



## Alimentary Tract

# Nutritional care at centres managing patients with inflammatory bowel disease: A nationwide survey in Italy



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## ABSTRACT

**Background:** Patients with inflammatory bowel disease (IBD) are at risk of malnutrition, but little is known about how IBD centres provide nutritional care.

**Aim:** To assess how nutritional care is delivered at IBD centres across Italy.

**Methods:** 120 IBD centres were invited to answer a web-based questionnaire.

**Results:** 76 questionnaires (63.3%) were completed. An IBD-dedicated nutritionist is present in 27 centres (35.5%). Fifty-two centres (68.4%) have an IBD multidisciplinary team, and 22 of these include a nutritionist. In the outpatient setting, malnutrition risk is evaluated at each visit in 23 centres (30.3%), while nutritional status is assessed at each visit in 21 centres (27.6%). These assessments are performed by a gastroenterologist in almost all centres (93.4% and 88.2%, respectively) and more rarely by a nutritionist (32.9% and 36.9%), dietician (7.9% and 2.6%) or nurse (3.9% and 9.2%). The decision to offer oral nutritional support is made by a gastroenterologist alone (35.5%), a nutritionist alone (23.7%), or a team of the two (38.2%).

**Conclusions:** Nutritional care for IBD patients appears quite far from satisfactory in the Italian reality. Educational and structural interventions are urgently needed to improve assessment and treatment of malnutrition in everyday clinical practice.

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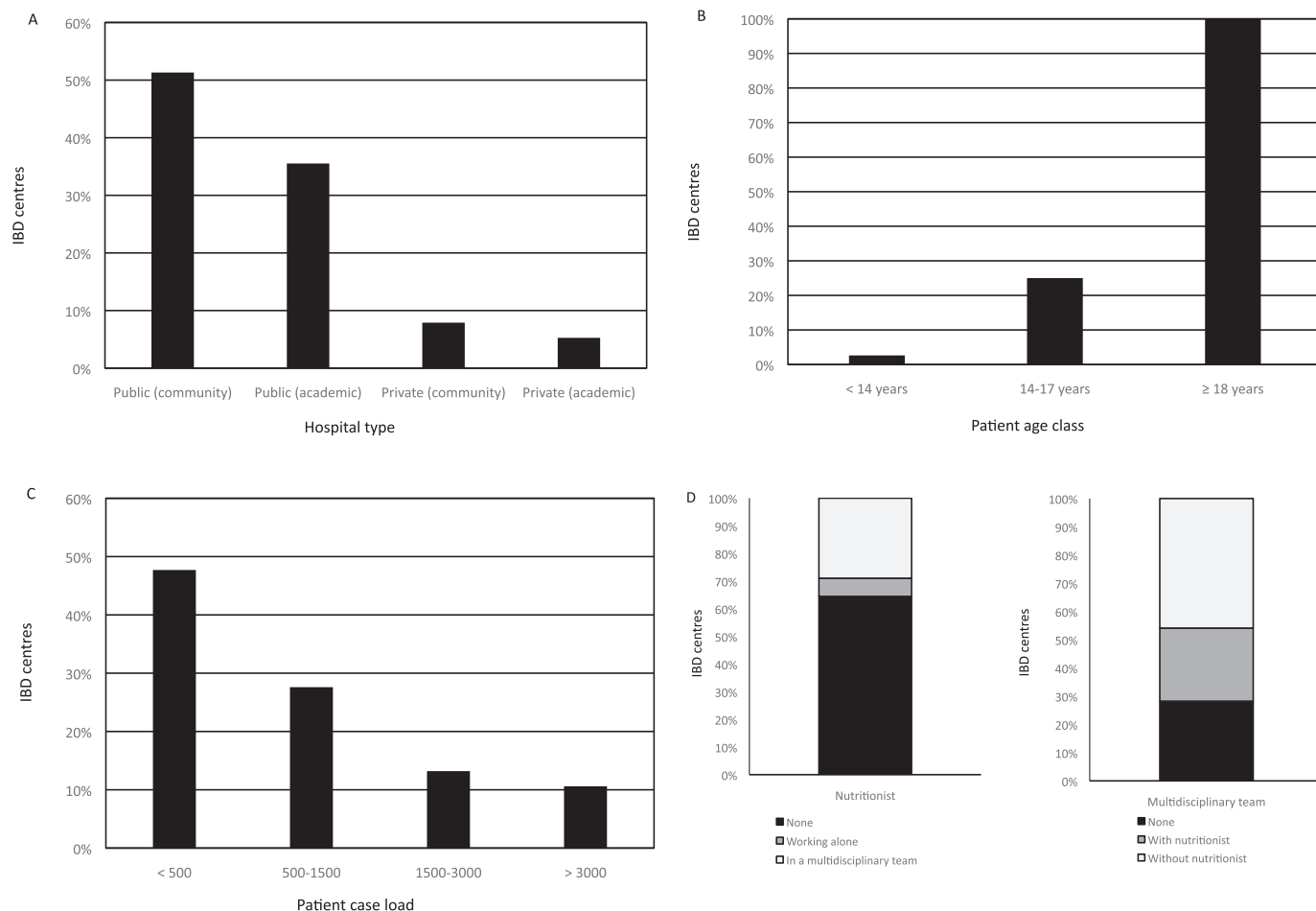
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## 1. Introduction

