Eat it up: understanding fruit and vegetable consumption in children & adolescents

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Outline

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• Determinants of f & v consumption
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• What we know: evidence base
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Why fruit & vegetables?

- Recent evidence suggests that diets high in fruit & veg have been associated with the reductions in a range of diseases, such as:
  - Heart disease
  - Stroke
  - Diabetes
  - High blood pressure
  - Cancer

- Fruit & veg intake is a vital part of weight management and may help reduce the risk of childhood overweight/obesity

- Healthy eating in childhood is more likely to lead to healthy eating later in life (tracking effect)
Dietary guidelines for Australian children and adolescents

- Australian children should be eating the recommended 2 serves of fruit & 5 serves of veg per day (NHMRC, 2003)
Determinants of fruit & veg consumption in children & adolescents

• Underlying reasons for inadequate fruit & veg consumption are complex & varied:
  ➢ Gender
  ➢ Age
  ➢ Socioeconomic position
  ➢ Preferences
  ➢ Parental intake
  ➢ Home availability/accessibility
  ➢ Culture

• To promote fruit and vegetable intake among children and adolescents, insight is necessary into:
  – determinants of intake
  – barriers to & facilitators of fruit & vegetable consumption
The story so far...

- Nutritional interventions have generally been moderately successful in improving a lasting consumption of adequate amounts of fruits and vegetables.
- Comprehensive overviews of the literature on determinants/barriers/facilitators of fruit and vegetable consumption is necessary.
- Increasing fruit and veg consumption needs more consideration around the evidence base to be used because of the complexity of many interventions, i.e., setting, process, content, etc.
- Rather than a disorganised collection of information, better to collect evidence in a systematic and comprehensive manner – Systematic Review.
What is a systematic review?

- A summary of available research on a given topic that compares studies based on design and methods.
- Summarizes the findings of each, and points out flaws or potentially confounding variables that may have been overlooked.
- A critical analysis of each study is done in an effort to rate the value of its stated conclusions.
- Research findings are then summarized and a conclusion provided.
What role can systematic reviews play?

• Key source of evidence based information to support and develop practice,
• support professional development by helping to identify:
  – new and emerging developments and
  – gaps in knowledge
• Systematic reviews provide a synthesis of robust studies which no policy maker or practitioner, however diligent, could possibly hope to read themselves.
Body of evidence available

- Three key systematic reviews:
  1. Determinants of fruit & veg consumption among children & young people (n = 98 studies), Rasmussen et al; 2006
  2. Children & healthy eating: a systematic review of barriers & facilitators (n = 41 studies), Thomas et al; 2003
  3. Young people & healthy eating: a systematic review of research on barriers & facilitators (n = 15 studies), Shepard et al; 2005
What we know about the knowledge base itself: determinants of f & v consumption

- **Gender**: majority of studies found that girls tend to have a higher & more frequent intake of fruit &/or veg than boys (All countries)
- **Age**: over 50% of papers found that f & v consumption decreases with increasing age (All countries)
- **SES**: low socioeconomic position is associated with low or less frequent intake of f & v, esp for family income, parental occupation & parental education (48% papers based on US study populations, 9% Australian)
  - 46 papers examined the influence of socioeconomic position (SEP), based on family income, parental occupation and parental education
What we know about the **knowledge base** itself: determinants of f & v consumption cont.

- **Ethnicity**: significant associations found are inconsistent, depending on which ethnic groups were compared & often different patterns of consumption were observed for f & v (US, Denmark, England)**

  **Urban/rural**: only four studies investigated the influence of urbanisation, all of which found that f &/or v consumption is higher among rural children & adolescents than among urban (China, Scotland, Costa Rica)

- **Preference**: factor examined most extensively, with all papers observing a positive association between preferences and children and adolescents’ intake of f & v (Norway, Australia, US)
  - Based on NHMRC’s Dietary Guidelines for Children and Adolescents in Australia, displays of food preferences occur at age 18 months – 2 years
  - At this age, appetite decreases, food rituals become important and negative behaviour towards food develops
What we know about the knowledge base itself: determinants of f & v consumption cont.

