Minority Ethnic Group Disparities in Children with Cow's Milk Allergy

The hidden inequity and what we can learn from broader evidence across allergy

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Cow's milk protein allergy (CMPA) is one of the most common food allergies in children, estimated to affect 2-3% in the UK.[1] For most, this should trigger a clinical pathway of care; but, do we know if access equally reaches all children in the UK? Greater burden and poorer clinical outcomes among minority ethnic groups with allergic diseases are reported in high-income countries, including the UK.[2, 3] Minority ethnic groups make up nearly one-fifth of the population in England and Wales.[4] Children with CMPA from minority ethnic groups may face compounding barriers that affect their clinical journey (see Table 1). This article aims to understand what some of the evidence reveals on CMPA in children from minority ethnic groups, and where lacking, draw on research in other areas, and to inspire dietitians and clinicians to think more inclusively.

Prevalence data: What does it really tell us?

In the last decade, prevalence rates of CMPA have not substantially changed, however data on hospital admissions for food-induced anaphylaxis in the UK between 1998 and 2018 have shown an increase, and CMPA represents a quarter of deaths by food anaphylaxis in school-age children.[5, 6] Strikingly, none of these datasets reports on the differences by ethnic groups. Beyond these, data from the US, New Zealand and Australia have shown that food allergy is more common and severe among minority ethnic children.[7–12]

Are there differences in clinical outcomes?

Data on clinical outcomes in children with CMPA from minority ethnic groups in the UK are also lacking. Drawing on broader allergy research, UK-based adult data from the West Midlands found significantly more frequent food allergic reactions in South Asian patients compared to White counterparts (81% *vs* 45%; p=0.01), despite similar levels of care.[13] This suggests disparities beyond the service, in the home, community and wider system. A related study in the same region found higher rates of non-fatal anaphylaxis and severe anaphylaxis in South Asian children with allergies compared to White children, with the authors noting epigenetics as one potential factor among many.[14]

Outside of the UK, a scoping review of paediatric data, mostly originating from the US, on food allergy and food insecurity reported that minority ethnic children were significantly more likely to face food insecurity than White children. This also correlated with worse food allergy-related quality of life scores.[15] Some of these findings emerged from the prospective research cohort – the FORWARD study (Food Allergy Outcomes Related to White and African American Racial Differences), which is aiming to understand and eliminate health disparities by tracking a diverse group of Black, White and Latinx children with food allergies. In another one of their reports, racial differences in the timing of food allergen introduction were examined and revealed that Black children were introduced to food allergens, including cow's milk, later than White children.[16]

Table 1: Disparities in food allergy management

Awareness of food allergy	• Education: ◦ In schools/educational settings ◦ Paediatric healthcare settings
Prevention	• Early introduction of allergens
Diagnosis	• Prevalence • Doctor/medical practitioner diagnosis
Acute management	• Access to adrenaline auto-injectors/ epinephrine injectors (e.g. EpiPen) • School policies and preparedness • A&E use
Long-term management	• Access to: ◦ Subspecialty care ◦ Available therapies (e.g. oral immunotherapy) ◦ Allergen-free/free-from foods • Management of food insecurity • Education of caregivers
All influenced by racial, ethnic and socioeconomic status	

Source: Adapted from Tepler E, Wong KH, Soffer GK (2022). Health disparities in pediatric food allergy. Ann Allergy Asthma Immunol.; 129(4): 417–423.

Findings in the UK's Enquiring About Tolerance (EAT) study, which studied the introduction of peanut, cow's milk, sesame, fish, egg and wheat, showed that in the standard introduction group, food allergy cases were disproportionately non-White (71.4% *vs* 28.6% White), despite non-White participants making up only 15.3% of the study population. Non-white groups were also less likely to adhere to early allergen introduction protocols. At enrolment, sensitisation to one or more foods significantly differed by minority ethnic group too (48.6% Black/South Asian, 22.9% Mixed Race and 12.3% White).[17] Taken together with the FORWARD finding that Black children were introduced to cow's milk later than White children, these data suggest that delays and lower adherence to early allergen introduction may both be contributing to racial disparities in food allergy burden, including CMPA.

Barriers to effective management

Effective management of CMPA involves extensive education and requires families to read food labels, navigate milk ladders, recognise reactions and, to some extent, understand the mechanisms of food allergy. This can be complicated by language barriers, health literacy and limited culturally appropriate information, which may explain the greater burden of allergy seen in minority ethnic groups.[3] Notably, such barriers do not operate in isolation and are shaped by social determinants of health, which are the structural inequalities in income, education, housing and geography that determine the circumstances of living conditions. These often fall disproportionately on minority ethnic communities.[18]

