



## A voluntary nutrition labeling program in restaurants: Consumer awareness, use of nutrition information, and food selection

Christine M. White, Heather G. Lillico<sup>1</sup>, Lana Vanderlee, David Hammond\*

School of Public Health and Health Systems, University of Waterloo, 200 University Avenue West, Waterloo, ON N2L 3G1, Canada

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### ABSTRACT

Health Check (HC) was a voluntary nutrition labeling program developed by the Heart and Stroke Foundation of Canada as a guide to help consumers choose healthy foods. Items meeting nutrient criteria were identified with a HC symbol. This study examined the impact of the program on differences in consumer awareness and use of nutritional information in restaurants. Exit surveys were conducted with 1126 patrons outside four HC and four comparison restaurants in Ontario, Canada (2013). Surveys assessed participant noticing of nutrition information, influence of nutrition information on menu selection, and nutrient intake. Significantly more patrons at HC restaurants noticed nutrition information than at comparison restaurants (34.2% vs. 28.1%; OR = 1.39;  $p = 0.019$ ); however, only 5% of HC restaurant patrons recalled seeing the HC symbol. HC restaurant patrons were more likely to say that their order was influenced by nutrition information (10.9% vs. 4.5%; OR = 2.96,  $p < 0.001$ ); and consumed less saturated fat and carbohydrates, and more protein and fibre ( $p < 0.05$ ). Approximately 15% of HC restaurant patrons ordered HC approved items; however, only 1% ordered a HC item and mentioned seeing the symbol in the restaurant in an unprompted recall task, and only 4% ordered a HC item and reported seeing the symbol on the item when asked directly. The HC program was associated with greater levels of noticing and influence of nutrition information, and more favourable nutrient intake; however, awareness of the HC program was very low and differences most likely reflect the type of restaurants that “self-selected” into the program.

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### 1. Introduction

Diet is a primary risk factor for a range of chronic diseases, including heart disease, diabetes and some forms of cancer (Mensah, 2004; Vineis and Wild, 2014; World Health Organization, 2003). Currently, few Canadians meet recommended dietary guidelines, and less than 1% have ‘good quality diets’, defined as adherence to Canada’s Food Guide (Garriguet, 2009). For example, three-quarters of Canadians exceed the upper limit for sodium consumption and fewer than half consume the recommended amounts of fruit and vegetables (Garriguet, 2004; Health Canada, 2010). As a consequence, the prevalence of nutrition-related conditions is increasing: two-thirds of adult Canadians are overweight or obese, and 7% have been diagnosed with diabetes, an increase of 70% since 1998 (Public Health Agency of Canada, 2011;

Public Health Agency of Canada and Canadian Institute for Health Information, 2011).

Food consumed ‘away from home’ accounts for an increasing proportion of the North American diet (Dietary Guidelines Advisory Committee, 2010; Powell et al., 2012; Powell and Nguyen, 2013; Slater et al., 2009). In Canada, around one quarter of adults eat food prepared in a fast food restaurant each day (Garriguet, 2004). Food eaten outside the home is associated with higher calorie and fat intake, and excess weight gain (Brownell, 2004; Dietary Guidelines Advisory Committee, 2010; Mancino et al., 2009; Nguyen and Powell, 2014; Pereira et al., 2005). A primary challenge to healthy eating in restaurant settings is that consumers have very little idea about the nutritional quality of menu items, which varies widely even for similar items across different establishments (Block et al., 2013; Burton et al., 2006; Scourboutakos and L’Abbé, 2012).

Mandatory labeling of nutrient information has been proposed as a measure to enhance consumer awareness of restaurant foods (Block and Roberto, 2014; Kasapila and Shaarani, 2016), and has been implemented in some US states and municipalities. Federal legislation requiring large chain restaurants ( $\geq 20$  outlets) to post calories on menus is under development in the US (USFDA, 2016). Beginning January 2017, all large chain restaurants in Ontario, Canada will be required to post

\* Corresponding author at: University of Waterloo, School of Public Health and Health Systems, 200 University Avenue West, Waterloo, ON N2L 3G1, Canada.

E-mail addresses: [c5white@uwaterloo.ca](mailto:c5white@uwaterloo.ca) (C.M. White), [heather.lillico@camh.ca](mailto:heather.lillico@camh.ca) (H.G. Lillico), [lane.vanderlee@uwaterloo.ca](mailto:lane.vanderlee@uwaterloo.ca) (L. Vanderlee), [david.hammond@uwaterloo.ca](mailto:david.hammond@uwaterloo.ca) (D. Hammond).

