Qualifying instrument for evaluation of food and nutritional care in hospital

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Abstract

Establishing criteria for hospital nutrition care ensures that quality care is delivered to patients. The responsibility of the Hospital Food and Nutrition Service (HFNS) is not always well defined, despite efforts to establish guidelines for patient clinical nutrition practice. This study describes the elaboration of an Instrument for Evaluation of Food and Nutritional Care (IEFNC) aimed at directing the actions of the Hospital Food and Nutrition Service. This instrument was qualified by means of a comparative analysis of the categories related to hospital food and nutritional care, published in the literature. Elaboration of the IEFNC comprised the following stages: (a) a survey of databases and documents for selection of the categories to be used in nutrition care evaluation, (b) a study of the institutional procedures for nutrition practice at two Brazilian hospitals, in order to provide a description of the sequence of actions that should be taken by the HFNS as well as other services participating in nutrition care, (c) design of the IEFNC based on the categories published in the literature, adapted to the sequence of actions observed in the routines of the hospitals under study, (d) application of the questionnaire at two different hospitals that was mentioned in the item (b), in order to assess the time spent on its application, the difficulties in phrasing the questions, and the coverage of the instrument, and (e) finalization of the instrument. The IEFNC consists of 50 open and closed questions on two areas of food and nutritional care in hospital: inpatient nutritional care and food service quality. It deals with the characterization and structure of hospitals and their HFNS, the actions concerning the patients’ nutritional evaluation and monitoring, the meal production system, and the hospital diets. “This questionnaire is a tool that can be seen as a portrait of the structure and characteristics of the HFNS and its performance in clinical and meal management dietitian activities.”

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Introduction

Establishing criteria for inpatient nutrition care has been a major concern, since standardization of clinical nutrition practices can ensure the delivery of quality inpatient care.\textsuperscript{1,3} Assigning a team to undertake the responsibility for nutrition care has been identified as an important factor for hospital care improvement.\textsuperscript{4} On the other hand, the responsibility of the Hospital Food and Nutritional Service (HFNS) for nutrition care has not been well defined yet, although a lot of effort has been put into establishing guidelines for patient clinical nutrition practice.

Both the prevalence of hospital malnutrition and the increasing number of hospital admissions due to chronic diseases that require nutritional treatment justify intensification of inpatient nutrition care.\textsuperscript{5,6} Food and nutritional care in hospital comprises sequences of actions related to patient care that involve nutritional evaluation and monitoring, and diet therapy strategies,\textsuperscript{7,8,9} as well as the design, production and distribution of meals.\textsuperscript{10,11} Both direct patient care and meal production are essential for nutrition care. Although it has not always been properly recognized by health care institutions,\textsuperscript{11} hospital nutrition guarantees nutritional supply. Therefore, an adequate nutritional strategy can contribute to making hospitalization a more agreeable experience.\textsuperscript{12}

Standard nutrition care practices can ensure quality care. In 1987, the American Dietetic Association (ADA) implemented standard practices constantly monitored through evaluation and updating. When the ADA Council on Practice Quality Management Committee\textsuperscript{2} revised the criteria for evaluation of standards of practice for clinical nutrition managers, they recognized that the criteria for the implementation and evaluation of standards, as well as their indicators, required managers and regulatory agencies. In addition, these standards served to describe job profiles, tools, and recommendations.

The study of the practices related to patient nutrition care in Europe detected five major problems related to hospital nutrition: lack of clearly defined responsibilities, deficient staff training, no influence from patients, insufficient cooperation among staff members, and lack of involvement from the hospital management.\textsuperscript{13} Flanel et al.\textsuperscript{3} described a program for the continuous quality improvement of clinical nutrition services based in steps including professionals actions, scope of care, indicators and triggers for evaluation, data collection and organization, human resources, assessment of action effectiveness and establishment of new strategies.