Malnutrition is prevalent in patients with inflammatory bowel disease (IBD) [1] and occurs in both patients with Crohn's disease



**Fig. 1.** Characteristics of 76 Italian IBD centres. (A) Type of hospital. (B) Age class of patients (multiple answers possible). (C) Patient case load. (D) Presence of a nutritionist (left) and multidisciplinary team (right)

and ulcerative colitis. Recent studies showed that the prevalence of malnutrition, however defined, is similar in the two conditions [2,3]. Malnutrition affects most patients with active disease and up to one third of those in remission [4,5]. Malnutrition can have adverse consequences throughout the spectrum of age, IBD stage and settings of care [6].

The term “nutritional care” indicates “the form of nutrition, nutrient delivery and the system of education that is required for meal service or to treat any nutrition-related condition in both preventive nutrition and clinical nutrition”, in both community and hospital settings [7]. Nutritional care, which should be an essential part of IBD treatment, includes screening for disease-related malnutrition, nutritional assessment, and intervention, monitoring and reassessment. Implementation of nutritional care in IBD patients is important, and the recommended process does not substantially differ from that followed in other chronic conditions [8]. Nonetheless, multiple nutritional screening and assessment tools have been developed for use in the general population and some have been specifically created for IBD. Although the best tool has not yet been identified, they appear to be concordant in the assessment of malnutrition in IBD patients [9] and therefore should be used to detect and treat malnutrition in this setting.

In Italy, postgraduate training in clinical nutrition is available for physicians, who are then referred to as nutritionists. Inclusion of nutritionists in multidisciplinary teams managing IBD patients is essential for good clinical outcomes [10].

Despite the strong evidence in support of nutritional care for IBD patients [11,12], there are few reports of its implementation in clinical practice. In addition, significant gaps between perceived

