

### FOODLIT-PRO: Developing Food Literacy

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**ABSTRACT:** At the National Action Plan for Food and Nutrition 2015-2020, the WHO highlights that poor dietary habits are responsible for many non-communicable diseases (e.g., diabetes, cardiovascular diseases, some cancers). Given the urgency to improve food intake, the lack of consensus over the concept of food literacy and the need of research in this domain, compromises the improvement of eating habits. To identify theoretical gaps, two conceptual models of food literacy (FL) are confronted and goals to develop FL are presented (construct, measure and intervention development) in the ambit of the project FOODLIT-PRO. The first model defines FL as intertwined food-related knowledge, competencies and behaviours that promote physical and psychological wellbeing, having as domains Planning, Selecting, Preparing, and Eating. The second model characterises FL as a combined set of food-related skills and knowledge that support a daily healthy diet, building resilience and incorporating the domains of Preparation, Organisations, Psycho-social Factors, and Knowledge. The lack of psycho-social variables in the first FL model, which is achieved on the second one, highlights the relevance on research concerning psychological dimensions of FL. Aiming the development of this field, this work presents the protocol for the first stage of FOODLIT-PRO.

*Keywords:* FOODLIT-PRO, food literacy, conceptual models, protocol

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### FOODLIT-PRO: DESENVOLVIMENTO DE LITERACIA ALIMENTAR

**RESUMO:** No Plano de Acção Alimentar e Nutricional 2015-2020, a OMS realça que maus hábitos alimentares são responsáveis por doenças não transmissíveis (e.g., diabetes, doenças cardiovasculares, alguns cancros). Dada a urgência na melhoria da ingestão alimentar, a falta de consenso sobre “literacia alimentar” e a carência de investigação-acção neste domínio comprometem a melhoria de comportamentos alimentares. Para identificar lacunas teóricas, confrontam-se os dois modelos conceptuais de literacia alimentar (LA) e propõem-se objectivos de desenvolvimento (constructo, instrumento, e intervenção) no âmbito do projecto FOODLIT-PRO. O primeiro modelo define LA como a interligação de conhecimentos, competências e comportamentos relacionados com a alimentação que promovem bem-estar físico e psicológico e compreende os domínios Planear, Seleccionar, Preparar, e Comer. O segundo modelo define LA como um conjunto de conhecimentos e habilidades que suportam uma dieta saudável diariamente, construindo resiliência, e incorporando os domínios Preparar, Organizar, Factores Psico-Sociais, e Conhecimento. A ausência de variáveis psico-sociais no

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## FOODLIT-PRO: Developing Food Literacy

primeiro modelo, colmatada pelo seu sucessor, realçam a importância de investigar dimensões psicológicas da LA. Visando o aprofundamento deste campo, este trabalho apresenta o protocolo para a primeira fase do FOODLIT-PRO.

*Palavras-chave:* FOODLIT-PRO, literacia alimentar, modelos conceptuais, protocolo

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Acknowledging the rising rates of overweight and obesity over the last few decades, above 50% of European adults with excessive body weight — body mass index (BMI) over 25 kg/m<sup>2</sup> — are reported in the World Health Organization's European Food and Nutrition Action Plan 2015-2020 (WHO, 2014). According to this call for action, having poor dietary habits is a major risk factor directly linked not only to obesity, but also to other noncommunicable diseases (NCDs) such as diabetes, cardiovascular diseases, and some type of cancers. In Portugal, a high BMI is the second risk factor responsible for the loss of life years (10.4%), posteriorly to high blood pressure (11.5%; Institute of Health Metrics and Evaluation, 2015), which also relates to poor diet quality. An adequate food consumption impacts directly on multiple NCD's prevention, contributing to reduce the 2-8% health-related national economic costs associated to obesity (WHO, 2016), and promoting a sustainable growth in other fields, such as agriculture and environment (Programa Nacional para a Promoção de Alimentação Saudável - PNPAS, 2016). Considering the urgency to improve the quality of food intake, individuals' education and empowerment are essential to transform attitudes and behaviours towards food, given the skills and knowledge required to make healthier dietary choices (PNPAS, 2016; WHO, 2014).

In light of this issue, current investigation has just begun to discuss the concept of *food literacy* as well as attempt to clarify its distinction from other constructs — such as *nutrition literacy* and *health literacy* (Colatruglio, & Slater, 2014; Krause, Sommerhalder, Beer-Borst, & Abel, 2016; Palumbo, 2016; Sumner, 2015; Velardo, 2015; Vidgen, & Gallegos, 2014). Though being an increasingly used term, there is not a shared understanding of the concept's meaning, resulting in a range of scarcely developed definitions that do not reach consensus (Krause et al., 2016; Palumbo, 2016; Vaitkeviciute, Ball, & Harris, 2015). Most researchers have been focused on the relationship between food literacy and nutrition literacy; given that the latter is centred in individual's cognitive abilities and emphasises the literacy and numeracy skills required to understand and utilise nutritional information, the former has been pointed as broader, more valuable, and a more effective concept to feature in future behaviour change programs (Palumbo, 2016). Defined as the ability to access, understand, and apply health-related information to improve quality of life (Sørensen et al., 2012), health literacy has been acknowledged as a wide literature umbrella under which feature the terms of nutrition literacy and food literacy, expressing an explicit focus on health literacy skills in the food context (Velardo, 2015).

