

International compliance with WHO infant feeding guidelines – Is the confusion cause for concern?

To the Editors,

In an age of globalization, provision of clear and consistent infant feeding guidelines is of growing international importance. Early life nutrition, particularly during the first 1000 days, has an important influence on long-term health and suboptimal infant feeding practices may not only result in impaired growth and development but also increase the risk of noncommunicable diseases including food allergy and obesity.¹ Clear and consistent infant feeding guidelines are therefore of paramount importance for ensuring that young children are introduced to appropriate solid foods at the correct stage of life to decrease these potential risks and to reduce confusion amongst parents.

While the World Health Organization (WHO) infant feeding guidelines² state that infants should be exclusively breastfed for 6 months and breastfeeding should continue for up to two years of age or beyond, infant feeding guidelines from peak organisations vary worldwide.^{3–5} We recently reviewed consumer infant feeding advice finding disparity between Australian states.⁶ We now aim to expand this review to examine infant feeding guidelines around the world and compare international consistency with WHO infant feeding recommendations.

Guidelines from 187 countries were reviewed and categorized using the methodology and predetermined criteria outlined in the online repository. Of the 187 countries investigated, 41.7% used the exact wording of the WHO infant feeding guidelines across both categories investigated (duration of breastfeeding and timing of complementary foods). 41.0% of countries studied had guidelines that partially followed the WHO guidelines, while 17.3% did not follow the guidelines at all or lacked readily accessible infant feeding guidelines (Tables S1 and S2).

Surprisingly, with regards to length of exclusive breastfeeding, the most important of the WHO infant feeding recommendations, only 56.3% fully complied with WHO wording. When comparing compliance of guideline wording by countries' socio-economic status, those guidelines from low-income nations were more likely to be consistent with WHO. Of low and lower middle income countries, 67.3% and 80.6% fully followed the WHO guidelines, respectively, compared with just 34.9% of high-income countries (Figure 1).

Regarding timing of introduction to complementary foods, guidelines from 52.3% of countries surveyed matched the wording of the WHO with introduction at or from 6 months of age (Figure 2). Most (57.7%) were nations of low or lower middle income, while 42.3% were from high or upper middle income. Nations with high or upper middle income were more likely to have guidelines varying from the WHO (78.7%) compared to nations with low or lower middle income (21.3%).

These results show a high inconsistency in compliance with the WHO guidelines, with less than half of countries fully following the WHO guidelines.

Infant feeding guidelines specific to food allergy prevention also vary in compliance with the WHO guidelines (Table S3). In 2016, Australia achieved national consensus on infant feeding guidelines to reduce food allergy risks and ensure clear consumer advice.⁷ This consensus was achieved across state and federal healthcare agencies, consumers and experts in allergy, infant feeding and population health.

A strength of this report is the systematic method used to identify and review the global guidelines for infant feeding. Guidelines written in languages other than English were translated to enable inclusion in this review. A potential limitation includes interpretation of guidelines with ambiguous wording such as "up to 6 months" or "around 6 months." Other limitations included lack of centralized repositories for healthcare policy and geopolitical issues impacting accessibility of infant feeding guidelines.

To our knowledge, no one has previously investigated consistency of infant feeding guidelines worldwide with the WHO infant feeding guidelines. However, we recently found a huge diversity of recommendations in the Australian healthcare system likely due to the fact there are so many infant feeding advisory bodies for parents both locally and at the government level.⁶ A less recent study in Europe found a similar diversity of recommendations in infant feeding.⁸

Available data on breastfeeding indicators (including early initiation, length of exclusive breastfeeding and time of any breastfeeding) vary in quality between countries and are not available for many high-income countries.⁸ The 2016 Lancet Breastfeeding series reports that except for early initiation, rates of all breastfeeding indicators decreased with increasing national wealth.⁸

Differences in national population health priorities may be one reason contributing to differences in wording of the infant feeding guidelines between low- and upper-income countries compared with the WHO guidelines. In low- and middle-income countries, a key focus of infant feeding guidelines is to prevent growth faltering caused by delayed complementary feeding or inadequate feeding practices. This contrasts with high-income countries where malnutrition caused by improper feeding behaviour and poor food choices may present as both under- or overnutrition, and infant feeding guidelines include advice related to prevention of noncommunicable disease.⁹

With recent research highlighting a potential link between infant breastfeeding and obesity and IQ⁸ and timing of introduction to solids with food allergies,^{7,10} consistent and coherent information

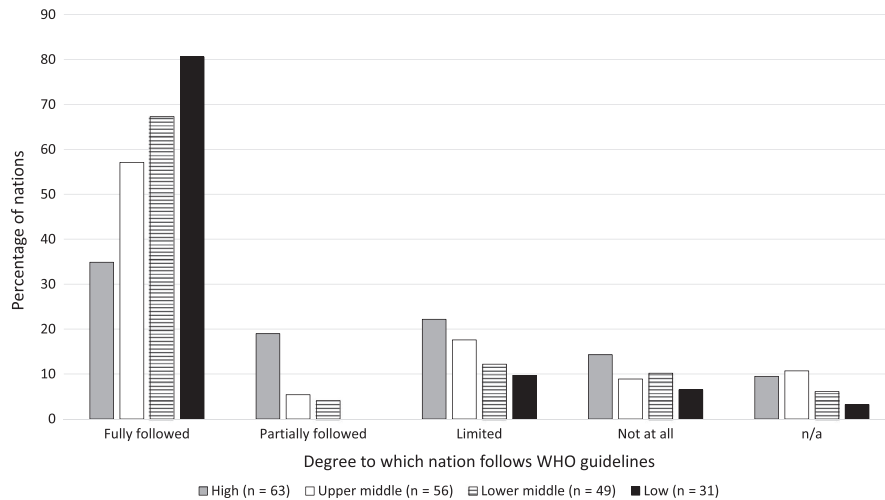


FIGURE 1 Degree to which nations (n = 199) follow WHO infant feeding guidelines for duration of breastfeeding according to country income band (NB: WHO recommends exclusively breastfeeding “for 6 months”)

