



# The Nutritional Quality of Food Provided from Food Pantries: A Systematic Review of Existing Literature

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## ARTICLE INFORMATION

### Article history:

Submitted 4 April 2016  
Accepted 18 August 2016  
Available online 7 October 2016

### Keywords:

Food insecurity  
Food banks  
Charitable food assistance  
Food supply  
Poverty

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<http://dx.doi.org/10.1016/j.jand.2016.08.015>

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## ABSTRACT

**Background** In many affluent countries, food-insecure households use food pantries to keep their family fed. The long-term dependence of many users on these programs calls for a systematic review of studies on the nutritional quality of food provided by food pantries.

**Objective** The purpose of this systematic review was to summarize the current scientific evidence about the nutritional quality of food bags distributed by food pantries.

**Methods** A systematic literature search was conducted in the electronic databases PubMed, PsycINFO, PsycARTICLES, and Psychology Behavioral Sciences Collection to identify cross-sectional, cohort, and intervention studies reporting baseline data conducted in high-income countries and published between 1980 and 2015, which reported the nutritional quality of food bags distributed by food pantries. Identified citations were screened in two stages and data were independently extracted by two authors using a predefined data sheet. The quality of included studies was evaluated using criteria of an adapted Ottawa Scale. The systematic review was reported in accordance to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement.

**Results** Applying the two-stage screening, 9 of 1,546 articles were identified for inclusion. Nutritional quality of food bags varied widely between and within studies. Milk products, vitamins A and C, and calcium were provided in particularly low amounts. None of the studies were nationally representative and only a few studies controlled for the household composition of the recipients of food bags.

**Conclusion** Food pantries likely have a strong influence on users' diets, but the food pantries examined in the selected studies were largely unable to support healthy diets. The distribution of more perishable foods would increase users' diet quality and may have an immense potential to address malnutrition in vulnerable population groups.

*J Acad Nutr Diet.* 2017;117:577-588.

**I**N MANY AFFLUENT COUNTRIES, THE PREVALENCE OF food insecurity has increased in recent years.<sup>1-3</sup> Food insecurity exists whenever the availability of nutritionally adequate and safe foods or the ability to acquire acceptable foods in socially acceptable ways is limited or uncertain.<sup>4</sup>

Food insecurity tends to be higher in households relying on social assistance, in households of single parents, and in

ethnic minorities.<sup>1,3</sup> Many food-insecure households use various coping strategies, including prioritizing food quantity over quality, “stretching” food, and finding sources of free food, such as food banks and food pantries.<sup>5,6</sup> Food-insecure households are much more likely to use a food pantry than food-secure households.<sup>7-9</sup>

Traditional food pantry programs supply eligible households with predetermined bags of nonprepared food items donated by retailers, manufacturers, industries, producers, churches, and community members, which are intended to last a certain number of days, usually 3 to 5 days.<sup>10,11</sup> Recently, some food pantries have adopted a choice model where clients can shop in a grocery store–like atmosphere and choose food based on needs, preferences, and household size.<sup>12,13</sup> Although food pantries have initially been established as temporary food assistance, many users chronically rely on food pantry assistance.<sup>14,15</sup> The number of clients of most food pantries has increased steadily,<sup>16,17</sup> and over the last several decades food pantries have become a fixed part of

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food landscapes in countries such as the United States,<sup>16</sup> Canada,<sup>17</sup> Australia,<sup>18</sup> and several European countries.<sup>19-22</sup>

While food pantries usually allow people to receive their food assistance at least once per month or even weekly,<sup>23,24</sup> many users are reported to use the food pantry whenever possible.<sup>14</sup>

Long-term dependence on food pantries, in combination with the unpredictable nature of donated foods, calls for a comprehensive evaluation of the literature to summarize studies investigating the nutritional quality of food bags provided by food pantries.

This knowledge might contribute to a better understanding of the potential impacts and limitations of food pantries and may help managers of food banks and pantries identify nutritional gaps in their food supply. Finally, it may inform welfare case workers, social agencies, and other providers that often refer people to food pantries and food banks.<sup>10</sup>

This systematic review aims to summarize information with regard to the nutritional quality of food bags provided by food pantries in high-income countries. For this purpose, the review synthesizes findings of studies comparing the nutritive value of food provided by the studied pantries compared to national recommendations.