Particularly concerning food literacy and in an attempt to synthesise distinguished interpretations from past literature, Vidgen and Gallegos (2014) explored — through a qualitative methodology — the perspective of both food experts and common young individuals responsible for feeding themselves. With the results of both studies jointly with a review of previous literature, an integrated theoretical framework that includes not only a solid definition of food literacy, but also the identification of its domains, was the primary step on a structured conceptualisation of the construct. According to the authors (Vidgen & Gallegos, 2014), food literacy designates intertwined food-related knowledge, competencies and behaviours that promote physical and psychological wellbeing; allowing the empowerment of individuals, households, communities and nations, food literacy protects diet quality and supports dietary resilience over contextual changes and through time. Expressing significant impacts on behavioural intentions (Palumbo, 2016), food literacy comprehends 4 domains: 1) Planning and Management — reflecting a

prioritisation of resources for food, the planning of food intake irrespective of the circumstances, and the feasibility of food-related decisions combining the available resources and one's needs (e.g., taste, nutrition value); 2) Selecting — concerning the recognition of food sources and their (dis)advantages, the awareness of food composition, origin, usage and proper storage, and the judgement of its quality; 3) Preparing — regarding the ability to efficiently prepare available food and to apply basic food-related hygienic and handling principles; and 4) Eating — indicating the acknowledgment of food impact on one's wellbeing, the self-awareness of personal needs in respect to food intake, and eating properly in social contexts (Vidgen & Gallegos, 2014).

Another theoretical model was recently proposed (and application currently being funded by Public Health Ontario, Canada), including different personal dimensions of food literacy (Desjardins et al., 2016). According to this perspective, food literacy designates a combined set of food-related skills (techniques, knowledge and abilities) that support a healthy daily diet and abilities to access and share significant information, consequently building resilience and improving the response to challenging barriers. In respect of food literacy domains, this approach states: 1) Food Preparation Skills — demonstrating the ability to use recipes and improvise with ingredients, as well as use food utensils properly; 2) Organisational Skills — regarding planning, formulate a budget, buying and storage food; 3) Psycho-social Factors — including creativity, self-efficacy, confidence, control, and social connectedness; and 4) Food and Nutrition Knowledge — regarding food origin, safety, and labels.

The presence of such significant disparities on food literacy's domains in the two existent theoretical models — particularly, the absence of any psycho-social aspects, such as self-efficacy and control, in the former frame of reference (Vidgen & Gallegos, 2014) — emphasises the lack of conceptual consistency. Given these considerable incongruences between models (Desjardins et al., 2016; Vidgen & Gallegos, 2014) and in light of the scarce literature regarding the study of food literacy's components (Krause et al., 2016; Vaitkeviciute et al., 2015), further development of the concept is needed. In order to provide the perspective of national food-related experts on the meaning of food literacy and its domains, the protocol for the first stage of the Food Literacy Project (FOODLIT-PRO) is currently presented.

## **FOODLIT-PRO**

### **FOODLIT-PRO's First Stage**

#### *Objective.*

The first stage of this multi-phase project is to develop a theoretical model of food literacy that explores not only the construct's definition, but also its domains, in the Portuguese cultural, economic, and social contexts. In order to achieve this, the representations of multiple professionals from diverse food-related fields (including Psychology, Medicine, Nutrition, and Food Industry) concerning food literacy and ways of promoting it will be assessed through both qualitative and quantitative approaches. Similar to the study originally carried out by Vidgen and Gallegos (2014), this first stage of FOODLIT-PRO will only feature the perspectives of food-related experts aiming to obtain consistency from a professional and comprehensive frame of reference.

## **METHOD**

### *Methods and Design*

## FOODLIT-PRO: Developing Food Literacy

As a cross-sectional study and featuring qualitative and quantitative methodologies, this first stage will begin with individual, audio-taped, and semi-structured interviews that will be analysed through both content and thematic analysis (Bardin, 1977; Braun & Clarke, 2006). Regarding the quantitative design, FOODLIT-PRO's first stage will entail statistical analysis appropriate for nominal variables, such as the descriptive method of Multiple Correspondence Analysis (MCA) aiming to generate explicative models of the emergent categories obtained throughout the qualitative approach and allowing a descriptive analysis on which to integrate the food literacy conceptual frame.

*Participants.* Enlightened by the main areas represented in the food literacy literature, the sample of FOODLIT-PRO's first stage will be composed by 35 Portuguese experts in diverse professional sectors, encompassing Nutrition, Medicine, Psychology, Food Production, and Food Industry (including Marketing and Distribution); furthermore, within each sector it is intended to reach those who work in practice, research, advocacy and policy backgrounds, to comprehend distinct perspectives within the same field of action.