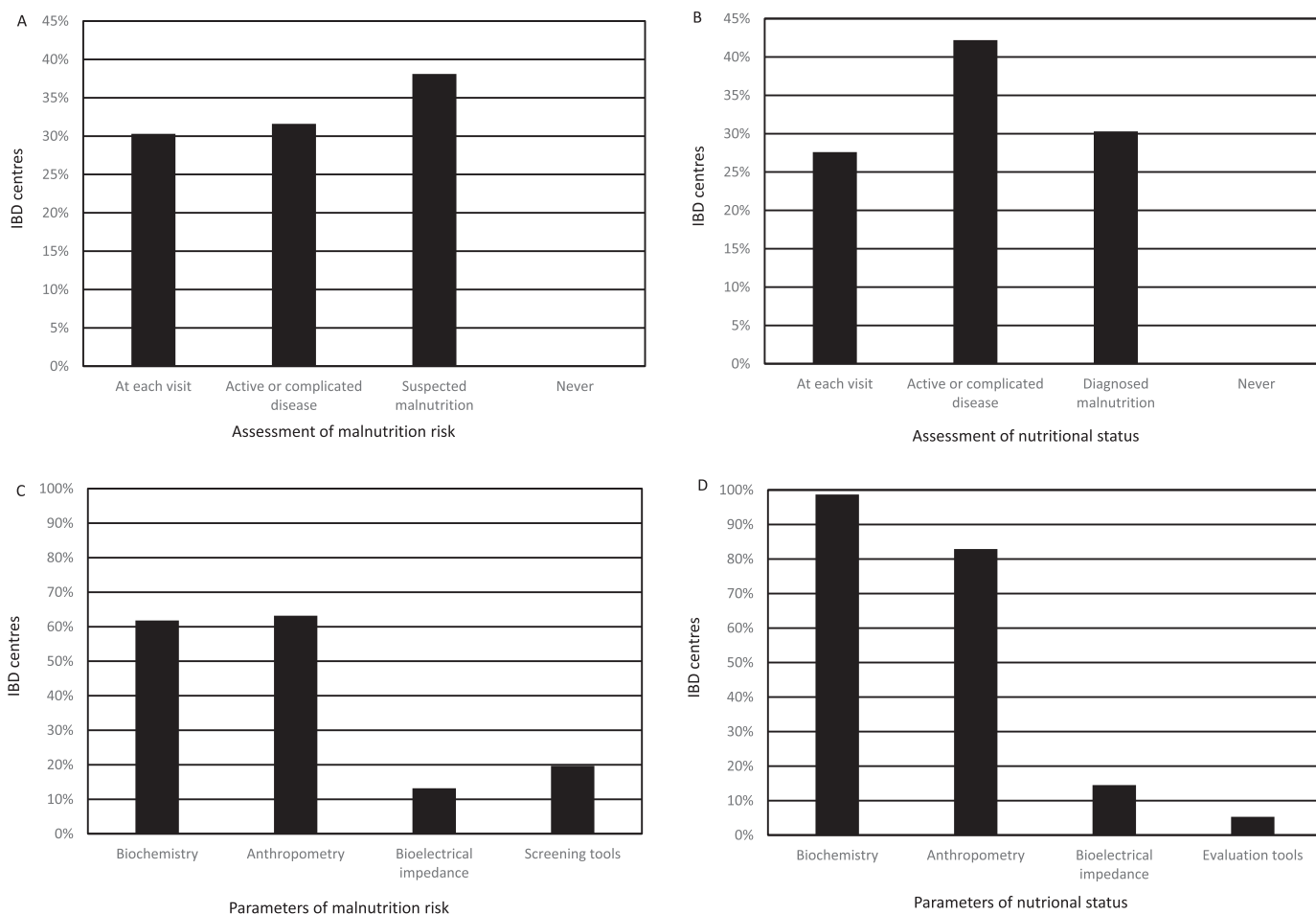
and actual knowledge of nutrition have been observed, in both clinicians and patients [13]. Therefore, the aim of this study was to assess the status of nutritional care in Italian centres managing IBD patients. To achieve this goal, a nationwide survey was conducted.

## 2. Materials and methods

A working group of experts from the Italian Society of Artificial Nutrition and Metabolism (SINPE) and from the Italian Group for the Study of Inflammatory Bowel Disease (IG-IBD) developed a questionnaire with 22 questions to address nutritional management of IBD patients in Italy (Supplementary material). The questionnaire included 19 questions (allowing single or multiple answers) investigating how nutritional care was organized and delivered at each IBD centre. Three further questions concerned the physicians’ perceived relevance of nutritional care; these questions were scored on a 100 mm visual analogue scale from 0 (lowest) to 100 mm (highest), and the answers are expressed as mean and SD.

