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Screening for nutrition risk and dysphagia among older adults newly admitted to age related residential care facilities in the Waitemata DHB region.

A thesis presented in partial fulfillment of the requirements for the degree of Master of Science in Nutrition and Dietetics at Massey University, Auckland, New Zealand

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ABSTRACT

Background: New Zealand has an ageing population, reflected by an older average population age and reduced mortality. Good nutrition is essential for successful ageing. Many factors are known to influence nutrition risk, and a high prevalence has been observed overseas in people living in age related residential care (ARRC) facilities. In New Zealand, there is limited data on both the prevalence of nutrition risk in ARRC facilities and the health factors that contribute to risk. The changing demographics of the population means that a greater understanding in this area will be important to develop strategies which support the maintenance of good nutrition status for longer, thus potentially reducing health burden. This study aims to determine nutrition risk and the risk of dysphagia (swallowing difficulties) in older adults recently admitted to an ARRC facility in the Waitemata District Health Board (DHB) region.

Methods: Fifty-six individuals aged ≥65 years (or ≥55 years for Māori and Pacific) who were admitted for the first time to an ARRC facility within the Waitemata DHB region were invited to participate in the study. Potential contributors to nutrition risk were explored using a questionnaire that asked about nutritional and non-nutritional risk factors. The Mini Nutritional Assessment®-SF (MNA®-SF) was used to determine level of nutrition risk. Risk of dysphagia was identified using the Eating Assessment Tool (EAT-10). The Montreal Cognitive Assessment (MoCA) was carried out at the end of the interview and was used as a measure of cognitive function.

Results: A total of 53 participants with a mean age of 88 years were included. Overall, 91% of the participants were either malnourished (47%) or at risk of malnutrition (43%). Normal nutritional status was only prevalent in 9% of participants. Fifty-seven percent of participants were widowed, of which, 52% were malnourished. When malnourished participants were compared to those with normal nutritional status, malnourished participants were more likely to be underweight, in hospital level care, have a recent severe decrease in food intake, recent weight loss of greater than 3kg, have poorer mobility, experienced psychological stress or acute disease and have severe dementia or depression. Malnourished participants were more likely to report weight loss of greater than 3 kg than those at risk of malnutrition (56% vs. 13% respectively, $p = 0.03$; Fisher’s exact test). Those who were malnourished had poorer mobility ($\chi^2 = 8.592$ $p = 0.003$) and were more likely to be at risk of dysphagia ($\chi^2 = 6.273$ $p = 0.01$) compared to those at risk of malnutrition. Participants in hospital level of care were also more likely to be at risk of dysphagia compared to those in rest home level of care ($\chi^2 = 4.627$ $p = 0.03$).
Conclusions: These findings suggest there may be a high prevalence of nutrition risk among older adults newly admitted to ARRC facilities within New Zealand and that existing poor nutrition may have contributed to the need to move into ARRC. The predisposing factors that affect nutrition status warrant further investigation so initiatives can be undertaken to avoid a change in living situation. The results highlight the need for nutrition screening and early intervention by a dietitian.
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I am thankful to all of the participants who took part, for their willingness to share and talk with me during a difficult time of transition.

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I would like to thank my parents, Robyn and Grant, for their endless support and encouragement, no matter what. I could not have done this without them. Lastly, I would like to thank my close friends who have stood by me throughout this journey.
## TABLE OF CONTENTS

ABSTRACT ............................................................................................................................i

ACKNOWLEDGEMENTS .....................................................................................................i

TABLE OF CONTENTS ........................................................................................................i

LIST OF TABLES ................................................................................................................v

LIST OF FIGURES ...............................................................................................................vi

ABBREVIATIONS ...............................................................................................................vi

CHAPTER 1: INTRODUCTION, AIMS AND OBJECTIVES ..................................................1

1.1 Introduction ......................................................................................................................1

1.2 Aims and objectives .......................................................................................................4

  1.2.1 Aims .......................................................................................................................4

