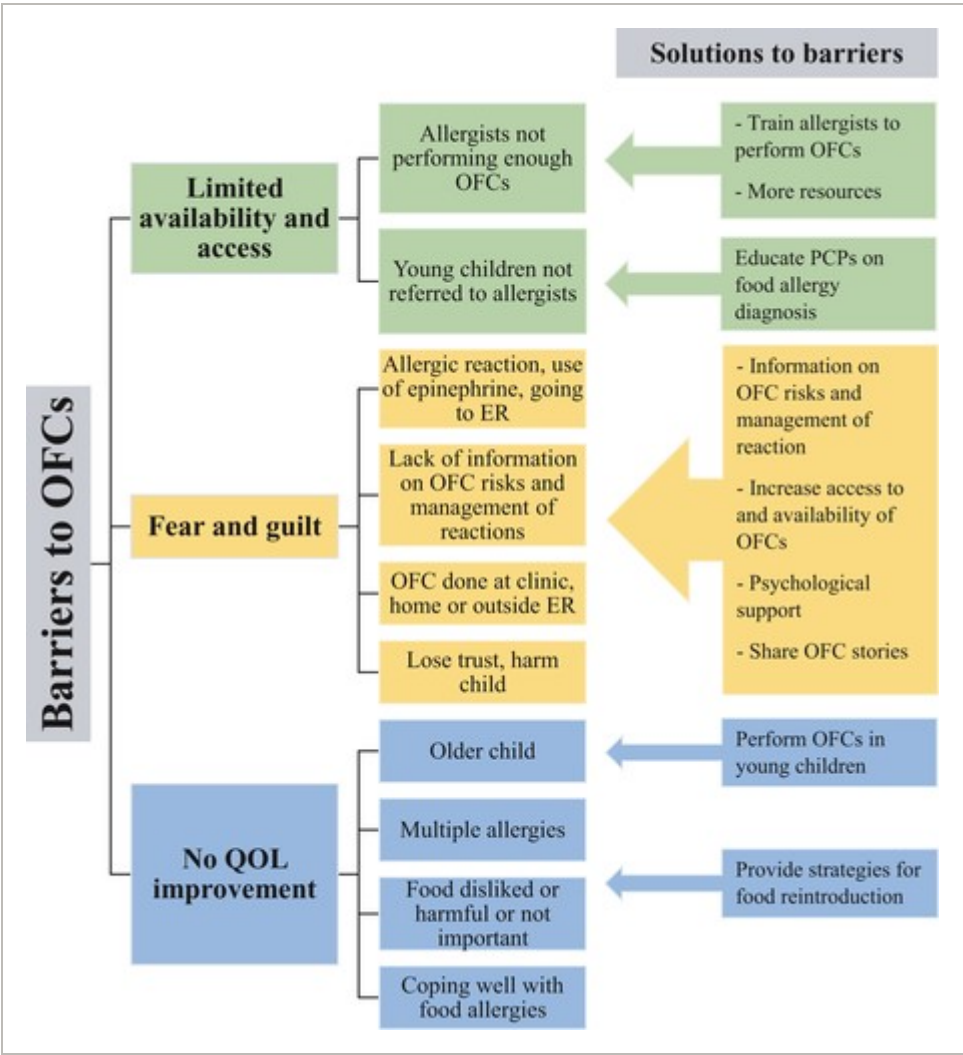


FIGURE 1

[Open in figure viewer](#) | [↓PowerPoint](#)

Perceived barriers to OFCs and solutions to barriers proposed by parents. Colors represent barriers that belong within a theme and its corresponding solution. OFC, Oral food challenge; PCP, Primary care physician; QOL, Quality of life; ER, Emergency room

Parents misunderstood the purpose of OFCs and reported doing OFCs in clinics, hospitals, homes, and outside emergency rooms (ERs). Parents described OFCs as “*treatment [and] desensitization*” to ensure children are “*not going to have an anaphylactic experience in the future.*” Parents also described OFCs as “*trying different foods that could possibly be a problem.*” Parents indicated that OFCs “*should be done in hospitals*” as they are “*set up for a real emergency.*” Parents also described doing OFCs at home in BC and Ontario, and outside ERs in BC with “*less severe allergens*” based on low-risk testing and never having had a reaction. These experiences were described as “*scary*” and were done because families were

“never offered a challenge.”

Parents perceived limited availability of and access to OFCs. Parents experienced *“long wait lists”* and reported allergists *“are not performing enough”* OFCs. In Ontario, parents experienced *“pushback”* from primary care physicians (PCPs) to provide allergist referrals for young children because *“they couldn't get tested so early,”* or due to misdiagnosis of food allergies. Parents wanted *“more availability for food challenges”* and *“education for family doctors.”*

Parents experienced fear surrounding OFCs. Parents feared *“an unsuccessful oral challenge,”* *“use of EpiPen®,”* and *“go[ing] to Emergency,”* which stemmed from a lack of information about OFCs. Parents perceived older children as being more fearful of OFCs than younger children because of *“more knowledge of the consequences.”* Parents experienced *“guilt”* as OFCs involved *“putting [children] in harm's way.”* Parents wanted information on OFC risks, management of reactions, psychological supports, and *“personal stories to identify with.”*

Parents perceived limited quality of life (QOL) improvement after OFCs if children were coping well with the food allergy. This was true for older children as *“they've lived this way forever,”* and children with multiple food allergies as parents saw little benefit to eliminating a single allergen. OFCs were deemed less important for foods that were disliked and perceived as harmful or unimportant. After an OFC, parents wanted information on *“how to implement [the allergenic food] into your life.”*

Overall, Canadian parents of children with food allergies report misconceptions about the purpose of OFCs; prefer hospital-based OFCs; and experience barriers such as limited availability and access, fear and guilt, and limited improvement in QOL.

