EVIDENCE-BASED EARLY ENVIRONMENTAL EDUCATION IN PRESCHOOLERS

From lab to nature … and back
Nutrition
Pharmacology
Pediatrics
Physical activity and health
Early obesity prevention

**Lifestyle interventions – healthy lifestyle**
Early environmental education
Exposure to nature and gut microbiome

PLAY & GROW
HongKong
AGENDA

- **El objeto** es analizar la lógica en que se desarrolla la educación parvularia y la importancia que tiene la educación al aire libre, la cual reconecta a los niños con la naturaleza generando cambios cognitivos como también en la convivencia escolar, aminorando conflictos.

- Crisis en salud y bienestar
- Crisis medioambiental
- Todo el mundo reconoce estos problemas
- Planes de acción (OMS, ONU, planes de gobierno...)

Educación parvularia
Acciones en las comunidades
Universidad (educar los educadores),
Leyes
Ejemplos desde Hong Kong, Europa y las comunidades locales en Chile.
Experts know how to improve health...

2016 – UN Decade of Action on Nutrition, designed to reinvigorate national/international efforts for nutrition.

But... does it work? “Little to NO effect…”


Hodder, et al (2018). Interventions for increasing fruit and vegetable consumption in children aged five years and under. The Cochrane Library
Solutions? - One Health

“ONE HEALTH is an approach to designing and implementing programmes, policies, legislation and research in which multiple sectors communicate and work together to achieve better public health outcomes” (WHO)

https://www.who.int/features/qa/one-health/en/
New type of healthy lifestyle actions?
Possible in an urban environment?

Urban >>> ‘toxic’

Content

Nature games

Food games

Environmental education


P&G EVIDENCE (Eating habits and Mental health – well-being indicators)

- Gender differences in activity levels of 9-months old toddlers, objectively measured. J Zhang, Zhen, DM Trindade, T Sobko*. *Maternal and Child health, 2018*

<table>
<thead>
<tr>
<th>Project</th>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>Book chapter</td>
<td>Intergenerational Gardening on Urban Rooftops: The Example of the “Play and Grow” Program in Hong Kong</td>
<td>T Sobko and L Chawla</td>
<td>Routledge</td>
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<tr>
<td>P&amp;G</td>
<td>Does Connectedness to Nature improve eating behaviours of pre-schoolers? Emerging evidence from the Play&amp;Grow randomised controlled trial in Hong Kong.</td>
<td>T Sobko*, G Brown, WHG Cheng</td>
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<td>Food Environment and Health</td>
<td>Environmental impact of the average Hong Kong diet: A case for adopting sustainable diets in urban centers</td>
<td>T Tang and T Sobko*</td>
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<td>P&amp;G</td>
<td>Impact of outdoor nature-related activities on mental health and gut microbiota in preschool children</td>
<td>T Sobko, SS Liang, WHG Cheng, CL Chan, HM Tun*</td>
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<td>Positive effects of connectedness to nature on emotional problems, hyperactivity and prosocial behaviours among pre-schoolers</td>
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<td>TBC</td>
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Effect of Nature on **Eating habits** (Indicators of health and well-being) - A paradigm shift!

- **Control**
  - Caregiver’s Connectedness to Nature
  - Children’s Connectedness to Nature
  - Caregivers’ Feeding style
  - Children’s Eating Behaviour

- **Intervention**
  - Caregiver’s Connectedness to Nature
  - Children’s Connectedness to Nature
  - Caregivers’ Feeding style
  - Children’s Eating Behaviour
Nature and Mental Health

- Children connection with nature have less distress, hyperactivity, fewer behavioural and emotional difficulties, and improved pro-social behaviour.
- Children who take greater responsibility towards the nature have fewer peer difficulties.
- New links between the outdoor environment and mental health in pre-school children.

Connectedness to nature

Gut microbiome

Maintain *Roseburia* sp. Abundance

Beta diversity

Fecal serotonin

Maintain serotonin level

Mental health

Children Stress - Anger

RN, CNI

Why “evidence-based” matter?
Hong Kong researcher highlights importance of nature for children during Joondalup Health Campus visit
Expanding worldwide

The Play&Grow network in HK and the big world:

Frankie (HK)
Will (HK)
Kiki (HK)
Christina (HK)
Yan (HK)
Grace (HK)
Ann (HK)
Michael (HK)
Dulce (Macau)
Christian (HK)
Chia Huei (Japan)
Matt (USA)
Hein (Canada)
Gavin (NZ)
Desiree (Australia)
Matias (Chile)
Anahi (Chile)
Joao (Denmark)
Tore (Sweden)
Jon (Sweden)
Mette (Norway)