  1.2.2 Objectives ............................................................................................................4

1.3 Thesis structure .............................................................................................................4

CHAPTER 2: LITERATURE REVIEW .....................................................................................5

2.1 Health of older people ...................................................................................................5

  2.1.1 Ageing in place ......................................................................................................5

  2.1.2 Cultural influences on ageing in place ...............................................................6

  2.1.3 Health loss and causes of death .......................................................................7

2.2 Health costs of older adults in age related residential care (ARRC) ................................9

  2.2.1 Maintenance of independence ........................................................................10

  2.2.2 Loss of independence .......................................................................................11

  2.2.3 Declining physical function and health .............................................................12

  2.2.4 Frailty and disability within New Zealand .......................................................13

  2.2.5 Impact of ageing on the health system .............................................................14

2.3 Nutrition for healthy ageing ........................................................................................15

2.4 Changes in energy and nutrient requirements with age ..............................................18

2.5 Factors influencing nutrition risk in older adults .......................................................19

  2.5.1 Weight change, body mass index and nutrition risk ........................................21

  2.5.2 Ethnicity and nutrition risk ..............................................................................23

  2.5.3 Social factors and nutrition risk .......................................................................25

  2.5.3.1 Marital status .................................................................................................25
2.5.3.2 Living situation .................................................................26
2.5.3.3 Low income ......................................................................28
2.5.3.4 Low education .................................................................29
2.5.3.5 Support services ...............................................................30
2.5.4 Health factors and nutrition risk .........................................31
2.5.4.1 Polypharmacy .................................................................31
2.5.4.2 Dental status .................................................................33
2.5.5 Psychological factors, cognition and nutrition risk ..............34
2.5.5.1 Depression .................................................................34
2.5.5.2 Reduced level of cognition ............................................35
2.5.5.3 Montreal Cognitive Assessment (MoCA) .........................36
2.5.6 Dysphagia and nutrition risk ...............................................36
2.5.6.1 Eating Assessment Tool (EAT-10) .................................38
2.6 Screening for nutrition risk in older adults ..........................39
2.6.1 Mini Nutritional Assessment®-Short Form (MNA®-SF) ......40
2.7 Summary ..............................................................................42