A formal invitation to participate in the survey was sent by e-mail to the 120 IBD centres belonging to the IG-IBD network. The questionnaire was implemented in a dedicated website. One physician per centre filled in the questionnaire between June and December 2021.

GraphPad Instat software (GraphPad Software, San Diego, USA) was used to analyse the data by means of Fisher’s exact test and chi-square test for independence. Statistical tests were two-tailed, and statistical significance was set at  $p < 0.05$ .



**Fig. 2.** Nutritional assessment in the outpatient setting. (A, B) Frequency of assessing malnutrition risk (A) and nutritional status (B). (C, D) Parameters used to assess malnutrition risk (C) and nutritional status (D); multiple answers possible.

### 3. Results

Of the 120 IBD centres invited to participate, 76 (63.3%) filled out the questionnaire, with a homogeneous geographical distribution across Italy.

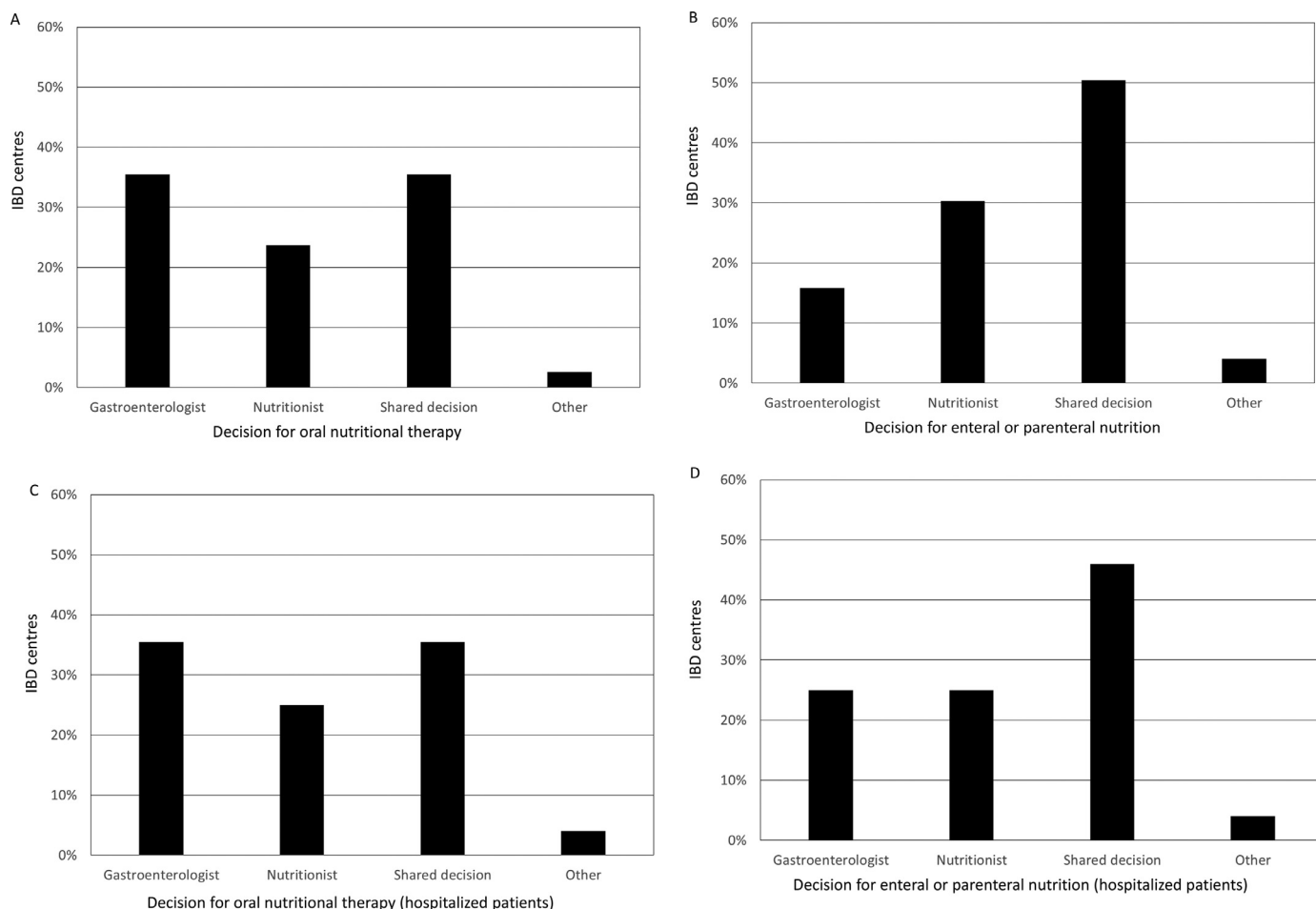
Regarding the hospital setting, 39 centres (51%) were located within public community (nonacademic) hospitals, 26 (35%) were at public academic hospitals, and 17 were at private hospitals (under an agreement with the National Health System) (Fig. 1A). A total of 31 centres (public and private) was located in an academic setting. All centres followed adult patients ( $\geq 18$  years old), while only a few cared for paediatric cases (Fig. 1B). In terms of patient case load, the modal value was  $< 500$  cases per centre, while 9% of respondents had more than 3000 patients at the time of the survey (Fig. 1C). The presence of a nutritionist dedicated to IBD patients was reported by 27 centres (35.5%). Moreover, 52 centres (68.4%) reported the presence of a multidisciplinary IBD team, and 22 of these reported the availability of a nutritionist (Fig. 1D). Notwithstanding the generally low availability of nutritionists, 51 centres (67.1%) responded “yes” when asked if it was easy to obtain a nutritional evaluation for IBD patients (the remaining 25 centres responded “no”).

