

Suitability Assessment of Printed Dietary Guidelines for Pregnant Women and Parents of Infants and Toddlers From 7 European Countries

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ABSTRACT

Objectives: To evaluate selected European printed dietary guidelines for pregnant women and parents of infants and toddlers using the suitability assessment of materials (SAM) method.

Methods: A descriptive study to determine the suitability of 14 printed dietary guidelines from 7 European countries based on deductive quantitative analyses.

Results: Materials varied greatly in format and content: 35.7% of materials were rated superior and 64.3% were rated adequate according to the overall SAM score for patient education material. None of the materials were scored not suitable. Among the categories, the highest average scores were for layout and typography and the lowest average scores were for cultural appropriateness and learning stimulation and motivation. Interrater reliability ranged from Cohen's kappa of 0.37 to 0.62 (mean, 0.41), indicating fair to moderate agreement among the 3 investigators.

Conclusions and Implications: Overall, the suitability of the assessed printed dietary guidelines was adequate. Based on the SAM methodology, printed dietary guidelines may increase in suitability by emphasizing aspects related to health literacy and accommodating the needs of different food cultures within a population.

Key Words: dietary guidelines, suitability of materials, maternal nutrition, child nutrition (*J Nutr Educ Behav.* 2016;48:146-151.)

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INTRODUCTION

The pregnancy period and the first years of a child's life are characterized by specific nutritional and dietary requirements and the need for safe food.¹ Most national health authorities publish printed dietary guidelines to inform pregnant women and new parents about specific dietary needs during this phase.

These guidelines must be suitable for a heterogeneous population of

pregnant women and parents in terms of literacy level, ethnicity, and previous knowledge about healthy eating. Previous studies show that printed health education materials are often produced with too little attention to their suitability for the intended target population.²⁻⁵ The suitability of printed health promotion materials refers to how well the material can be understood and accepted by the reader and depends on many factors.⁶ Health literacy is important in this context

and includes people's knowledge, motivation, and ability to access, understand, and apply health information.⁷ Because most societies are increasingly multicultural, printed health materials should also be suitable for ethnic minority and immigrant populations.⁸

Although the publication of printed health education materials has increased in recent years, their effectiveness has been questioned in the literature.⁹ Reviews of the literature resulted in recommendations or principles for designing effective printed health educational materials.¹⁰⁻¹² However, this research focuses primarily on printed patient education materials with information about treatment rather than a focus on health promotion.

The suitability assessment of materials (SAM) instrument is a validated method for evaluating written health-related education materials.⁶ It is used to evaluate printed materials in terms of categories and factors known to enhance people's understanding of printed materials.⁶ The

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SAM has previously been used to evaluate patient information and information to promote physical activity.^{2-4,13-15} No publications were found in which SAM was applied to printed dietary guidelines. The aim of this study was to use the SAM method to evaluate selected European printed dietary guidelines for pregnant women and parents of infants and toddlers. The findings are discussed in relation to possible critical factors in the development of new dietary guidelines as emphasized by the SAM instrument.

METHODS

Printed dietary guidelines for pregnant women and parents of children aged 0–6 years were collected from 7 European countries between October, 2011 and February, 2012.¹⁶⁻²⁹ Guidelines were downloaded or ordered from the Web sites of public health authorities in Austria, Germany, and Switzerland (in German language), Denmark, Norway, and Sweden (in Scandinavian languages), and the United Kingdom (in English language). Materials included in the assessment had to (1) be produced by national public health authorities and be distributed free of charge; (2) provide dietary guidelines for pregnant women and parents of children aged 0–6 years; and (3) be written in English, German, or a Scandinavian language.

Three public health nutritionists who could read all 5 languages of the printed dietary guidelines assessed them using the SAM instrument based on an adapted protocol.³⁰ The protocol was pilot tested on 2 separate materials to identify and standardize interpretation of the factors. The 3 investigators evaluated and independently scored all 14 materials. Final scores were based on the mean of the scores. The SAM method rates written materials on 22 factors grouped into 6 categories: content, literacy demand, graphics, layout and typography, learning stimulation and motivation, and cultural appropriateness. Each factor is rated as superior (2 points), adequate (1 point), or not suitable (0 points). Factors that do not apply to the material are rated not applicable. The total possible score is 44, from which 2 points per nonapplicable fac-

tor can be deducted. The original SAM protocol includes a rating measured with the Fry formula for readability level suitable for English-language materials.³¹ This rating was removed from the scores because materials were assessed in different languages. As in the SAM protocol by Smith,³⁰ the scope factor was removed because it proved difficult to score. Thus, the maximum possible score was 40. The overall suitability of a material and each category were presented as a percentage of the maximum possible score. Materials were rated as superior (70–100%), adequate (40–69%), or not suitable (0–39%).³⁰

The content category assessed whether the purpose of the material was explicitly stated, the information provided focused on behavior, and a summary of the materials' key messages including examples was present. In this study, literacy demand was assessed based on writing style (eg, mostly conversational style and active voice), sentence construction (eg, the context is given before new information is given), the use of vocabulary (eg, common words are used, avoiding technical words and jargon), and the use of learning aids such as headers or topic captions. In the graphic category, the cover graphic (eg, cover graphic is friendly and attracts attention) and type of illustration (eg, simple line drawings without distracting details) and their relevance were rated. Graphics were also rated according to whether they included step-by-step instructions for actions with examples and explanatory captions. Layout (eg, visual cuing devices used to direct attention to specific points or key content) and typography (eg, text type and size) were assessed. Within this factor, materials were also rated according to whether they included long lists without descriptive subheadings. Assessment of learning stimulation and motivation considered whether interaction was included in the text (eg, problems or questions) and whether desired behavior patterns were modeled (eg, changing eating patterns, shopping and cooking practices). Assessment of materials' motivation involved whether complex topics were subdivided so that readers experienced that tasks were doable. Cultural appropriateness measured

how well the materials' logic, language, and experience matched the logic, language, and experience of the target audience. Researchers searched materials to determine whether they explicitly referenced a target audience. If they did not, a general population, which is multicultural to all of the selected countries, was assumed. Images of people, illustrations, and suggested foods were assessed for whether they accommodated diverse cultures.

Interrater reliability among the 3 investigators was assessed using Cohen's kappa (κ) in SPSS version 22.0 for Windows (IBM, Chicago, IL, 2013).³² Strength of agreement for Cohen's κ ranges from 0 to 1.0 with a coefficient of ≤ 0.20 indicating poor agreement, 0.21–0.40 indicating fair agreement, 0.41–0.60 indicating moderate agreement, 0.61–0.80 indicating good or substantial agreement, and 0.81–1.0 indicating almost perfect agreement.³³ The researchers calculated Cohen's κ for each pair of investigators in each category of variables (category-specific). Review by the Norwegian Data Protection Official for Research was not required for this study because human subjects were not involved.³⁴

RESULTS

The researchers assessed 1 printed dietary guideline for pregnant women and 1 for parents of infants and toddlers from each of 7 countries, resulting in a total of 14 materials. The format of the materials (brochures, booklets, books, and flyers) varied greatly in length, from 2 to 122 pages, as well as the content. All of the materials for pregnant women included topics other than dietary guidelines. Materials for parents of infants and toddlers were usually organized according to the child's age, with a general emphasis on breastfeeding and the introduction of solid foods. Most of the 14 materials provided food-based dietary advice.

The category-specific interrater reliability for the SAM categories ranged from Cohen's κ of 0.37 to 0.62 (mean, 0.41), indicating variation between categories from fair to moderate agreement among the 3 investigators with the exception of good agreement regarding content.

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