Actions of hospital and ambulatory nutrition care that include dietetic intervention, evaluation and monitoring of the patient’s nutritional status, and other details directly or indirectly related to patient care are described by the Brazilian legislation regulating the activities of dietitians in clinical nutrition. However, a study on the working situation of dietitian has revealed that professionals concentrate their activities on the management of meal production, being less available for patient supervision.\textsuperscript{14,15,16}

A comparative, documental analysis of the management of nutrition care by dietitians in hospitals located in Brazil and France, performed by means of semi-structured interviews and direct observation, detected the concentrated activities on the management of food service.\textsuperscript{7} Study about hospital diet perception by the hospital staff\textsuperscript{4} shows that it reflected the hospitalization characteristics in terms of control and discipline conditions, besides it revealed a small influence of patients on their own nutrition. Lassen et al.\textsuperscript{17} studied the nutrition care provided to hospitalized individuals, the importance of the diet for the patients, and faults in the hospital nutrition service. The results indicated that, if nutrition care is to be improved, it must be seen as a priority within the hospital, and tools to ensure its quality must be available. Patients should somehow be allowed to choose their own diet, and better patient-staff communication should be established.

The systematization of actions in institutional nutrition must be in line with indicators of hospital quality. In a document about the best strategies to ensure hospital quality produced by the World Health Organization and Health Evidence Network,\textsuperscript{20} discusses the need to formulate standards, protocols (guidelines), and mechanisms of quality evaluation (accreditation).

To articulate the scope of the work of the HFNS in terms of inpatient and outpatient care as well as meal production, it is necessary to revisit and reconstruct this service, so that the dietary and nutritional requirements of the hospital are met. This shall result in actions that aim at improving the quality and efficacy of nutrition care. Additionally, it is mandatory that indicators are constructed and a continuous system of evaluation of hospital nutrition practices is adapted to the existing conditions. Instruments for evaluation of hospital nutrition care following the criteria established in the literature and adjusted to the regional context should be shared, so as to improve the indicators of quality in this sector.

The objective of the present study was to describe the elaboration of an Instrument for Evaluation of Food and Nutritional Care targeting the actions of the HFNS. This instrument was qualified by means of a comparative analysis of the nutrition care categories reported in the literature.

Methods

Elaboration of the IEFNC comprised 5 phases.

1. Phase 1: a bibliographic survey of the Medline and Scielo (Scientific Eletronic Library on Line) databases as well as documents such as legislations, recommendations of professional societies, and hospital accreditation criteria was accomplished, in order to select the cate-
2. Phase 2: two studies on institutional procedures for inpatient nutrition care were conducted in two Brazilian hospitals, namely a public institution (180 beds) and a private one (134 beds), for a period of one week in each place. The criteria applied to select the hospitals were they had to be: a general hospital, of the same size (around 150 beds), and located in the metropolitan region where this study was conducted. We selected the municipality and metropolitan region of Campinas (pop. 2,832,297) because it is an important economic and scientific-technological center, with many health services of nationwide recognition, and home to various universities. The objective of this phase was to describe the sequence of actions performed by the HFNS and its relation with other services that also participate in some steps of nutrition care. This sequence of actions ranged from dietetic prescription to diet delivery to the patient. Two nutrition undergraduate students acted as observers, accompanying the activities involved in meal preparation and distribution, as well as the ward routines. These students also spent time with the patients during the meals, so as to determine the subjects’ difficulties concerning the dietary routine as well as the mechanisms employed by the hospitalized individuals to overcome them. The observations were recorded in a field notebook, to enable organization of the sequence of actions, routines, difficulties, and problem-solving strategies.

3. Phase 3: the first two phases aided elaboration of the IEFNC, which consisted of categories reported in the literature, adapted to the actions observed in the routines of the two hospitals under study. Open and closed questions were formulated, grouped according to categories, and directed at the coordinator of the HFNS. Some questions were formulated in order to check the replies to others. Thus, a given action was considered positive when a set of responses supported that statement. The objective of this strategy was to certify the HFNS characteristics and conditions.

4. Phase 4: application of the questionnaire at two different hospitals located in two municipalities in the same metropolitan region, in order to determine the time devoted to questionnaire completion and the possible difficulties in phrasing the questions. The opinion of the interviewees about the scope of the instrument was registered. The interviews were recorded on tape while the interviewer completed the questionnaire. The interviewer took between 1½ and 2 hours to apply the questionnaire, depending on how often the interview was interrupted, how detailed the replies were, and how frequently the interviewee asked for clarification of the procedures.