In a survey of parents of children with food allergy in BC, 41% reported lacking OFC knowledge especially parents whose children had never done OFCs and 91% preferred hospital-based OFCs.² We report that knowledge gaps stem from a misunderstanding of OFCs as food allergy treatment and as introduction of common allergenic foods, suggesting a need for educational efforts to help families delineate these differences. Preference for hospital-based OFCs may originate from a lack of understanding of OFC risks and management of reactions. Although parents reported doing OFCs at home or outside ERs, parents may have been describing food introductions as these were done with less severe allergens. Parents had negative experiences in these settings which were utilized when OFCs were not offered, highlighting the importance of shared decision making in food allergy management. Additionally, low billing fees for food allergy visits in Ontario and lack of a dedicated OFC billing code in BC may also play a role in parental reports of OFCs not being offered.⁴ Surveys of Canadian and American allergists report poor reimbursement as a barrier to OFCs.^{2, 5} This finding is important for countries with low OFC billing fees as this may result in risk-taking behaviors by families such as trying allergenic foods without physician supervision. Consideration of parent perspectives on OFC setting is important

during the COVID-19 pandemic as there is interest in home OFCs with physician supervision using telehealth.⁶

Parents perceived older children as being fearful of OFCs and wanted OFCs to be performed at a young age. However, parents in Ontario reported hesitancy of PCPs to make allergist referrals for young children. This was not reported in BC. BCCH conducts an annual allergy continuing professional development event for PCPs, which may contribute to a willingness to refer. Surveys of PCPs in the United States reveal that few are knowledgeable about OFCs.⁷ In Canada, PCPs that are knowledgeable about OFCs are more likely to refer to allergists who perform OFCs.² Additionally, family medicine residency in Canada does not include mandatory food allergy training.⁸ As such, there is a need for countries to incorporate food allergy training in primary care to ensure early referrals and testing for food allergy.

Fear surrounding OFCs has been reported previously.² Parents in our study report strategies to overcome fear such as psychological support, which is recommended by current guidelines.¹ Additionally, parents wanted a platform to share OFC experiences. In a study of parent-to-parent food allergy mentorship, mentees expressed an interest in being mentored by parents with OFC experience.⁹

Parents in our study perceived limited QOL improvement among children with multiple food allergies and older children as former allergenic foods were often not reintroduced. Although previous studies report improved QOL after OFCs, parents of children with multiple food allergies and older children were less likely to experience QOL improvements.¹⁰

Limitations of our study include participant recruitment from allergists' practices, which may have selected parents of severely food-allergic children. Additionally, allergists discussed OFCs with all patients and therefore parents may have been knowledgeable about OFCs. Half the participants had done OFCs, and focus groups were not stratified based on OFC experience. Therefore, we could not conclude whether OFC knowledge gaps were influenced by OFC experience. Additionally, participants were primarily of European origin, female, and socioeconomically advantaged and therefore are not entirely representative of the food allergy population in Canada. This demographic is common in food allergy research and may be secondary to recruitment from allergy practices.

In summary, our study reveals Canadian parent perspective on OFCs. Interventions to educate parents and healthcare providers about OFCs and address barriers may improve uptake of OFCs.

CONFLICT OF INTEREST

JP sits on the steering committee of Canada's National Food Allergy Action Plan, is Section Head, Allied Health, Canadian Society of Allergy and Clinical Immunology, and performs

research with DBV Technologies. LS performs research with DBV Technologies. ESC has received research support from DBV Technologies; has been a member of advisory boards for Pfizer, Pediapharm, Leo Pharma, Kaleo, DBV, AllerGenis, Sanofi Genzyme, Bausch Health, and Avir Pharma; is a member of the healthcare advisory board for Food Allergy Canada; was an expert panel and coordinating committee member of the National Institute of Allergy and Infectious Diseases (NIAID)–sponsored Guidelines for Peanut Allergy Prevention; and was co-lead of the CSACI oral immunotherapy guidelines. HK has been on speaker's bureaus and/or advisory boards for ALK, Aralez, Astra Zeneca, GSK, Kaleo, Mylan, Pediapharm, Pfizer, and Stallergenes Greer. SJ has been on speaker's bureaus for Aralez, Novartis, Astra Zeneca, and Sanofi, and on the advisory board for Sanofi.

AUTHOR CONTRIBUTIONS

Natasha Correa: Formal analysis (equal); Writing – original draft (lead). **Jennifer Protudjer:** Conceptualization (equal); Methodology (equal); Writing – review & editing (equal). **Elaine Hsu:** Conceptualization (equal); Formal analysis (equal); Investigation (equal); Methodology (equal); Writing – review & editing (equal). **Lianne Soller:** Conceptualization (equal); Investigation (equal); Methodology (equal); Writing – review & editing (equal). **Edmond S Chan:** Conceptualization (equal); Methodology (equal); Writing – review & editing (equal). **Harold L. Kim:** Conceptualization (equal); Investigation (equal); Methodology (equal); Writing – review & editing (equal). **Samira Jeimy:** Conceptualization (equal); Formal analysis (equal); Investigation (equal); Methodology (equal); Supervision (lead); Writing – review & editing (equal).

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Supporting Information



Filename	Description
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