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FRUIT AND VEGETABLES' PERCEPTION

Edito

For several years, most governments have been announcing policies exhorting people to eat a healthy diet (around the iconic images of fruits and vegetables (F&V)) and to undertake more physical activity in order to help prevent a range of diseases. Eat less unhealthy foods and move more. Almost everyone agrees that it makes sense; no one is actually advocating eating fewer F&V or to move less. However, the percentage of people in most societies who 'claim' to meet prescribed targets is depressingly low (the true figure may be even lower than 'claimed'). Why is this?

A number of studies are now being conducted to reveal why people – both adults and children – are unable to meet the quite reasonable and not especially demanding targets being set. Barriers exist both in the individual and in the environment. For young children their parents apparently present significant barriers (the corollary is that the parents could therefore be a positive influence). But parents have perceptions of the barriers they themselves confront, one of which is the perceived pressure of time. In a modern world people blame a lack of time for being unable to eat a healthy, balanced diet. Can anything be done about these barriers?

One problem is there are abundant alternatives to a healthy diet and living a physically active life. These alternatives are not marketed as 'unhealthy practices' but they are incorporated into cultural forces that promote the consumption of easy to find, cheap to buy, energy dense products and enjoyable sedentary activities (often sitting down watching someone else do something). All of these are legitimised in the commercial market of a consumer society. It may be perceived as being unfair but it is not against the law. In this environment, does the identification of barriers exhaust all possibilities for the failure of people to meet targets? Could there be an underlying 'unwillingness'? Is it possible that people actually enjoy the taste and easy mouthfeel of 'unhealthy' foods or that they dislike the effort of physical activity? Self denial is not a popular lifestyle choice. The preservation of 'freedom of choice' is a goal of most democratic societies. However, to change unhealthy lifestyles may require a greater degree of coercion (limitation of choice) than currently exists.

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North Carolinians' perceptions of individual and community environmental influences on fruit and vegetable intake

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The south eastern region of the United States has some of the highest prevalence of chronic disease and poor health outcomes in the nation[1]. The state of North Carolina (NC) reports higher than national average, age-adjusted death rates for heart disease, cancer, stroke, respiratory conditions and injury which account for almost two thirds of all annual deaths[2].

Physical inactivity and an unhealthy diet are documented health behaviors that lead to overweight and obesity[3]. In NC, the prevalence of adult overweight/obesity is 65%. Approximately 78% of adults do not consume the recommended daily intake of five or more servings of fruits and vegetables (F&V) and 56% do not engage in moderate and vigorous activity[2]. These statistics highlight the prevalence of unhealthy behaviors in this region, yet they provide little information about the motivations and perceptions of residents relative to F&V consumption. In addition, qualitative descriptions of dietary behaviors in the context of one's environment are rare. Of particular interest are research indications that lifestyle choices, including those relating to diet, are complex decisions affected by the interaction between people (attitudes, thoughts, behaviors, perceptions) and their external social and physical environments[4-6]. We need to further our understanding of environment and behavior interactions in the context of diet.

Perceptions and behaviors toward fruits and vegetables are influenced by both internal and external environmental factors

Our work draws from a large study assessing social determinants of chronic disease risk and health outcomes in adult North Carolinians. We surveyed 2,479 adults from 22 family practices in NC. A portion of the survey asked about participant perceptions of the variety, affordability, and quality of F&V at the grocery store where they regularly shopped. We also conducted focus groups, telephone interviews and used a photography activity with 32 of these individuals to further explore consumption of and perceived environmental influences on F&V intake. Participants were older (mean age 52.8), heavier (mean body mass index 29.4), averaged three[3] chronic conditions, and were generally female, white, married, and high school graduates.

Our findings revealed that a number of perceptions and environmental factors influenced F&V consumption, on both individual and community levels.

Individual-level barriers:

- personal food preferences,
- fatigue of taste buds for certain foods,
- life stresses (e.g. vocational and economic),
- lack of forethought in meal planning,
- current personal health status,
- perceived impact of food on chronic disease status.