A small but important qualitative study by Peckover *et al.* (2021) offers other insights into how barriers operate from the perspective of families.[19] Conducted in Sheffield with ten South Asian mothers of children with food allergy, the study found a complex interplay of factors contributing to delayed presentation to specialist allergy services. Nine of the ten mothers experienced delayed first attendance at the allergy clinic, with four waiting two years or longer after the initial reaction. Critically, these delays were largely unrecognised by the mothers themselves. Initial symptom uncertainty was common, and for most, the first response was to consult family and friends rather than seek medical advice. In some cases, self-led management included prolonged breastfeeding, dietary restriction, or soya milk substitution, which further delayed formal diagnosis. Notably, six of the mothers had been born in the UK, underscoring that these barriers are not confined to first-generation migrants or language-limited families but are embedded in wider cultural and systems.[19]

The study also identified a lack of allergy awareness and misconceptions about food allergy within the South Asian community, and called for community-level education as a priority. Of particular note, one of the two children with CMPA in the study was initially self-managed, with the family first seeking medical advice in Pakistan before eventually attending a GP in England three years after the initial reaction. This case illustrates how cultural norms, transnational healthcare behaviours and community trust can all interact to delay diagnosis and appropriate management. The authors conclude that healthcare professionals (HCPs) need to be aware not only of potential hesitancy around recognising and seeking help for childhood food allergy, but also of the wider lack of trust towards formal healthcare.[19]

Another pilot study, albeit not specific to allergy, sheds light on the perceptions of healthcare in a small first-generation migrant community living in Medway, UK.[20] Participants identified a perceived lack of culturally inclusive dietary resources, and that information was difficult to adapt. Some participants reported that they would rather rely on communal groups to seek health information, which was echoed by participants in the Peckover *et al.* study.[19, 20] This raises the risk that HCP advice won't necessarily be sought out, and underscores the need to build trust within communities to co-produce culturally inclusive resources.

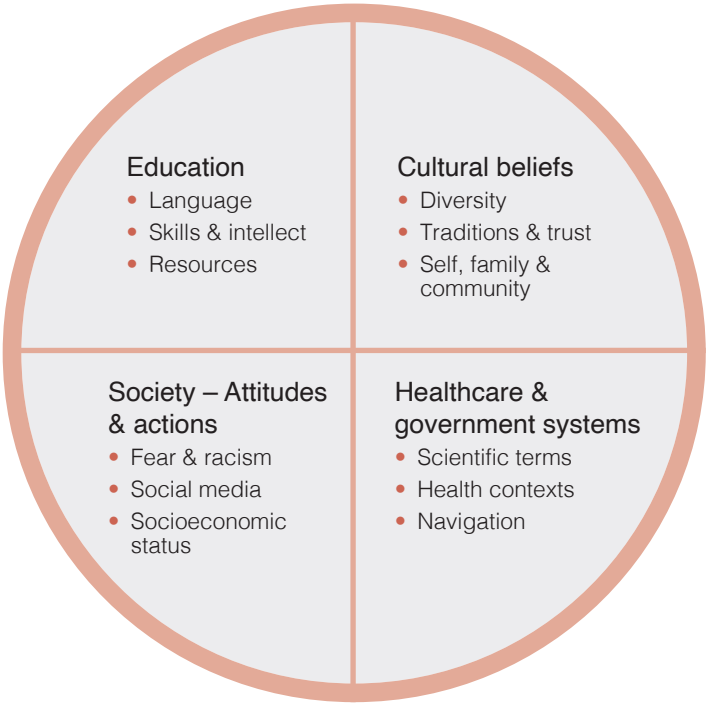
Tools & resources to support an inclusive practice

Neither the iMAP (Milk Allergy Primary Care) guideline nor the National Institute for Health and Care Excellence (NICE) guidelines on food allergy meaningfully address culturally appropriate care.[21, 22] While the NICE guidelines mention that cultural and religious factors that affect diet should be explored as part of an assessment, there is no guidance on how and what to do with the information. The iMAP guidelines do not contain guidance on culturally adapted alternatives to the standard milk ladder, which is built around Western foods. The recent development of Indian and Ukrainian Milk Ladders, using culturally familiar baked milk foods to achieve tolerance progression, are important proofs of concept.[23, 24] However, these resources are based on more traditional diets that might not reflect the diets of those who have migrated to Western countries.

Leicester's Children's Allergy Service has co-produced a home-baked milk ladder with their South Asian population, which includes common foods and recipes from Gujarati, Punjabi, Pakistani and Bangladeshi households. This a strong example of how working in partnership with local communities can produce resources that are genuinely culturally relevant rather than simply culturally assumed. In a preliminary report, the ladder was well received, and they seek to refine the resource as well as develop bespoke ladders for other communities.[25]

Addressing these barriers does require more than better resources. A health literacy model explains the intersection of education, cultural beliefs, society attitudes and healthcare systems that shape outcomes – meaning that a family's ability to act on CMPA guidance depends not just on the quality of the information provided, but on their prior experience of healthcare, their beliefs about illness and treatment, and whether they trust the source.[26] **Figure 1** details 'The Health Literacy Model', which proposes 4 intersecting concepts that 'shape health outcomes', with each section representing both 'a barrier and an opportunity for intervention'; particularly relevant for those individuals from ethnic minority groups.[26] Importantly, research suggests that strategies addressing structural barriers to access have a deeper impact on health inequalities (see **Figure 2**).[3, 27]