### *Material*

A written document with all the information stating this study's purpose will be delivered to all participants; consent to be a part of the study and permission to audio-record the interview will be sought from each participant. Socio-demographic characteristics (e.g., age, sex, educational level), health status and behaviours (e.g., tobacco intake, exercise practice, health issues, nutritional restrictions) will be assessed through a self-report questionnaire. A semi-structured interview protocol (Table 1) was already developed based on the literature (Desjardins et al., 2016; Vidgen & Gallegos, 2014), aiming to explore i) what the experts identify as *food literacy*, ii) their use and comprehension of the construct's domains, identifying similarities and/or discrepancies with the current domains according to the literature (Desjardins et al., 2016; Vidgen & Gallegos, 2014), and iii) currently implemented strategies in their field of action to promote and/or improve food literacy, and possible approaches to be carried out in the future. This interview protocol is presented below, in both English and Portuguese (the native language of the participants). Posteriorly to the interviews' transcription, the software MAXQDA (v. 12) will be used to proceed to the interviews' analysis, guaranteeing a more efficient codification process. All statistical analysis will be performed using SPSS statistics (v. 24).

**Table 1.**

Interview protocol for the first stage of FOODLIT-PRO.

English	Português
What do you understand as food literacy?	O que entende como literacia alimentar?
What do you think is part of food literacy? What components or domains constitute food literacy?	O que pensa que faz parte de literacia alimentar? Que componentes ou domínios constituem literacia alimentar?
How do you think food literacy can be promoted and improved?	Como acha que a literacia alimentar pode ser promovida e melhorada?
What does your institution/company do to promote and/or improve food literacy in its context?	O que é a sua instituição/empresa faz para promover e/ou melhorar literacia alimentar no seu contexto?
What could your institution/company do to promote and/or improve food literacy in its context?	O que é que a sua instituição/empresa poderia fazer para promover e/ou melhorar literacia alimentar?

### *Procedures*

The 35 professionals will be purposely recruited given their field of action (clinical, research, industry, etc.). The written document displaying the information regarding the aim of FOODLIT-PRO's first stage will be firstly delivered; the informed consent will be given and the signature of the permission for audio recording the interview will be asked individually. The individual semi-structured interviews will be made in person according to the participants' availability; standard essential conditions will be assured (empty room with closed door in professional settings) to provide a reserved and exclusive context. Posteriorly, the data will be fully transcribed and analysed by a jury of Psychologists, with both content and thematic analysis. Concerning the qualitative methodology, on one hand, content analysis will follow the instructions of Bardin (1977) and employ the exhaustivity and exclusivity criteria, intending to obtain objective, systematic and quantitative descriptions of the manifested content. On the other hand, the use of thematic analysis will enable the identification, exploration and description of themes with the collected data (Braun & Clarke, 2006), bridging them with the known literature. This combined analysis enables a) an inductive approach, which is a resource when there is scarce information concerning the explored phenomenon in the literature, allows the characterisation of the coded categories directly driven from the manifested content (Vaismoradi, Turunen, & Bondas, 2013), and b) a deductive approach, using theoretical support as resource for the coding mechanism and making a theory-driven analysis in the concept exploration (Elo & Kyngäs, 2008). Regarding the quantitative approach, a MCA will be conducted with the nominal information (presence of category versus absence of category) previously obtained with the qualitative analysis. Mostly used in exploratory studies and particularly relevant when an extensive amount of qualitative data is considered, the MCA allows the uncovering of associations among the previously gathered categories (Costa, Santos, Cunha, Cotter, & Sousa, 2013). The alignments generated from the MCA usually provide fundamental insights concerning the relationships between the grouped categories; thus, the MCA will identify systematic relations between the collected categories by generating an explanatory model of the inherent constructs (Beh, 2004) — which is ideal for the acknowledgement and comprehension of food literacy's domains obtained previously through the qualitative analysis.

## **DISCUSSION**

In order to develop the construct and application of food literacy in both research and intervention, FOODLIT-PRO is a project constituted by multiple goals. This first stage of FOODLIT-PRO will allow to highlight the field of food literacy in our national context, starting by exploring this construct with experts of multiple areas, clarifying its possible domains and particularities, and aiming to develop a theoretical model.

Being a multi-stage project, FOODLIT-PRO is expected to serve — in its initial stage — as an extension for future studies that aim to contribute for the growth of this field of action. Particularly, by enabling a more stable and consistent theoretical background, FOODLIT-PRO intends to posteriorly develop a capable measure to assess one's level and/or type of food literacy and, subsequently, to clinically evaluate — through an evidence-based intervention — how the improvement of this set of food-related skills and competencies (by the name of food literacy) may help to combat the global problematic of poor eating habits that are related to this worldwide scenario of overweight and obesity.



## FOODLIT-PRO: Developing Food Literacy

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