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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

Shireen Wei Yuin Chua

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.

Acknowledgements

My sincerest gratitude goes to the following people without whom this study would not be possible:

Dr. Clare Wall, for all her guidance, commitment and encouragement throughout this study.

Dr. Cameron Grant, and the Iron and Vitamin A Research group at Auckland Medical School and Starship hospital for their involvement and their support.

The **care-givers** and **children** involved in this study for their keen participation in this pilot study.

The **Health Research Council** for funding this study.

My **parents and my brother** for their faith in me.

To my **family and friends** who have practically supported and encouraged me throughout this study.

Finally, to my **heavenly Father**, for the inspiration and the passion.

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List of Abbreviations

IDA	Iron Deficiency Anaemia
VAD	Vitamin A Deficiency
WHO	World Health Organisation
RE	Retinol Equivalents
IU	International Units
NHANES	National Health and Nutrition Examination Surveys
Hb	Haemoglobin
SD	Standard deviation
WFR	Weighed Food Records
FFQ	Food Frequency Questionnaire
RDI	Recommended Dietary Intake