5. Phase 5: in order to finalize the questionnaire, some questions were reformulated and others were subdivided. The recommendation for the questions to be completed in two stages was accepted, so the information that depended on consultation with third parties and the complementation of the questionnaire were left for the second meeting. Interviewees of both hospitals considered the IEFNC complete for analysis of the HFNS.

The qualification of the instrument was done according to a qualitative approach, comparing categories between the IEFNC and literature about this subject. The instrument was compared with different documents and papers involving the diagnosis and proposition of standards of practice in hospital nutrition care. The Brazilian legislation was also taken into account. The aforementioned documents were: Standards of professional practice-consultant dietitians health care facilities;21 and Standards of practice criteria for clinical nutrition managers, both belonging to the American Dietetic Association; the European Council’s Nutrition program in hospitals;12 European Union; the 1991 criteria of the Joint Commission on Accreditation of Healthcare Organization; the resolutions of the Brazilian Federal Nutrition Council (law 8,234, which regulates theprofession; resolution 223/99, which deals with professional practice in clinical nutrition; resolution 304/2003, which handles the criteria for dietetic prescription in clinical nutrition; resolution 306/2003, which considers the criteria for requesting laboratory tests in clinical nutrition; and resolution 380/2006, which regulates the areas dietitians can work as well as the attributions of this professional, and establishes numerical reference parameters per activity), and the hospital accreditation manual.22

Results

This IEFNC consists of 50 open and closed questions, formulated to evaluate two areas of nutrition care: inpatient clinical nutrition practice and meal production. It deals with the characterization and structure of hospitals and the HFNS, the actions concerning nutritional evaluation and patient monitoring, the system employed for meal production, and the hospital diets (Appendix 1). The IEFNC is divided into 6 major categories (2 generals, 3 specifics and 1 specific about questionnaire evaluation), described by different items (table I). The instrument is organized according to the dietitian’s routine, in clinical nutrition and meal production areas, so as to facilitate conduction of the interview. The items considered in the questionnaire are related to service quality indicators; infrastructure, systematized data generation, knowledge update and their application to patient care routines; supervision and strategies of nutrition care actions; intra-institu-
## APPENDIX 1

**Instrument for evaluation of food and nutritional care in hospital**

### 1. Identification

- **Number of beds:** __________
- **Rate of occupation:** __________

### 2. Hospital characteristics

- **Number of dietitians:** __________
- **Number of medical records:** __________

### 3. Structure of the hospital food and nutrition service - HFNS

- **Number of employees:** __________
- **Number of dietitians:** __________
- **Number of nurses:** __________
- **Number of cooks:** __________

### 4. Contract work

- **Number of hospital beds:** __________
- **Rate of occupation:** __________

### 5. Activities of dietitians in hospital units (clinics and wards)

- **Number of patients submitted to nutritional evaluation (NE):** __________
- **Number of patients who requests internal nutrition consultation:** __________
- **Number of patients contacted by dietitian:** __________

### 6. Activities of the management dietitian of food service

- **Number of patients submitted to nutritional evaluation:** __________
- **Number of patients who requests internal nutrition consultation:** __________

### 7. Hospital diet characteristics

- **Number of patients who requests internal nutrition consultation:** __________
- **Number of patients who receives nutritional counseling:** __________

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Table I
Categories, items covered by each category, and questions related in the Appendix 1

