


Masahito Oyamada^{*1}, Sarah Morgan^{2,3}, Robyn Dixon⁴, Clare Wall⁴ and Jacquie Bay^{2,3}

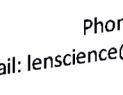
With the accumulation of compelling evidence, the Developmental Origins of Health and Disease (DOHaD) hypothesis has reached the stage of translational research. Such research supports the development and testing of interventions to support primary prevention of noncommunicable diseases (NCDs) via application of DOHaD principles. However, very little evidence exists regarding baseline public understanding of DOHaD concepts and even less around the impact of public understanding interventions in this field. Existing evidence demonstrates relatively low levels of understanding of DOHaD in first-time mothers, 11-14 year old school students and their parents, and 18-22 year old female university students.

This collaboration between researchers in New Zealand and Japan is establishing baseline knowledge of DOHaD hypothesis understanding in groups identified as key targets for intervention. This evidence will be used to inform the development of knowledge translation interventions. The project has developed a validated questionnaire with context-appropriate versions that enables data collection from the general public, adolescents in schools, health-sector professionals, and tertiary students studying to be health professionals.

The aim is to identify cohorts and pathways through which improved DOHaD theory education of future health professionals might lead to improved communication of the knowledge to the general public and those who are at most risk of NCDs, and charged with growing our next generation.



LIGGINS INSTITUTE
The Liggins Institute, University of Auckland
Private Bag 92019, Victoria Street West, Auckland 1142



Bringing Schools and
Scientists Together
Phone 09 933 2759
Email: lensescience@auckland.ac.nz

Participant Information Sheet

Understanding of DOHaD in New Zealand Communities

Research conducted by:
Principal Investigator: Dr Sarah Morgan, Lensescience Research Fellow
Co-Investigators: Jacquie Bay, Director School of Nursing
 Associate Professor Robyn Dixon, School of Nursing
 Dr Anecita Lim, School of Nursing
 Professor Wayne Cutfield

Liggins Institute Director: The Liggins Institute is interested in finding out what New Zealanders know about the Developmental Origins of Health and Disease (DOHaD) hypothesis. We are doing this by asking New Zealand adults to complete a short questionnaire, about what DOHaD is. The questionnaire can be completed on line or by hand copy. We will use this information to help design education programmes to increase awareness and understanding of what the DOHaD hypothesis is and how the risk of noncommunicable diseases (NCDs) can be reduced.

You are under no obligation to take part in the study. Participation is entirely voluntary. You can withdraw your participation at any time by closing your browser window or returning your paper blank/incomplete. All the information you give is anonymous. We will not record your name or any information that could identify you when the findings of the research are reported. This means that once you have, closed your browser window or returned your paper version of the questionnaire, you cannot withdraw the information as we would not be able to identify which was your response. Information from your questionnaire will be compiled with that from approximately 1000 participants to give an overview picture. **By participating in the interview or completing the questionnaire you are giving the University of Auckland consent to use this information in the research.**

The questionnaire should not take you longer than 5-10 minutes to complete.

To take part you will need to be at least 16 years old and be able to speak English. Information from this research will be stored on a secure computer system for up to 6 years before being erased. Individual forms will be destroyed by shredding after the responses are analysed or at 6 years post-collection. The research information will be released in a newsletter format on the Lensescience and Liggins Institute web sites. You may also email Lensescience to request a copy of the report when it is published Lensescience@auckland.ac.nz.

The research is funded and operated by The Liggins Institute at The University of Auckland.

For any ethical concerns contact: The Chair, 76 Symonds Street, Private Bag 92019, Auckland. Tel: 3737599 extn. 83711. This research has been approved by The University of Auckland Human Participants Ethics Committee on 21/11/2014 for 3 years Reference Number 013093

@DrSM/Morgan

Dr Sarah Morgan
 The project:
 What is DOHaD?

09 933 2759
<http://www.lensescience.auckland.ac.nz/en/about/our-research/public-understanding-dohaad.html>
<http://lensescience.ac.nz/blog/what-is-dohaad>

February 2015

Print
Entry
Code

PUD Project – Print Questionnaire: Professional

Date of completion	
Time of completion	
Location of completion	

Please use a clear 'X' marking the box corresponding to your answers throughout this survey

1. Have you heard of non-communicable diseases?

Yes	No
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If NO, please skip to question 4

2. What is a non-communicable disease?

3. Can you give some examples of non-communicable diseases?

4. What are the risk factors for developing overweight or obesity?

5. The next questions are about factors affecting our wellbeing. For each statement please indicate whether you agree or disagree. **If you agree**, please indicate the extent to which you think that factor affects health.