In the outpatient setting, malnutrition risk was systematically assessed (i.e. at every visit) by 23 centres (30.3%), while the others assessed nutrition as needed (in case of active or complicated disease or in the suspicion of malnutrition); no centre responded “never” (Fig. 2A). Similarly, nutritional status was systematically assessed by 21 (27.6%) centres, and none responded “never”; the

others assessed nutrition as needed (in case of active or complicated disease or in the presence of malnutrition (Fig. 2B)). The gastroenterologist in almost all centres (93.4% and 88.2%) performed these assessments. More rarely, they were done by a nutritionist (32.9% and 36.9%), a dietician (7.9% and 2.6%), or a nurse (3.9% and 9.2%). Regarding the parameters used to assess malnutrition risk (Fig. 2C), more than half of centres reported using biochemistry and anthropometry tests. For nutritional status (Fig. 2D), most centres reported using biochemistry and anthropometry.

In the outpatient setting, the decision to offer oral nutritional support was made by a gastroenterologist alone in 27 centres (35.5%), by a nutritionist alone in 18 (23.7%), or by a nutritionist in conjunction with a gastroenterologist in 27 centres (35.5%) (Fig. 3A). On the contrary, the decision to start enteral or parenteral nutrition was made by a gastroenterologist alone in 12 centres (15.8%), by a nutritionist alone in 23 cases (30.3%), and by the two figures together in 38 centres (50.0%) (Fig. 3B).