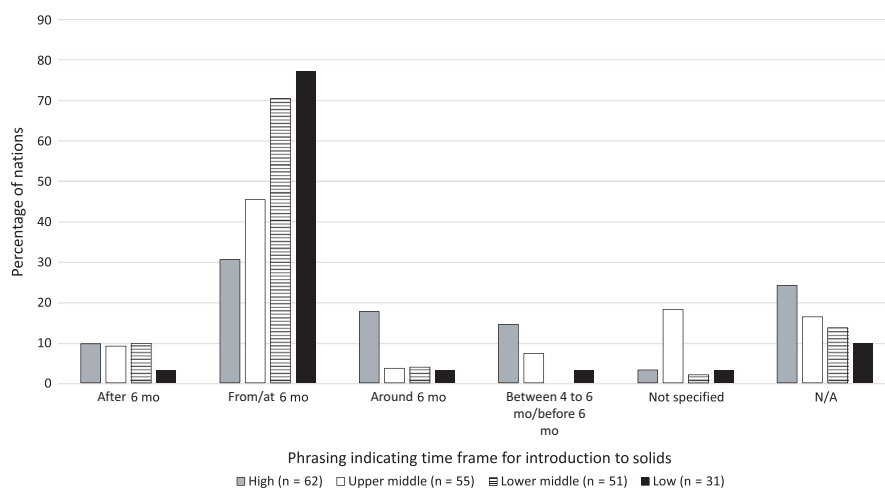


FIGURE 2 Percentage of nations using specific phrasing indicating time frame for introduction to solids by socio-economic status (NB: WHO guidelines specify introduction to solids “from 6 months”)

regarding infant feeding guidelines is of growing importance to ensure that adequate health care is given to infants worldwide. Consistent wording of infant feeding guidelines would ensure clarity for parents seeking advice on breastfeeding and appropriate introduction to solid foods. Where there is a clear need for country-specific guidelines the reasons for this should be clearly communicated.

Different recommendations related to the length of exclusive breastfeeding and timing of introduction to solid foods in infant feeding guidelines globally has left parents and health professionals uncertain of what is best practice for infant feeding. Widespread debate over the discrepancy in wording of infant feeding guidelines results in lack of clarity for healthcare providers which in turn is likely to result in confusion for parents themselves concise answers to parents on the exact time frame for infant breastfeeding and the introduction to solids. The wide variation in wording of infant feeding guidelines is likely to add to confusion by experts and parents alike as they attempt to navigate the optimal way to feed infants.

CONFLICT OF INTEREST

MN has received a speaker's honorarium from Nestle. KA is on the Before Brands and Aravax Medical Advisory Boards. K. J. Allen is currently a Member of the Australian Parliament but all work for this article was undertaken prior to April 12, 2019, by which time she had resigned from all paid and honorary appointments listed. There are no conflicts of interests for any of the other authors pertaining to this work.

AUTHOR CONTRIBUTION

KA and JK devised the study. JA and NE gathered and analyzed the data. MN, JK and KA reviewed and interpreted the data. JA drafted the manuscript. All authors reviewed and approved the final manuscript.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

DOI: 10.1111/all.14007

Concomitant bilastine and montelukast as additive therapy for seasonal allergic rhinoconjunctivitis and mild-to-moderate asthma. The SKY study

To the Editor,

Histamine and cysteinyl leukotrienes (CysLTs) are potent inflammatory mediators involved in both seasonal allergic rhinoconjunctivitis (SARC) and asthma.^{1,2} A combination therapy against both these agents may provide additive benefit, as demonstrated both in vitro³ and in vivo.⁴⁻⁶

We compared the efficacy and safety of concomitant therapy with bilastine, a second-generation H1 anti-histamine⁷ and montelukast vs each agent alone in patient with SARC and asthma. We hypothesized that bilastine plus montelukast is superior to bilastine monotherapy in reducing SARC symptoms after

4 weeks and in improving asthma quality of life over a longer time period.

Adult patients with SARC and mild-to-moderate asthma partially controlled⁸ by beclomethasone dipropionate or equivalent $\leq 500 \mu\text{g/d}$ (alone or in combination with long-term β_2 -adrenergic bronchodilators) were enrolled. Patients had a postbronchodilator FEV₁ > 70% of the predicted, a skin prick test positive to at least one seasonal allergen tested at enrolment or previously reported, and a nasal/ocular Total Symptom Score (TSS) ≥ 3 .⁹ Exclusion criteria are reported in the online supplementary. The study (EUDRACT number:2015-004806-40) was conducted in 50 centres across