CHAPTER 3: METHODS .................................................................43
3.1 Participants ............................................................................43
3.2 Participant recruitment ........................................................43
3.3 Inclusion and exclusion criteria ............................................44
3.4 Ethics ..................................................................................44
3.5 Questionnaire ........................................................................45
3.5.1 Pilot questionnaire ............................................................46
3.5.2 Participant characteristics ...............................................46
3.5.3 Health characteristics ......................................................47
3.5.4 Nutrition risk (Mini Nutritional Assessment®-Short Form) ..47
3.5.5 Dysphagia (Eating Assessment Tool, EAT-10) ....................48
3.5.6 Assessment of respondent reliability ................................49
3.5.7 Montreal Cognitive Assessment (MoCA) .........................49
3.5.8 Questionnaire completion .................................................50
3.6 Data handling and statistical analysis ....................................50
CHAPTER 4: RESULTS ........................................................................................................53
4.1 Recruitment ............................................................................................................... .....53
4.2 Participant characteristics ............................................................................................... 54
4.3 Health characteristics .................................................................................................... .59
  4.3.1 Comorbidities ..............................................................................................59
  4.3.2 Medications .................................................................................................61
  4.3.3 Dental status ...............................................................................................62
  4.3.4 Support services .........................................................................................63
  4.3.5 Cognition .....................................................................................................63
  4.3.5.1 Montreal Cognitive Assessment (MoCA) .................................................63
  4.3.5.2 Assessment of respondent reliability and understanding......................... 64
  4.3.6 Nutrition risk using Mini Nutritional Assessment®-Short Form ...............64
4.4 Dysphagia (Eating Assessment Tool, EAT-10) ..............................................................66
4.5 Nutrition risk (Mini Nutritional Assessment®-Short Form, MNA®-SF) by level of age
  related residential care (ARRC)......................................................................................66
  4.5.1 Mini Nutritional Assessment®-Short Form (MNA®-SF) questionnaire
  breakdown.............................................................................................................67
4.6 Nutrition risk status ..................................................................................................... ....68
  4.6.1 Demographic, health and social characteristics..........................................68
  4.6.2 Nutrition status according to the Mini Nutritional Assessment®-Short Form
    (MNA®-SF) final score..........................................................................................71
CHAPTER 5: DISCUSSION ..................................................................................................73
5.1 Introduction .............................................................................................................. .......73
  5.1.1 Characteristics of participants who were malnourished, at risk and with
        normal nutritional status................................................................................73
5.2 Dysphagia................................................................................................................. ......82
5.3 Association between dysphagia and nutrition risk..........................................................83
5.4 Summary ................................................................................................................... .....84
5.5 Limitations............................................................................................................... ........84
5.6 Strengths ................................................................................................................. .......85
CHAPTER 6: CONCLUSION AND RECOMMENDATIONS..................................................86
CHAPTER 7: APPENDICES .................................................................................................88
Appendix 1: Patient information sheet ...................................................................................88
Appendix 2a: Informed consent form .........................................................................................94
Appendix 2b: Informed consent form – Vulnerable participants ..............................................98
Appendix 3: Subject recruitment flyer .......................................................................................102
Appendix 4: Ethics documents (Health and Disabilities Ethics Committee and Waitemata DHB) .................................................................103
Appendix 5: Māori Research Review ........................................................................................108
Appendix 6: Questionnaire .......................................................................................................110
Appendix 7: Mini Nutritional Assessment®-Short Form (MNA®-SF) ...............................................117
Appendix 8: Eating Assessment Tool (EAT-10) .........................................................................118
Appendix 9: Montreal Cognitive Assessment (MoCA) .................................................................119
Appendix 10: Comorbidity examples and their relevant condition group .................................120
Appendix 11: Comorbidities according to participant identification number .........................122
Appendix 12: Study protocol .....................................................................................................127
CHAPTER 8: REFERENCES ..................................................................................................143
LIST OF TABLES

Table 1: Body mass index classification
Table 2: Questions in the EAT-10
Table 3: Participant characteristics
Table 4: Anthropometry and gender comparisons
Table 5: Demographic, health and social characteristics by level of ARRC status
Table 6: Frequency of comorbidity/disease occurrence
Table 7: Comorbidities and gender comparisons
Table 8: Regular prescribed medications and gender comparison
Table 9: Five most common regular prescribed medications and their possible side effects
Table 10: Dental status and gender comparisons
Table 11: Cognition (MoCA) and gender comparison
Table 12: MNA®-SF final score breakdown and gender comparison
Table 13: MNA®-SF questionnaire breakdown and gender comparison
Table 14: EAT-10 and gender comparison
Table 15: MNA®-SF final score and level of ARRC comparison
Table 16: MNA®-SF questionnaire breakdown and level of ARRC comparison
Table 17: Demographic, health and social characteristics by MNA®-SF nutrition risk status
Table 18: Nutrition status according to the MNA®-SF final score
LIST OF FIGURES

Figure 1: Age-sex population pyramids and projections, 1961 – 2061 (Statistics New Zealand, 2012)

Figure 2: Health loss in relation to leading condition groups measured by disability-adjusted life years (DALYs) (Ministry of Health, 2013b)

Figure 3: Key determinants of nutrition-related health (Ministry of Health, 2013a)