- **Parental intake**: majority of studies found a positive association between parental intake of f & v and children’s consumption of both of these food groups (Australia, Norway, US)
  - Studies focused on both parent reported intake and child perceived parental intake

- **Home availability/accessibility**: all studies reported a positive association between child-reported home availability & children’s intake of f & v (Norway, US)
  - Studies included both parent reported and child-reported availability/accessibility
What we know about the knowledge base itself: barriers for children.

- Children do not see it as their role to be interested in health
- Children do not see messages about future health as personally relevant or credible
- Fruit, vegetables and confectionary have very different meanings for children
- Children actively seek ways to exercise their own choices with respect to food
- Children value eating as a social occasion
- Children see the contradiction between what is promoted in theory and what adults provide in practice
What we know about the knowledge base itself: barriers & facilitators for adolescents

• **Barriers:**
  – poor school meal provision
  – Ease of access to; relative cheapness of; personal preference of;

**FAST FOOD**

• **Facilitators:**
  – family support
  – wider availability to healthy foods
  – desire to look after one’s health
  – will-power
Promising future interventions to increase F & V consumption in children & adolescents

• Brand fruit and veg as ‘tasty’ rather than ‘healthy’
• Reduce health emphasis of messages
• Do not promote fruit and veg in the same way within the same intervention
• Create situations for children to have ownership over their food choices
• Ensure messages promoting fruit and vegetables are supported by appropriate access to fruit and vegetables
What we know about the evidence base

- Most interventions were multi-component & school based*
- Interventions varied considerably in content**
- Only a few studies included young people who could be considered socially excluded, primarily those from ethnic minorities
- Selected studies varied in comprehensiveness of their reporting of the characteristics of children & adolescents (SES, ethnicity, etc)
- Only those focusing on determinants of consumption, reported results according to demographic characteristics such as age and gender
What we know about the extent of the evidence base cont.

- Literature clouded by the confusion about the definition of healthy eating, the measured outcomes of interventions and the theoretical bases of intervention methodologies
- Little investigation of the influence of parents and ways to involve them in the promotion of children’s health eating
- Few investigations of community wide programs
- Most interventions have been short-term, as have their evaluations
- Few included an integral evaluation of the intervention process
Future recommendations for higher quality evidence base

- take a population health focus that embraces a public health approach and systematic planning of activities
- contribute to reducing health inequalities by focusing on the nutrition-related health needs of disadvantaged groups, including Aboriginal Victorians
- foster partnerships within the health sector and with other sectors and the community
- acknowledge the social determinants of health as well as their relationship with nutrition
- base initiatives on scientific evidence where it exists and contribute to building evidence where it is needed
- Include process evaluation for evidence-informed decision making
What is process evaluation?

- Public health nutrition action should be based on the best available evidence of effectiveness and should continue to build the evidence.
- Most randomised controlled trials (intervention studies) focus on outcomes, not the processes involved in implementing an intervention.
- Process evaluations within RCTs explore the implementation, delivery, and setting of an intervention & help in the interpretation of the outcome results.
- Can help distinguish between interventions that are inherently faulty and those that are badly delivered.
- They may also:
  - Examine the views of participants
  - Distinguish between components of the intervention
  - Investigate contextual factors that affect an intervention
  - Study the way effects vary within subgroups
Conceptual framework applied to children's fruit and vegetable consumption

Country
Ethnicity
Socio-economic status

National level:
Dietary guidelines
School food policies
Price policy related to FV

Community level:
Local food policies
Local access to FV through grocery stores

School level:
Socio-economic status
School food policies
School meals
Access to FV at school

Perceived physical environment
Availability at home
Availability at school and leisure

Community level
Exposure to mass media & commercials

School level
Behavioral norms among pupils

Peer group
Subjective norms

Family
Socio-economic status
Subjective norms (modeling)
Parental encouragement
Family rules
Parental facilitation

Health-related behaviors:
Physical activity
TV-viewing

FV-specific factors
Knowledge
Attitudes
Liking FV
Self-efficacy
Self-rated intake
Habit
Preferences
Perceived barriers
Intention

Fruit and Vegetable Consumption
Conclusion

• Effective action often requires engaging partners in collaborative and coordinated action at state, regional and local levels

• Policy and program decisions are dependent on lots of things – but evaluations that can say *what works, what doesn’t, for who and for how much*, are essential

• Systematic reviews provide a supportive partner to advocate for high quality interventions and evaluations

• Reviewing the evidence and building the future evidence is essential to population health outcomes
References


Thank you