<sup>1</sup> Present address: Centre for Addiction and Mental Health, 33 Russell Street, Toronto, ON, M5S 2S1, Canada.

calories on menus (Government of Ontario, 2016). In the absence of mandatory policies, many restaurants have adopted voluntary measures communicating nutrition information on menus, which include programs developed by individual restaurants or third-parties. The Heart and Stroke Foundation of Canada developed the Health Check restaurant program, a 'summary indicator' system designed to help consumers choose healthy foods. Menu items meeting specific nutrient criteria were identified on restaurant menus or menu boards with the Health Check symbol (see Fig. 1). The Health Check restaurant program was adapted from a similar program for pre-packaged foods, which was the most widely recognized front-of-pack symbol implemented in Canada (Sae Yang, 2012) and was similar to systems common in other jurisdictions (European Food Information Council, 2013; Institute of Medicine, 2011; Roodenburg et al., 2011; Schermer et al., 2013). The Health Check program was discontinued in June 2014; the symbol no longer appears on food packaging or restaurant menus.

Summary indicator symbols, such as the Health Check symbol, are perceived by many consumers as credible indicators of nutrition quality and may support 'faster' at-a-glance food selection choices, compared to more detailed presentations of nutrient content (Andrews et al., 2011; Berning et al., 2008; Emrich et al., 2014; Feunekes et al., 2008; Steenhuis et al., 2010). However, previous research indicates that voluntary summary indicator systems displayed on pre-packaged food items may not always align with a product's nutritional quality (Emrich et al., 2015; Roberto et al., 2012).

To our knowledge, there are no published quasi-experimental studies evaluating voluntary nutrient labeling systems in restaurants. This evidence is directly relevant to jurisdictions where voluntary menu labeling programs are becoming more common and proposed by the industry as a viable alternative to mandatory menu labeling regulations, such as those to be implemented in the US and Ontario, Canada. The current study examined the impact of the Health Check restaurant program on consumer awareness of nutritional information in restaurants, including the Health Check symbol; use of this information in guiding menu selection; and nutrient intake.

## 2. Methods

### 2.1. Study design

The study compared two types of restaurants: those participating in the Health Check program, and comparison restaurants not participating in the program, but with similar menu offerings. Surveys were

conducted with restaurant patrons outside of four Health Check restaurant chains, and 4 comparison chains, with a burger, pizza, pita, and grill restaurant in each group (specific restaurant names not disclosed). Surveys were conducted at 12 outlets total: two outlets per restaurant chain, where feasible (only one for each grill chain, the comparison burger chain, and comparison pita chain). Locations were selected based on feasibility, including restaurant cooperation, reasonable proximity to the research institution, and where possible, neighbourhood diversity (geographically and socio-economically).

#### 2.1.1. Health Check program

The Health Check nutrient criteria were developed by the Heart and Stroke Foundation of Canada's registered dietitians and were based on recommendations in Canada's Food Guide. The criteria included nutrients Canadians should limit, such as total fat, saturated fat, trans fats, and sodium, and those they are encouraged to consume more of, such as fibre, calcium, vitamins and minerals. Calories were not part of the Health Check nutrient criteria. Different menu categories (e.g., soups, side salads, large entrées) each had unique criteria. Generally, Health Check approved items were required to come in standard portion sizes and provide adequate amounts of protein and limited amounts of fat and sodium. Large entrees were required to include a serving of vegetables or fruit.

Restaurants participating in the Health Check program identified menu items that met the nutrient criteria by displaying the Health Check symbol (see Fig. 1) beside the item on the menu or menu board. Across the participating restaurants, the symbol was present on 5–20% of entrée items. Additional nutrition information, including posters and brochures was sometimes available in these restaurants, but was not required to participate in the Health Check program. In the pita Health Check restaurant, calorie information was also displayed on the menu board for approximately half of the pita entrée items, and in the pizza Health Check restaurant, calories, sodium, fat and protein were listed on Health Check approved items. The chains selected as comparison restaurants did not display the Health Check symbol anywhere in their outlets, but still may have displayed some nutrition information (e.g., on pamphlets or brochures); three comparison restaurants (pita, grill and pizza) used other symbols on their menus to indicate "healthy" or "lighter" menu options.

### 2.2. Participants and recruitment

A total of 1146 adults completed the survey. Ten individuals were excluded from the analytic sample due to incomplete food order information; 10 further individuals were excluded due to serious concerns about data quality (e.g., highly intoxicated; visually impaired; severe language barrier), for a final sample size of 1126 ( $n = 589$  at Health Check sites and  $n = 537$  at comparison sites). The study response rate was 34.8% according to the American Association for Public Opinion Research's 4th definition for calculating response rates (American Association for Public Opinion Research, 2011).

At each site, restaurant patrons were approached upon exiting the restaurant using an intercept method and invited to participate. Individuals were eligible to participate if they were 18 years or older; had purchased food or drinks at the restaurant; and had dined in the restaurant, except at pita and pizza restaurants where takeaway customers were also eligible due to low dine-in customer traffic.

### 2.3. Study protocol

Data were collected over an 8-week period (May–June, 2013) during lunch and dinner hours (with approximately equal spread between meals). Computer-assisted personal interviews were administered using iPads, and took approximately 10 min to complete. All restaurants were located within Southern Ontario. Participants received a \$5 gift card for the restaurant where the survey was completed as



Fig. 1. Heart and Stroke Foundation Health Check symbol.

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