	Agree	Disagree	I don't know	Very much	Moderately	Slightly
a						
b						
c						
d						
e						
f						
g						
h						

Table 1. Nutrition Year 1 - Japan

Total number of responding students	69	
You have heard of DOHaD, yes	0	
You have heard of DOHaD, yes (%)	0	
A woman's nutrition during pregnancy affects the health of the child throughout adulthood		%
strongly agree	6	8.7
somewhat agree	14	20.3
I don't know	36	52.2
disagree	11	15.9
strongly disagree	2	2.9
A child's nutrition during the first 2 years of life affects the health of the child throughout adulthood.		
strongly agree	11	15.9
somewhat agree	20	29
I don't know	30	43.5
disagree	7	10.1
strongly disagree	1	1.4

Table 3. Nutrition Year 3 - New Zealand

Total number of responding students	26	
You have heard of DOHaD, yes	1	
You have heard of DOHaD, yes (%)	3.8	
A woman's nutrition during pregnancy affects the health of the child throughout adulthood		%
agree very much	3	11.5
agree moderately	12	46.2
agree slightly	7	26.9
disagree	1	3.8
I don't know	3	11.5
A child's nutrition during the first 2 years of life affects the health of the child throughout adulthood.		
agree very much	11	44
agree moderately	8	32
agree slightly	3	12
disagree	0	0
I don't know	3	12

Table 2. Nutrition Year 4 - Japan

Total number of responding students	76	
You have heard of DOHaD, yes	55	
You have heard of DOHaD, yes (%)	72.4	
A woman's nutrition during pregnancy affects the health of the child throughout adulthood		%
strongly agree	11	14.5
somewhat agree	30	39.5
I don't know	27	35.5
disagree	8	10.5
strongly disagree	0	0
A child's nutrition during the first 2 years of life affects the health of the child throughout adulthood.		
strongly agree	28	36.8
somewhat agree	25	32.9
I don't know	20	26.3
disagree	3	3.9
strongly disagree	0	0

Table 1. Selected question responses of first year

Japanese nutrition students

Table 2. Selected question responses of fourth year

Japanese nutrition students

Table 2. Selected question responses of third year

New Zealand nutrition students

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If Agree: To what extent will this affect health...

	Agree	Disagree	I don't know	Very much	Moderately	Slightly
i. A child's nutrition during the first 2 years of life affects the health of the child throughout adulthood.						
j. The physical activity levels of a mother and father before conception and during pregnancy affects the health of the child throughout adulthood.						
k. A mother and father's exposure to tobacco smoke before conception and during pregnancy affects the health of the child throughout adulthood.						

6. Have you ever heard of 'Developmental Origins of Health and Disease' or 'First 1000 days'?

Yes ☐ No ☐

If YES, where?

7. To what extent does the diet of the mother during pregnancy affect lifelong risk of:

	Extremely	Moderately	Slightly	Not at all	I don't know
Food allergies					
Overweight					
Eczema, asthma or hay fever					
Type 2 Diabetes					
Weak bones, osteoporosis					
Unhealthy food preferences					
High blood pressure, heart disease					
Stroke					
Cancer					

8. Gender and Age

Are you:	Which age group do you fit in to?	
Male	16-24	
Female	25-40	
Prefer not to say	41-64	
	65+	

9. What are you studying?

Stage (year) & topic:

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10. What is your highest completed educational qualification?

No education qualification	
NCEA Level 1 / School Certificate / or equivalent (e.g. GCSE)	
NCEA Level 2 / Sixth Form Certificate / or equivalent	
NCEA Level 3 / University Bursary or equivalent (e.g. Higher School Certificate / A Level / IB Diploma)	
Trade certificate / apprenticeship	
Diploma below bachelors (e.g. older qualifications for Pharmacy, Physiotherapy / Nursing / primary teaching / ECE teaching etc.	
Bachelor's Degree	
Post Graduate Diploma	
Masters	
PhD	
Other notes:	

11. Which ethnicities do you identify with?

Tick as many as needed

Māori	
NZ European / Pakeha	
Pacific Island (Tongan, Samoan, Fijian, Cook Island / Rarotongan, Nuean...)	
Asian (Japanese, Chinese, Korean, Singaporean, Thai, Malay...)	
Indian, Pakistan, Sri Lankan...	
European / Caucasian (Australian, UK, USA, Other European...)	
Middle eastern	
Latin American / Hispanic	
African	

Thank you for taking part in this survey. We have information about NCDs and the DOHaD hypothesis on our websites if you are interested in finding out more; please carefully tear off & keep the front page of this survey (entitled Participant Information Sheet).

When we have finished the research we will report the results via peer-review publication in academic journals and to the public on our web site. Your help is essential for developing policy and educational strategies, thank you!

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This questionnaire enables us to make comparison among various countries and populations, and revealed that there is apparent difference in understanding of DOHaD (both the term and the concept) between future dietitians in New Zealand and Japan.

While not alarming in itself, it highlights a potential avenue for education of the population about NCD risk avoidance. In New Zealand, premature mortality between the ages of 30 and 70 due to the top 4 NCDs (Cancers, Diabetes, Cardiovascular Diseases, and Chronic Respiratory Diseases) is 11%, in Japan it is 9% (WHO NCD diseases country profiles 2014). In comparison, the USA is 14%, China is 19% and India is 26%. Knowing the baseline understanding of DOHaD theory in the general population of a country could effectively highlight an avenue for intervention.

The questionnaire is designed in two formats to be easily understood by highly educated health professional trainees, and the general public - and is very easily translated. The collaboration has recently been extended to a group in China and we look forward to adding another country into the comparison.

Should you wish to use the questionnaire within your own research setting, please don't hesitate to initiate a conversation with Professor Oyamada or email him at oyamada@fujijoshi.ac.jp