DIETARY INTAKE AND NUTRITIONAL STATUS OF KOREAN MIGRANTS IN NEW ZEALAND

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ABSTRACT

Migration to a new country presents many lifestyle challenges that may influence future health outcomes. In particular, eating patterns may be altered due to the expense or lack of availability of foods typical of the immigrant's usual diet and the relative abundance of unfamiliar, locally produced foods. Studies of migrants carried out in host countries have shown that the change of living environment is associated with changes in food choices, activity patterns and other lifestyle factors. This may then be reflected by changes in health indicators: e.g., body measurements, and consequently morbidity and mortality. The latest census indicates that Koreans are the fastest growing ethnic group and the third largest Asian ethnic group in New Zealand after Chinese and Indians. Nonetheless, to date no studies have examined the nutritional outcomes resulting from the migration of Koreans to New Zealand. Hence, a study is needed to determine the dietary habits and the possible impact of the diet on risk factors for health and disease among Korean migrants.

As a pilot study, the purpose of this study was to assess dietary intake and other health related measures in a sample of 50 middle-aged (40-55 years) Korean females who have lived in New Zealand for at least 5 years. The study assessed sociodemographic characteristics, activity level, dietary intake, factors related to the dietary intake and anthropometric and biochemical measurements by questionnaires, 24-hour dietary recall and appropriate body measurements. The body measurements included weight, height, triceps and subscapular skinfolds, waist, hip, and upper arm circumference, elbow breadth, body fat using Bioelectrical Impedance Analysis, blood pressure and blood glucose level.

The nutrient intakes of subjects were found to be generally adequate and the proportions of energy derived from macronutrients (Carbohydrate:Protein:Fat = 55:17:26) were also considered to be in the adequate range. However, low intakes of calcium (596mg) and zinc (8mg) and high intake of sodium (3749mg) were identified as the main nutritional problems in this population. The nutrient intakes of Korean immigrants to New Zealand with longer residences (≥8.8 years) did not differ from those with shorter residences (<8.8 years). This suggests that the dietary acculturation of migrant Koreans may have taken place during the early years of residence in New Zealand (<5 years). The findings from this study further indicate that Korean migrants have not changed their traditional dietary habit to any great extent and that rice and *kimchi* still hold a prominent place in their diet. While the intakes of the study

participants were generally similar to reported intakes from Korean and New Zealand national surveys, the intakes of some nutrients were intermediate in the study participants (Korean immigrants) between those of native Koreans and New Zealanders; intakes of calcium in migrant Koreans were lower than those of New Zealand women, but higher than native Koreans because of a significantly greater intake of dairy products.

The risk associated with BMI is difficult to evaluate in this population group because of differences between Korean and New Zealand standards. The subjects had a much lower prevalence of obesity, measured by the BMI, according to the New Zealand (2%) compared to the Korean classification (24%) (P=0.005). Similarly, the subjects had a lower prevalence of increased disease risk, measured by waist circumference, according to the global classification (8%) compared to the Asian classification (24%) (P=0.029). However, almost half of all subjects fell into the 'at risk' group for WHR, suggesting that subjects may have more body fat in the upper body in relation to their body size. These findings suggest that appropriate ethnic-specific obesity indicators need to be developed to monitor anthropometric changes in migrant populations. The majority of subjects fell into the normal blood pressure range with only two hypertensive women in the study group.

The findings from this study identified the areas of concern in nutrition and indicated the need for further research into this population. Furthermore, these results may be used to develop culturally appropriate nutrition education materials and programmes.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

BIA	Bioelectrical Impedance Analysis
BMI	Body Mass Index
CFU	Colony Forming Units
CHD	Coronary Heart Disease
CVD	Cardiovascular Disease
FM	Fat Mass
FFM	Fat-Free Mass
HRT	Hormone Replacement Therapy
LAB	Lactic Acid Bacteria
NTD	Neural Tube Defects
PUFA	Polyunsaturated Fatty Acid
RDA	Recommended Dietary Allowances
RDI	Recommended Dietary Intake
RTE BF	Ready-to-eat Breakfast
TG	Triglyceride
WC	Waist Circumference
WHO	World Health Organization
WHR	Waist to Hip Ratio

LIST OF APPENDICES