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IRON AND VITAMIN A NUTRITION OF YOUNG AUCKLAND CHILDREN:
An Investigation into the Methods to Assess the Nutritional Status of Micro-Nutrients in 6-24 Month Olds.

A thesis presented in partial fulfilment of the requirements for the degree of Master of Science in Nutritional Science at Massey University

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1999
Abstract

This study validated a food frequency questionnaire specifically for identifying iron and vitamin A intake in thirty 6 to 24 month old children. Children were recruited using the cluster sampling technique, and stratified by ethnicity. Of the thirty children enrolled in this study, 7 (23%) were European, 6 (20%) Maori, 11 (36.7%) Pacific Island and 6 (20%) were of Other ethnic groups. From the results of this validation study, 24.19% (7 of 29) of children were iron deficient, 14% (4 of 29) had iron deficiency anaemia and 14% (4 of 29) had vitamin A deficiency.

This validation study compared a food frequency questionnaire against a four day weighed food record and the biochemical status obtained from a blood sample. The Spearman’s ranked correlation values from comparing the food frequency questionnaire administered in the first and second values ranged from 0.132 for chicken to 1 for iron supplements. The limits of agreement method by Bland and Altman tested for the reliability of the food frequency questionnaire and showed good agreement between the two administrations of the food frequency questionnaire. This method was also used to test the validity of this food frequency questionnaire by comparing the differences between the food frequency questionnaire and the four-day weighed food records.

The use of multiple regression analysis of variance was used to identify the contributing variables to iron deficiency, iron deficiency anaemia and vitamin A deficiency. The results of the regression analysis suggested a small significant contributor to the variance in predicting iron deficiency and iron deficiency
anaemia of these children was being Pacific Island and the mean daily iron intake obtained from the four-day weighed food records. The probability values ranged from 0.01 to 0.001 with the greatest level of significance found in the Pacific Island ethnic group.

These findings have important significance in future undertakings of dietary assessment in children and further developments of accurate and reliable dietary tools to assess mean nutrient intake in children.
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<tbody>
<tr>
<td>IDA</td>
<td>Iron Deficiency Anaemia</td>
</tr>
<tr>
<td>VAD</td>
<td>Vitamin A Deficiency</td>
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<tr>
<td>WHO</td>
<td>World Health Organisation</td>
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<td>RE</td>
<td>Retinol Equivalents</td>
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<td>International Units</td>
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<td>Food Frequency Questionnaire</td>
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