## METHODS

The systematic review adheres to the reporting guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement.<sup>25</sup> Data on the nutritional quality of food bags that were distributed by food pantries were summarized according to defined outcome categories. Methods and inclusion criteria were specified in advance and the review was registered in the International Prospective Register of Systematic Reviews (PROSPERO, registration no. CRD42015024509).

## Definitions

*Food aid programs, community food programs, and food rescue programs* are just a few of the diverse terms used to denote programs that provide charitable food assistance. Throughout this article, the terms *food banks* and *food pantries* are used according to the definitions presented here. When citing results of the included studies, the definitions of the study authors were used.

Food banks usually receive large quantities of foods from industry, manufacturers, and federal or supranational sources, such as The Emergency Food Assistance Program<sup>26</sup> or the European Union Food Aid,<sup>27</sup> and distribute these foods to smaller charitable agencies, including soup kitchens and food pantries.

Food pantries tend to be smaller than food banks and serve clients directly.<sup>28</sup> In addition to foods received from food banks, food pantries usually collect foods, including perishable food items, and provide those in bags for clients to take home.<sup>16</sup>

## Study Eligibility Criteria

To be included in this systematic review, articles had to describe a cross-sectional, cohort, or intervention study reporting baseline data. In addition, included studies had to report on activities that regularly provide food in bags to take home alone or in combination with other food-related

services, such as assistance related to government programs or nonfood services, such as assistance with clothes. The distribution of food bags had to be free of charge or at minimal fixed costs and had to be undertaken by nonfederal charitable food assistance agencies and conducted in high-income countries. World Bank definitions were used to categorize high-income countries.<sup>29</sup>

Furthermore, the article must have provided original data on the nutritional quality of the supplied food bags by comparing the dietary content with dietary recommendations and had to be published in English or German.

Although there are common features of food banks operating in low-, middle-, and high-income countries, food bank programs in low-, and middle-income countries differ from food banks in high-income countries in several measures. For instance, food banks in Uganda provide seeds and practical training in farmer methods and agribusiness to farmers directly,<sup>30</sup> whereas food banks in high-income countries sometimes cooperate with local farmers and farmers' cooperatives to expand their range of donors, but they do not usually teach them.<sup>16</sup> Due to the complexity of these differences, studies conducted outside high-income countries were excluded. Due to differences in operations, aims, and eligibility criteria between usual food pantries and food pantries for children only, articles were excluded from formal review if they focused on children and/or youth programs only. They were also excluded if they reported on beverage and food inventory of food banks or food pantries only, because the inventory data may not necessarily reflect the amount and quality of food provided to any single user. Articles were likewise excluded if they reported on interventions that provided prepared meals to participants, such as soup kitchens or Meals on Wheels programs; on food subsidy programs, including interventions providing food vouchers; or on community garden and community-supported agriculture programs. Finally, intervention studies providing foods to individuals for a short time (study duration <6 months) were excluded. These interventions may be promising approaches to improve the nutritional quality of provided food, but they may not reflect the "usual" food supply of food pantries in the long term.

## Searching

A systematic literature search was performed in the electronic database Medline using the medical subject headings (MeSH) *food supply, food services, food assistance, and nutritive value, food quality, and free-text keywords such as food bank, food pantry, and community food assistance* (Figure 1). In the electronic databases PsycINFO, PsycARTICLES, and Psychology Behavioral Sciences Collection, combined free-text keywords were used. The last search was conducted on July 14, 2015.

In addition, reference lists of all included articles were screened by hand for potentially eligible articles. Specialized websites, including food bank website, were scanned and organization's publications including annual reports were reviewed to identify relevant gray literature.

All citations were screened in two stages. The initial screening (conducted by author A.S.) was based on titles, abstracts, and keywords. Full-text versions of the citations were obtained if there was doubt regarding eligibility. At the second stage, full texts were independently assessed for

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