



## Original article

# Clinical nutrition in primary care: An evaluation of resident physicians' attitudes and self-perceived proficiency



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## SUMMARY

**Background & aims:** There is little information regarding the impact of clinical nutrition training among medical residents. We aimed to evaluate the attitudes, self-perceived proficiency and knowledge of Swiss residents regarding clinical nutrition.

**Methods:** Cross-sectional study conducted between June and September 2014 in two medical education facilities located in Lausanne, Switzerland. Attitudes, self-perceived proficiency and knowledge regarding clinical nutrition were assessed by questionnaire.

**Results:** Of the 88 internal medicine residents queried, 44 (50% response rate, 25 women, mean age  $34 \pm 4$  years) answered the questionnaire. Three quarters of the residents were trained in Switzerland and one third reported receiving some training in clinical nutrition. Seven out of ten (70.5%) residents agreed that all doctors should know how to provide nutrition-based assessment, no matter what their specialty. Conversely, only one out of ten (11.4%) felt that physicians were adequately trained. No differences were found between genders or country of training regarding the answers provided.

**Conclusion:** Residents in Lausanne perceive clinical nutrition in primary care as a priority but lack the confidence and training to effectively use clinical nutrition in their daily practice.

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## 1. Introduction

Nutrition in primary care is an effective and necessary preventive health care measure. In a study of the effects of nutrition counseling for overweight and obese patients, physicians who were using patient-centered and motivational nutrition counseling techniques were more successful in improving the fat and fiber intake scores and raising confidence to improve clinical nutrition of their patients [1]. Another study found that a computer-assisted intervention to improve physical activity and dietary behavior based in primary care setting was feasible and promising [2]. Surveys in both Switzerland and the US have found that the

overwhelming majority of providers agree that preventive care should be a part of their daily practice, and that clinical nutrition is an important aspect of primary care [3,4].

Despite the importance of nutrition in primary care, training in nutrition is often insufficient in most medical schools [5–7]. Also, the barriers to clinical nutrition in primary care are substantial, such as time restraints and challenges in patient motivation. In 1993, a survey found that fewer than 40 percent of US physicians regularly practiced at least 17 out of 50 nutrition-related “core competencies” [8]. Between 2000 and 2005, the Healthy People and US Preventive Task Force of 2010 found in their midcourse review that the proportion of office visits including clinical nutrition declined from 42 to 40 percent [4]. In Switzerland, the second-most cited barrier to clinical nutrition in primary care was the lack of training (second only to time restraints) [3]. In the US, lack of training was the most cited barrier [9,10], and a study suggested that medical students' perception of the importance of clinical nutrition decreases during medical school [11]. Another study surveying US resident physicians found that those in the midst of

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their training felt that they were not receiving enough training in clinical nutrition [12].

Switzerland is a small European country with one of the best health systems worldwide [13]. The system is universal but administered on a local basis (cantons); Swiss citizens and established foreign residents must purchase individual health insurance coverage from local insurance companies. For persons covered by non-managed care insurance, services are provided of a fee-for-service basis by any primary care provider in the canton. Subjects covered by managed care insurance can opt for 1) health maintenance organizations; 2) networks of general practitioners with a contract with an insurer, and 3) a fee-for-service plan with a gate-keeping (i.e. phone consultant) system [14,15]. Primary care is provided by doctors trained in general internal medicine. Since 2011, there is only a single specialist title for general internal medicine, including both general internal medicine physicians and family physicians. Importantly, no information was collected regarding perspectives and confidence levels of physicians toward clinical nutrition.

Thus, the aim of this study was to determine the state of clinical nutrition education and application of clinical nutrition in primary practice, by evaluating the attitudes and self-perceived proficiency of medical residents in Lausanne, Switzerland. In this study, we considered clinical nutrition as any nutritional care provided by clinicians, and nutritional counseling as a one component of clinical nutrition [16].