<table>
<thead>
<tr>
<th>Categories</th>
<th>Items covered by the questionnaire</th>
<th>Number of questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital characteristics and HFNS structure</td>
<td>Number of beds</td>
<td>2.1</td>
</tr>
<tr>
<td></td>
<td>Juridical nature</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>Number of employees</td>
<td>3.1</td>
</tr>
<tr>
<td></td>
<td>Number of dietitians</td>
<td>4.1</td>
</tr>
<tr>
<td></td>
<td>Dimensioning of meal production</td>
<td>3.2; 3.3</td>
</tr>
<tr>
<td></td>
<td>Infrastructure (computer, specialized dietetic kitchen)</td>
<td>3.4; 6.7</td>
</tr>
<tr>
<td></td>
<td>Situation in the organizational structure</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>Objectives and priorities of the Nutrition Service (HFNS)</td>
<td>7.9</td>
</tr>
<tr>
<td>Contract work</td>
<td>Number of dietitians /area</td>
<td>4.1</td>
</tr>
<tr>
<td></td>
<td>Contract work hours</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>Shift system</td>
<td>4.3</td>
</tr>
<tr>
<td></td>
<td>Nutritional evaluation of inpatients (periodicity, priorities, responsibility, protocols, records, indicators, instruments)</td>
<td>5.1; 5.2; 5.3; 5.4; 5.5; 5.6</td>
</tr>
<tr>
<td></td>
<td>Diet and patient monitoring</td>
<td>5.7; 5.8</td>
</tr>
<tr>
<td></td>
<td>Relationship with the multiprofessional team (entry of information in the medical records, visit with the team)</td>
<td>5.6; 5.12; 5.13; 5.15</td>
</tr>
<tr>
<td></td>
<td>Intra-institutional relationship</td>
<td>5.14; 5.16</td>
</tr>
<tr>
<td></td>
<td>Diet prescription</td>
<td>5.10</td>
</tr>
<tr>
<td></td>
<td>Nutritional support team</td>
<td>5.18</td>
</tr>
<tr>
<td></td>
<td>Mechanisms of patient manifestation (user’s satisfaction, diet modification)</td>
<td>5.17; 7.8</td>
</tr>
<tr>
<td></td>
<td>Protocols</td>
<td>5.11</td>
</tr>
<tr>
<td></td>
<td>Nutritional education</td>
<td>5.9</td>
</tr>
<tr>
<td></td>
<td>Menu diversity and quality control</td>
<td>6.5; 6.6; 6.8; 7.7</td>
</tr>
<tr>
<td></td>
<td>Meal production control</td>
<td>6.2; 6.4; 7.4</td>
</tr>
<tr>
<td></td>
<td>Good practice manual</td>
<td>6.12</td>
</tr>
<tr>
<td></td>
<td>Staff training and assessment</td>
<td>6.9; 6.10; 6.11</td>
</tr>
<tr>
<td></td>
<td>Budget management</td>
<td>6.1; 6.3</td>
</tr>
<tr>
<td></td>
<td>Service planning and objectives, engagement with hospital planning</td>
<td>6.13; 6.14; 7.9</td>
</tr>
<tr>
<td>Hospital diet characteristics</td>
<td>Diet manual (types, nutritional information)</td>
<td>7.1; 7.2; 7.3</td>
</tr>
<tr>
<td></td>
<td>Control of prescribed diets</td>
<td>7.4</td>
</tr>
<tr>
<td></td>
<td>Nutritional supplements</td>
<td>7.5; 7.6; 7.7</td>
</tr>
<tr>
<td>Questionnaire evaluation</td>
<td>Coverage and time spent on completing the questionnaire</td>
<td>7.10</td>
</tr>
</tbody>
</table>

National communication and dissemination and participation of multiprofessional teams, management and use of resources; evaluation of other feedback mechanisms for service planning; professional qualifications and responsibilities.

The instrument was qualifying by comparison of its categories with those reported in the literature (table II).

Discussion

The present IEFNC resulted from efforts devoted to the evaluation of the quality of nutrition care in hospitals. The interdependence between inpatient care and meal production infrastructure should assist the institution in meeting the patients’ nutritional requirements, thus enabling improvement of nutrition care.

However, for the instrument to be successful, various steps must be taken. First, it is mandatory that the interviewer employs appropriate techniques when conducting such a detailed interview. S/he has to be skillful at using different strategies, so that the necessary information is obtained. Punctual replies without sufficient explanations should not be accepted. A further issue that may pose difficulties to questionnaire completion is the length of the interview and the time spent on its application, which may reduce compliance of the interviewee. To circumvent this problem, conduction of the questionnaire as a two-stage evaluation process may improve the quality of the obtained information. Because the questionnaire is applied at the interviewee’s workplace, it is also necessary to guarantee privacy at the interview site.

The IEFNC does not include criteria concerning the periodicity of evaluation, continued staff training, reports, and quantification of the coverage of actions, especially those regarding the nutritional evaluation of patients. Instruments for the coverage of the existing actions are necessary in order to expand analysis of the actions related to patient care, to develop a mechanism of evaluation and to improve the coverage and to test it.