Figure 1: Example of 'The Health Literacy Model'



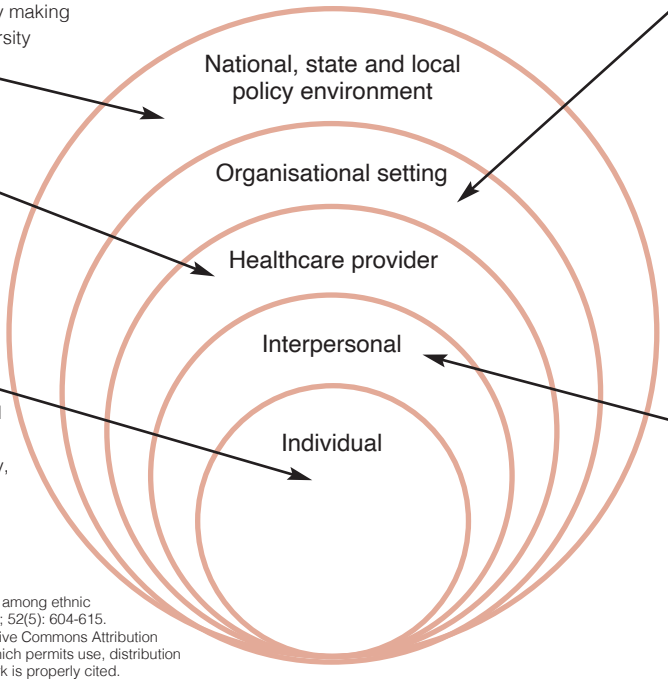
Source: Adapted from Ogbogu PU, *et al.* (2022). Methods for Cross-Cultural Communication in Clinic Encounters. J Allergy Clin Immunol Pract.;10(4): 893–900.

Figure 2: Factors to target to improve ethnicity-based outcomes in allergic disease[3]

Policy environment factors
- Inclusion of ethnic minority groups in policy making
- Research in relation to difference and diversity with adequate financial resources
- Guidelines based on inclusive research

Healthcare provider factors
- Awareness of implicit bias (e.g. reduced diagnosis and underprescribing)
- Signposting to culturally appropriate services/resources
- Cultural sensitivity/and effective communication

Individual factors (patient and carers)
- Demographics (e.g. education, literacy, economic stability, neighbourhood deprivation, residential segregation)
- Health beliefs (e.g. perceived susceptibility, severity, efficacy of treatment)
- Health seeking behaviour
- Cultural and religious beliefs
- Prior experience with healthcare



Organisational factors
- Partnering with community based organisations (e.g. schools and faith groups)
- Training for HCPs on cultural competence
- Address institutional and structural discrimination
- Culturally sensitive and translated patient-facing resources
- Equality and diversity advisory committees
- Non-discrimination policies
- Patient navigator/advocate/champions
- Workforce diversity
- Organisational culture

Interpersonal considerations
- Peer/family education awareness of health and needs
- Community and faith leaders opinions/ peer support
- Address community misconceptions about allergic disease and treatments
- Relationships with healthcare professional
- Stigma, discrimination

Conclusion: Thinking more inclusively

Although the evidence presented in this article is limited, it highlights the burden of disparities in food allergy care and management in minority ethnic groups. Families with CMPA may be less likely to be efficiently diagnosed and referred, more likely to experience worse outcomes, and have fewer tools that reflect their cultural norms. The absence of sufficient ethnicity-disaggregated data in the UK is not a neutral omission but an equity problem in itself.

Many minority ethnic groups, such as Arab, Southeast Asian, Black African/Caribbean and White Other, are not represented in the literature; even within the full range of South Asian populations, groups such as Bangladeshi or Nepali are often omitted. An important view from Peckover et al. noted: "The South Asian population are not a homogenous group and factors such as social class, dietary practices, religion and migration history are important," which is a caution that applies to all minority ethnic communities and limits the transferability of findings. This requires HCPs to acknowledge diversity within groups and lead with curiosity when managing minority ethnic patients and families.

While the healthcare systems around CMPA management may not equally serve all families who need support, dietitians and clinicians can advocate for:
- CMPA-specific data reporting by ethnicity from UK datasets
- Building trust within minority ethnic communities and networks
- Developing and sharing culturally adapted educational resources, co-produced with minority ethnic patient communities
- Acknowledging openly with families when evidence or tools are limited in their applicability to their cultural competence
- Professional interpreting as a standard, with proper clinical time allocated
- Lobby for a national audit and review of food allergy service provision and equitable access pathways for minority ethnic communities in the UK
- Greater opportunities for cultural competency training in the NHS.

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