When IBD patients are admitted to hospital, they undergo a malnutrition risk assessment at 38 centres (50.0%) and a nutritional status assessment at 40 centres (52.6%); the other centres do these assessments as needed (no one responded “never”). For hospitalized patients, the decision to offer oral nutritional support was made by a gastroenterologist alone in 27 centres (35.5%) and by a nutritionist alone in 19 (25.0%), while the decision was shared in 27 centres (35.5%) (Fig. 3C). On the contrary, the decision to start enteral or parenteral nutrition was made by a gastroenterologist alone in 19 centres (25.0%), by a nutritionist alone in 19 cases (25.0%), and by both in 35 centres (46.0%) (Fig. 3D).



**Fig. 3.** Clinical figure responsible for deciding to offer nutritional support. (A) Oral nutritional therapy for outpatients. (B) Enteral or parenteral nutrition for outpatients. (C) Oral nutritional therapy for hospitalized patients. (D) Enteral or parenteral nutrition for hospitalized patients.

Three questions of the survey inquired about respondents' perceptions of nutritional care. The relevance of nutritional care received a mean score of 86.5 (SD = 12.2) on a 100 mm visual analogue scale, indicating that most respondents perceived such as care important. Similarly, the need to provide adequate nutritional care had a mean score of 85.2 (SD = 11.9), and the need to include nutritional care in an "integrated care pathway" scored 87.3 (SD = 13.1).

Finally, the centres were stratified according to basic hospital characteristics to determine which features of nutritional care depend on the setting (Table 1). This analysis revealed that the presence of a nutritionist in an IBD centre was significantly associated with patient case load: a nutritionist was present in 61.1% of centres with >1500 patients but in only 27.6% of smaller centres ( $p=0.02$ ). The type of hospital did not associate with the presence or absence of a nutritionist. No association was found between the setting and the inclusion of a nutritionist in a multidisciplinary team or with the systematic assessment of malnutrition risk or nutritional status.

#### 4. Discussion

This nationwide survey found that a nutritionist is available in about one third of Italian IBD centres. Malnutrition risk is systematically assessed at every outpatient visit by 30.3% of centres, while half of centres do this systematically when patients are admitted to hospital. A nutritional assessment is systematically performed at every outpatient visit by 27.6% of centres, while 52.6% of cen-

tres do this assessment systematically when patients are admitted to hospital. A nutritional evaluation was considered easy to obtain by 67.1% of centres. There was a perceived strong need to provide nutritional care to IBD patients, yet this was not systematically offered at every centre.

Malnutrition is known to cause detrimental clinical outcomes in IBD patients by increasing the risk of micronutrient deficiencies [14], emergency hospital admissions [15], need for surgery [16], postoperative complications and infections [17], and longer hospital stays or death [1]. It also has a negative impact on a patient's quality of life [7,18]. Furthermore, malnutrition can be present also in patients with overweight and obesity. In patients with Crohn's disease, obesity associated with a worse disease course and a poor response to therapy [19,20].

Despite these negative associations between malnutrition and clinical outcomes, our survey found that around two thirds of IBD centres assess nutritional status only in cases of active or complicated disease or when malnutrition is suspected or evident. The tendency of IBD specialists to screen for and assess malnutrition only in selected cases may result in an underestimation – and thus undertreatment – of malnutrition. This tendency may be due to several reasons, including limited availability of resources (e.g. time and budget) and other key priorities such as medical therapy to induce and maintain disease remission. Regardless of the reasons, this pattern should be considered wrong and should be corrected by specific interventions, such as awareness campaigns to promote cultural changes. Indeed, according to the Global Leadership Initiative on Malnutrition, nutritional screening should be done in all