In 2003, the Council of Europe-Committee of Ministers published a legislation detailing five principles and
Table II
Comparison of the IEFNC categories with those reported in the literature

<table>
<thead>
<tr>
<th>Category</th>
<th>Items covered by the questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nutrition programs in hospitals (Beck et al., 2001, 2002)</td>
</tr>
<tr>
<td></td>
<td>Standards of practice criteria for clinical nutrition managers (Witte et al., 1997)</td>
</tr>
<tr>
<td></td>
<td>Standards of professional practice-consultant dietitians health care facilities (Vogelzang, 2001)</td>
</tr>
<tr>
<td></td>
<td>Continuous quality improvement in patient clinical nutrition services (Pianet et al., 1995)</td>
</tr>
<tr>
<td></td>
<td>Legislation resolutions of the Federal Council of dietitians and dimensioning of local reality</td>
</tr>
<tr>
<td>Hospital characteristics</td>
<td>Standards of practice of professional quality resolutions</td>
</tr>
<tr>
<td>and HFNS structure</td>
<td>Standards of professional practice-consultant dietitians health care facilities (Vogelzang, 2001)</td>
</tr>
<tr>
<td></td>
<td>Continuous quality improvement in patient clinical nutrition services (Pianet et al., 1995)</td>
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<tr>
<td></td>
<td>Legislation resolutions of the Federal Council of dietitians and dimensioning of local reality</td>
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<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of beds</td>
<td>x</td>
</tr>
<tr>
<td>Juridical nature</td>
<td>x</td>
</tr>
<tr>
<td>Number of employees</td>
<td>x</td>
</tr>
<tr>
<td>Number of dietitians</td>
<td></td>
</tr>
<tr>
<td>Dimensioning of meal production</td>
<td>x</td>
</tr>
<tr>
<td>Infrastructure (computer, specialized kitchen)</td>
<td>x</td>
</tr>
<tr>
<td>Situation in the organizational structure</td>
<td>x</td>
</tr>
<tr>
<td>Objectives and priorities of the Nutrition Service (HFNS)</td>
<td>x</td>
</tr>
<tr>
<td>Number of dietitians/area</td>
<td>x</td>
</tr>
<tr>
<td>Contract work hours</td>
<td>x</td>
</tr>
<tr>
<td>Shift system</td>
<td>x</td>
</tr>
<tr>
<td>Nutritional evaluation of inpatients (periodicity, priorities, responsibility, protocols, records, indicators, instruments)</td>
<td>x x x x x x</td>
</tr>
<tr>
<td>Diet and patient monitoring</td>
<td>x x x x x x</td>
</tr>
<tr>
<td>Relationship with the multiprofessional team (entry of information in the medical records, visit with the team)</td>
<td>x x x x x x</td>
</tr>
<tr>
<td>Intrainstitutional relationship</td>
<td>x x x</td>
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<tr>
<td>Diet prescription</td>
<td>x x</td>
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<tr>
<td>Nutritional support team</td>
<td>x x x x x x</td>
</tr>
<tr>
<td>Mechanisms of patient manifestation (user’s satisfaction, diet modification)</td>
<td>x x x x x x</td>
</tr>
<tr>
<td>Protocols</td>
<td>x x x x x</td>
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<tr>
<td>Nutritional education</td>
<td>x x x x x</td>
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<tr>
<td>Menu diversity and quality control</td>
<td>x x x x x x</td>
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<tr>
<td>Meal production control</td>
<td>x x x x x</td>
</tr>
<tr>
<td>Good practice manual</td>
<td>x x x x x</td>
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<tr>
<td>Staff training and evaluation</td>
<td>x x</td>
</tr>
<tr>
<td>Budget management</td>
<td>x x x x x</td>
</tr>
<tr>
<td>Service planning and objectives, engagement with hospital planning</td>
<td>x x x x</td>
</tr>
<tr>
<td>Diet manual (types, nutritional information)</td>
<td>x x x x x</td>
</tr>
<tr>
<td>Control of prescribed diets</td>
<td>x x x x x</td>
</tr>
<tr>
<td>Nutritional supplements</td>
<td>x x x x x</td>
</tr>
<tr>
<td>Coverage and time spent on completing the questionnaire</td>
<td>x x x x x</td>
</tr>
</tbody>
</table>