Individual-level facilitators:

- presence of chronic disease,
- lifetime experience related to intake of F&V,
- preferences for certain F&V,
- personal or spousal health status.

Community-level barriers:

- contradictory media messages related to nutrition and health outcomes,
- limited worksite food options,
- food availability,
- food cost at grocery stores.

Community-level facilitators:

- availability of home gardens, low cost of foods at farm stands,
- childhood exposure to F&V.

Participants took photographs to illustrate environmental factors. Images included farms, kitchen spaces, convenience stores, gardens, restaurants and buffet foods (Picture 1 and Picture 2).

Picture 1
North Carolina Fast Food Restaurant

Picture 2
Field of Soybeans in North Carolina

How may fruit and vegetable consumption be enhanced?

Interventions targeting individuals and communities are effective tools in promoting healthy nutrition behaviors like F&V consumption. In fact, NC has a state-wide public health initiative called "Eat Smart, Move More." This program has a multi-level approach that "encourages individuals to think differently about what they eat and how much they move and to make choices that will help them feel good and live better" while providing community resources to enable healthy behaviors (http://www.eatsmartmovemorenc.com). Our study highlights the importance of acknowledging the individual's lived-experience, from personal attitudes and beliefs to social norms and resources available in the community for promoting F&V consumption. Individuals may be more likely to make healthy choices when armed with personally and culturally relevant intervention messages, which may lead to reduced chronic disease incidence and prevalence.

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Time pressure a barrier to healthy eating and physical activity

— David Crawford —

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Healthy eating and physical activity are key components for good health. Even if adequate nutrition and physical activity are known to be important in the prevention of chronic disease, particularly in obesity[1], public health recommen-dations are far from being met in Australia. One of the barriers to meet the nutrition recommen-dations is time pressure[2-3]. Time constraints are also reported as a barrier for physical activity[4-5].

The aim of the present study[6] was to describe the proportion and characteristics of women who report time pressure as a barrier of physical activity, healthy eating, in particular fruits, vegetables and fast-food intakes, and to describe the perceived cause of time pressure.

This survey concerns Australian women

Socio-demographic details of on average 3,000 women were obtained by questionnaires.

Causes of perceived time pressure were allowed with 10 items:

- "long hours at work/study",
- "inflexible hours at work/study",
- "unpredictable hours at work/study",
- "working unusual hours at work/study",
- "family commitments to children",
- "family commitments to other family",
- "commitments to friend/relatives",
- "volunteer and community work".

Women were asked about their fruit and vegetables (F&V) consumption. Based on nutritional guidelines, they were then categorized as meeting fruit guidelines (>2 servings/day) and vegetables guidelines (> 5 servings/day). Only 5% of women eat the recommended vegetable daily intake, so that women who consumed 3 to 5 servings/day were categorized as high consumers and those who consumed less than 2 servings/day as low consumers.

They were also asked about fast-food consumption and categorized infrequent (1 meal/week or less) or frequent (>1 meal/week) consumers.

Women meeting recommended physical activity had more than 150 min/week of at least moderate-intensity physical activity.

Time pressure as a barrier to healthy eating

Time pressure was reported as a barrier to healthy eating by 41% of the women. Women under 30 years, with higher level of education, never married and working, reported more likely time pressure as a barrier to healthy eating.

Time pressure was also reported as a barrier to physical activity by 73% of the women. Women under 39 years, with higher level of education, never married, having no children at home and working, reported more likely time pressure as a barrier to healthy eating.

For women who reported time pressure as a barrier 47%, 74% and 55% did not meet fruits, vegetables and physical activity guidelines, while 13% were frequent fast-food consumers.