**Table 1**  
Features of nutritional care at IBD centres, according to hospital characteristics and patient case load.

Feature	n (%)	p
IBD-dedicated nutritionist		
Public hospital (n=66)	23 (34.8)	0.74
Private hospital (n=10)	4 (40.0)	
Academic hospital (n=31)	12 (38.7)	0.64
Nonacademic hospital (n=45)	15 (33.3)	
< 1500 IBD patients (n=58)	16 (27.6)	<0.02
> 1500 IBD patients (n=18)	11 (61.1)	
Nutritionist in a multidisciplinary team		
Public hospital (n=66)	19 (28.8)	1.00
Private hospital (n=10)	3 (33.3)	
Academic hospital (n=31)	8 (25.8)	0.80
Nonacademic hospital (n=45)	14 (31.1)	
< 1500 IBD patients (n=58)	15 (25.9)	0.38
> 1500 IBD patients (n=18)	7 (38.9)	
Systematic assessment of malnutrition risk <sup>a</sup>		
Public hospital (n=66)	23 (34.8)	0.48
Private hospital (n=10)	5 (50.0)	
Academic hospital (n=31)	13 (41.9)	0.48
Nonacademic hospital (n=45)	15 (33.3)	
< 1500 IBD patients (n=58)	19 (32.8)	0.78
> 1500 IBD patients (n=18)	9 (50.0)	
Systematic assessment of nutritional status <sup>a</sup>		
Public hospital (n=66)	22 (33.3)	0.16
Private hospital (n=10)	6 (60.0)	
Academic hospital (n=31)	13 (42.9)	0.48
Nonacademic hospital (n=45)	15 (33.3)	
< 1500 IBD patients (n=58)	20 (34.5)	0.58
> 1500 IBD patients (n=18)	8 (44.4)	

<sup>a</sup> Assessment at every visit.

patients and then followed, if needed, by the assessment of phenotypic and etiologic parameters of malnutrition to formulate a diagnosis [21]. When this approach was applied in IBD patients, a strong association of malnutrition with poor quality of life was found [22] as was a positive correlation between the number of phenotypic criteria of malnutrition and the severity of IBD [23]. In the surgical setting, assessment of nutritional status is a fundamental step in the optimization strategy; indeed, correction of malnutrition reduces the rates of post-operative complications and stoma creation and improves quality of life [24].

According to this survey, the most used tools to screen and assess patients were a panel of clinical chemistry tests and anthropometry. On the contrary, tools for malnutrition risk screening and assessment of nutritional status were used only by 20% and 10% of centres, respectively. However, it is known that clinical chemistry tests (e.g. total serum protein, serum albumin and serum transferrin) alone are not reliable measures of nutritional status, as their levels are affected by several factors, including inflammation [25]. At the same time, although the best nutritional screening tool for IBD has not yet been identified [9], most of them share some common domains that include anthropometric variables (body mass index, weight and unintentional weight loss), nutritional intake and disease severity. Once diagnosed, malnutrition should be promptly treated. Indeed, when the nutritional care process is established, significant benefits on clinical outcomes can be expected [26].

This survey found that decisions to offer oral nutritional supplements were made rather equally by a gastroenterologist, a nutritionist, or a team of the two, in both outpatient and hospital settings. These results are in line with a previous study that found that gastroenterologists were actively involved in providing dietary advice to IBD patients [27]. This survey also found that nutritionists play a prominent role in the decision to start artificial nutrition, suggesting that the nutrition specialist is called into action in complicated cases and in cases of overt malnutrition. Regardless

of the local organizational form of providing nutritional care and support, patients that require nutrition therapy should be managed by a multidisciplinary team of physicians with expertise in clinical nutrition, dietitians, nurses and pharmacists.

Few data exist about this topic in IBD. We believe that the results of this survey represent an important starting point for increasing awareness of the issue of malnutrition, to improve the overall management, including clinical outcomes, of IBD patients. The strengths of this study are its nationwide coverage, thanks to the participation of members of a national association focused on IBD and to the inclusion of both academic and nonacademic centres. A limitation is the possibility of response bias, as only interested clinicians may have responded to the questionnaire.

In conclusion, this survey reveals discrepancies between the perceived importance of adequate nutritional care for IBD patients and its actual delivery in everyday clinical practice. These findings call for action in improving the quality of care in this area.

### Conflict of interest

All authors state no conflict of interest.

### Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.dld.2023.05.029.

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