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measures that should be considered for increased health protection to be achieved. These principles contributed to maintaining harmony between legislation and practices, besides controlling the quality and safety of products that have a direct or indirect impact on the food chain of human beings. The principles are presented in themes dealing with issues like nutritional evaluation and treatment in hospitals, responsibilities of staff categories for hospital nutrition care, meal production and hospital nutrition, and the costs involved in these processes.27

In order to evaluate the hospital stay of undernourished patients in 25 Brazilian hospitals, patients were monitored for complications, mortality, and length and cost of hospitalization. Malnutrition proved to be one of the most important factors interfering with health and disease, thus confirming that the best decision is to treat inpatients’ disease and start nutritional intervention early.28-30

The need for nutritional risk screening was also emphasized in an anthropometric survey of the nutritional status. Only 25% of the undernourished patients (BMI < 18.5 kg/m²), including those with important and recent weight loss, were attended by the nutrition service. According to the authors, the clinical team’s failure to recognize malnutrition during hospitalization will continue if professionals insist on neglecting routine nutritional evaluation.22

Förnbénn2 reported that the high prevalence of undernutrition (41.2%) encountered in 12 surveyed Cuban public hospitals was accompanied by poor documentation of the patient’s nutritional status. In the present IEFNC, the questions regarding the dietitian’s qualifications, the descriptions of the routines, protocols and actions directed at the patient, and the integration of the dietitian with the health team attempt at finding out how the HFNS deals with the prevention of hospital malnutrition.

In 2004 in Denmark, there was a re-evaluation of actions in clinical nutrition by means of a questionnaire that included questions about attitudes and practices in nutritional screening, treatment and monitoring plans. Despite the significant positive points, the lack of knowledge, interest and defined responsibilities, combined with the usual difficulties in designing a good nutritional plan, continued to be an obstacle to the development of clinical nutrition in that country.30

Patient perception of nutritional care in Denmark was evaluated by means of five questionnaires on the importance of, and satisfaction with the meals, information provided by the team on the institution’s food service, and the conditions of meal distribution. The replies revealed that hospital food has a great impact on the patients’ perception of well-being, the usual diet is a parameter for evaluation of the food service provided by the hospital, patients perceive the importance of diet for their recovery and treatment, and patients seldom have the opportunity to express their preferences and complaints to the service.31

Stanga et al.12 employed a validated 16-item questionnaire as the tool to assess the opinion of 317 patients on an oral diet in two Swiss health institutions. In general, the responses were positive regarding satisfaction with meals during hospitalization, in contrast with the general notion based on complaints. This is possibly because dissatisfaction is more frequently verbalized than satisfaction. The study produced recommendations for improvement in hospital food and presentation. Suggestions took into account factors that interfere with appetite and even mentioned offering patients options regarding the temperature and presentation of the meals. These recommendations resulted in the creation of a head position responsible for quality standards in provision of nutritional care by health institutions.

Questions included in the IEFNC dealing with the quality of the diet, the professional actions directed at the detection of food and nutritional problems, and the mechanisms of manifestation of inpatients enables one to assess how the HFNS provides food and nutritional care to patients. In addition to evaluating meal quality, Duspertui et al.36 investigated the reasons for low food consumption. These authors concluded that, even though the supply was sufficient, the nutritional requirements of most inpatients were not covered, thus indicating the need for strategies concerning diet improvement. Ensuring availability of mechanisms for patients to express their views and flexibility on the part of the HFNS can contribute to improved hospital food consumption.

Although distinct realities are observed, several studies report the lack of standardized procedures associated with no definition of responsibilities regarding the provision of hospital nutrition care. The support of the IEFNC with respect to surveys, documents of regulatory organizations and legislation, and field research for the construction of an analysis method adapted to local reality, were the strategies employed here to integrate the particular features observed in the health institutions under study with scientific indicators. This support can thus become an important tool for determination of how nutritional care is structured in hospital institutions.

Acknowledgments

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References