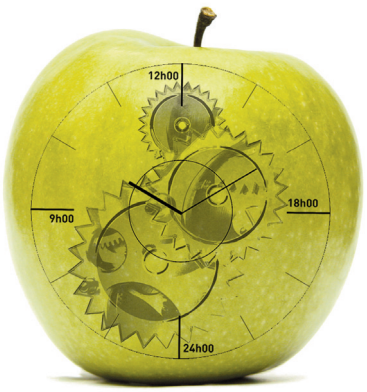
For women for whom time pressure is not a barrier 34%, 60% and 45% did not meet fruits, vegetables and physical activity guidelines, while 9% were frequent fast-food consumers.

Time pressure is significantly associated with the risk of not meeting guidelines. Women who reported time pressure as a barrier were 40%, 47% and 35% less likely to meet fruit, vegetable consumption and physical activity guidelines respectively compared to those who did not report time as a barrier ($p<0.0001$).

Need to understand "Time Pressure" phenomenon

Long hours at work or study were the most commonly reported cause of time pressure. Inflexible and unpredictable hours at work or study were also reported as major causes of time pressure.

Women who reported time pressure as a barrier (40%) to healthy eating consumed less fruits, vegetables, had less physical activity and eat fast-food more often, so that they are less likely to meet recommendations. Given the known benefits for health and well-being linked to F&V consumption and physical activity, these findings suggest the need to better understand the phenomenon of time pressure and its role in nutrition and physical activity.



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Children's and parent's perceptions of the determinants of children's fruit and vegetable intake in a low-intake population

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The evidence for the health benefits of fruit and vegetables (F&V) intake explain the recommended intake of at least 400g of F&V per day[1] which is far from being consumed by the majority.

The Pro Children cross-Europe survey, involving nine European countries, aimed to assess F&V intake of children and their determinants[2-3]. Results showed that F&V intake was lowest in Iceland[4] and the major determinants were: availability at home, family rules, knowledge of recommendations, preferences and liking[5].

As parents are a key component of the environment of young children, the main objective of the present study was to focus on differences between children and parents' reports on physical and social environmental determinants of F&V intake among 11-year-old children[6].

A cross-sectional survey

A cross-sectional survey was performed as part of the Pro Children cross-Europe survey in Iceland. Children's F&V intakes were reported by children and parents. The sample included 963 child-parent couples.

F&V intake and their determinants were assessed with self-administered questionnaires developed for children and parents[7-8]. Determinants included: availability at home (different kinds of F&V), availability of specific F&V, accessibility at home, modeling (parents, eat together), active encouragement, family rules, self-rated intake, habit and knowledge of recommendations.

Children's and parent's perceptions

Correlations between children and parents F&V intake were low ($r=0.21$ $p<0.01$ for fruits and $r=0.17$ $p<0.02$ for vegetables).

Availability and accessibility of fruits at home are reported lower by children than parents. Children reported more modeling, active encouragement and demand than their parents and considered eating fruit more a habit than their parents.

Availability of specific vegetables at home is more reported by children than parents. Children reported more active encouragement and demand than their parents and reported the recommendation more accurately. Parents reported children eat more vegetables they like.

Determinants of F&V intakes

Variance in children's fruit intake is better explained by self-report of determinants than parents' reports. According to children, the main determinants of fruit intake are availability at home, family rules and knowledge of recommendations. The father is the strongest model for fruit intake.

Variance in children's vegetable intake is better explained by self-report of determinants than parents' reports. According to children, the main determinants of vegetable intake are availability at home, demanding family rule and knowledge of recommendations. Eating with family is the strongest model for vegetable intake.

Active encouragement was negatively associated to fruit, as well as vegetables intake.

The need to target parents

Authors found differences between children's and parents' reports on the determinants of F&V intake. Observed variance in F&V intake is better explained by children's perception than their parents' perception. Even if parents are likely the most important models for their children, low correlation between parents and children F&V intake were observed in this study.

According to children, the main determinants of F&V intake were availability at home, modeling, family rules and knowledge of recommendations. All factors which are mainly determined by the parents.

Interventions aiming to increase children F&V consumption must target the parents.

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