## 2. Materials and methods

### 2.1. Subjects

All internal medicine residents active at two medical educational facilities, the Polyclinique médicale universitaire (PMU) and the Centre hospitalier universitaire vaudois (CHUV), were included. The list of residents was obtained from the human resources department from each facility. The PMU provides consultations to ambulatory patients in general and specialized internal medicine and employs a total staff of 527, of which 149 are physicians ([www.pmu-lausanne.ch](http://www.pmu-lausanne.ch)). Only residents working in the general internal medicine ambulatory care clinic of the PMU, destined for the large majority to become primary care physicians, were included. The CHUV is one of the five Swiss university hospitals, with a total staff of 10,000 ([www.chuv.ch](http://www.chuv.ch)); in 2014, 164 new physicians were trained at the CHUV.

### 2.2. Survey development

A questionnaire on attitudes and self-perceived proficiency about clinical nutrition was developed. The first section of the questionnaire collected demographic information, including information about time and place of medical school enrollment. No information regarding other training than medicine (i.e. biology, wellness, nutrition ...) was collected. Similarly, no information regarding the type of clinical nutrition training in the medical curriculum (i.e. compulsory or optional, number of hours or ECTS) was collected.

The second section used a questionnaire developed by Cornuz et al., which evaluated Swiss general and internal medicine physicians' attitudes towards interventions for clinical nutrition, physical activity, and tobacco use and specific barriers in preventive medicine [3].

The third section included several items of the questionnaire used by Vetter et al. [12]. This questionnaire combined the previously validated Nutrition in Patient care Survey (NIPS) [17] with another validated survey [18] to evaluate self-perceived proficiency

in clinical nutrition in order to cover ten attitudinal and self-perceived proficiency sub-scales. For our study, questions addressing nine sub-scales of Vetter et al.'s questionnaire were selectively chosen based on their relevance to the research question: 1) attitudes; 2) self-perceived proficiency; 3) knowledge and 4) previous training regarding nutrition. The result was a 63-question questionnaire and possible responses were on a five point Likert scale: strongly disagree, disagree, no opinion, agree, and strongly agree.

Additional questions assessed how frequently the participants assessed their patient's weight history, current weight and height in their clinical practice. Answers were categorized into "Never", "Seldom", "Frequently" and "Always".

The questionnaire was then translated into French and then reviewed by a sociologist at the Pedagogical Unit at the University of Lausanne for improvements to question and response wording. The complete version of the French questionnaire is available as a [Supplementary File](#).

The questionnaire was distributed, both online and in hardcopy, to internal medicine residents at both the PMU and the CHUV. The residents were given three months to complete and return the questionnaire, and reminders were issued by email and during medical staff meetings. The questionnaires were anonymous and collected in specific drop-off boxes available in the meeting rooms, so that no identification of the residents was possible.

### 2.3. Statistical analysis

Statistical analysis was conducted using Stata v.13.1 (Stata Corp, College Station, TX, USA). For analysis, answers were grouped into "agree" and "disagree/other". This was done in order to analyze the positive opinions of the participants relative to the others and to have adequate group sizes to perform statistical analyses. Results were expressed as number of responses (percentage) for categorical variables or as mean  $\pm$  standard deviation for continuous variables. Bivariate analyses comparing between genders, location of training (Switzerland vs. other countries) or previous training in clinical nutrition were performed using Fisher's exact test. Statistical significance was considered for a two-sided  $p$ -value  $<0.05$ .

### 2.4. Ethical statement

The Ethics Commission of Canton Vaud ([www.cer-vd.ch/](http://www.cer-vd.ch/)) was contacted and no ethics approval was considered necessary as the survey was anonymous and did not include any information regarding the health status of the participants (decision of 20.06.2014).

## 3. Results

### 3.1. Sample characteristics

Thirty-seven residents from CHUV and 51 residents from PMU were invited to fill the survey, 44 (50%) of whom responded. Their socio-demographic characteristics were the following: 25 (57%) women, mean age  $34 \pm 4$  years; 34 (77%) had received their training in Switzerland, and their average practice was  $7.5 \pm 2.8$  years. Only fourteen residents (33%) reported previous exposure or education in clinical nutrition in medical school (e.g. courses, conferences, or concepts integrated into other courses, etc.), and only 3 (7%) reported the existence of an elective course in clinical nutrition in their curriculum.

The characteristics of the residents according to gender are summarized in [Table 1](#).

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