Figure 4: Study flow

ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ARRC</td>
<td>Age related residential care</td>
</tr>
<tr>
<td>AD</td>
<td>Alzheimer’s Disease</td>
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<tr>
<td>ADL</td>
<td>Activity of daily living</td>
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<tr>
<td>ANSI</td>
<td>Australian Nutrition Screening Initiative</td>
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<tr>
<td>BMI</td>
<td>Body mass index</td>
</tr>
<tr>
<td>BMR</td>
<td>Basal metabolic rate</td>
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<tr>
<td>BPSD</td>
<td>Behavioural and psychological symptoms of dementia</td>
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<tr>
<td>BRIGHT</td>
<td>Brief Risk Identification Geriatric Health Tool</td>
</tr>
<tr>
<td>CAD</td>
<td>Coronary artery disease</td>
</tr>
<tr>
<td>CC</td>
<td>Calf circumference</td>
</tr>
<tr>
<td>CHD</td>
<td>Coronary heart disease</td>
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<tr>
<td>COPD</td>
<td>Chronic obstructive pulmonary disorder</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
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<tr>
<td>CVD</td>
<td>Cardiovascular disease</td>
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<tr>
<td>DALY</td>
<td>Disability-adjusted life year</td>
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<tr>
<td>DHB</td>
<td>District Health Board</td>
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<tr>
<td>DST</td>
<td>Dysphagia Self-Test</td>
</tr>
<tr>
<td>EAT-10</td>
<td>10-item Eating Assessment Tool</td>
</tr>
<tr>
<td>EAT-20</td>
<td>20-item Eating Assessment Tool</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross domestic profit</td>
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<tr>
<td>GDS</td>
<td>Geriatric Depression Scale</td>
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<td>GIT</td>
<td>Gastrointestinal tract</td>
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<tr>
<td>GORD</td>
<td>Gastro oesophageal reflux disease</td>
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<tr>
<td>GUSS</td>
<td>Gugging Swallowing Screen</td>
</tr>
<tr>
<td>HDEC</td>
<td>Health and Disability Ethics Committee</td>
</tr>
<tr>
<td>ICD-10</td>
<td>International Classification of Diseases 10th revision</td>
</tr>
<tr>
<td>IHD</td>
<td>Ischaemic heart disease</td>
</tr>
<tr>
<td>IU</td>
<td>International Units</td>
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<tr>
<td>MCI</td>
<td>Mild cognitive impairment</td>
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<td>MIHL</td>
<td>Minimum income for healthy living</td>
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<td>MMSE</td>
<td>Mini Mental State Examination</td>
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<tr>
<td>MNA®</td>
<td>Mini Nutritional Assessment®</td>
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<tr>
<td>MNA®-SF</td>
<td>Mini Nutritional Assessment®-Short Form</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>MoCA</td>
<td>Montreal Cognitive Assessment</td>
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<td>MOW</td>
<td>Meals on Wheels</td>
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<td>MST</td>
<td>Malnutrition Screening Tool</td>
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<td>MUST</td>
<td>Malnutrition Universal Screening Tool</td>
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<tr>
<td>NASC</td>
<td>Needs Assessment Service Coordination</td>
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<td>NCEA</td>
<td>National Certificate of Educational Achievement</td>
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<tr>
<td>NHI</td>
<td>National Health Index</td>
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<tr>
<td>NSTEMI</td>
<td>Non ST segment myocardial infarction</td>
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<tr>
<td>NZBD</td>
<td>New Zealand Burden of Disease, Injuries and Risk Factors Study</td>
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<tr>
<td>OD</td>
<td>Oropharyngeal dysphagia</td>
</tr>
<tr>
<td>OTC</td>
<td>Over-the-counter</td>
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<tr>
<td>PEM</td>
<td>Protein-energy malnutrition</td>
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<tr>
<td>ROC</td>
<td>Receiver operating characteristic</td>
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<tr>
<td>SCREEN II</td>
<td>Seniors in the Community: Risk Evaluation for Eating and Nutrition, Version II</td>
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<tr>
<td>SD</td>
<td>Standard deviation</td>
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<tr>
<td>SGA</td>
<td>Subjective Global Assessment</td>
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<tr>
<td>VFS</td>
<td>Videofluoroscopy</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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<tr>
<td>WI</td>
<td>Weight index</td>
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