

Feasibility of a low FODMAPs diet without initial dietician intervention in the management of patients with irritable bowel syndrome: a prospective study

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Abstract

Background and aims: Efficiency of a low FODMAPs diet (LFD) to relieve symptoms in patients with irritable bowel syndrome (IBS) has been proved in several studies. Our study aimed to evaluate the management of IBS-patients when explanations about LFD are given by the physician without dietician intervention.

Patients and methods: Patients with IBS were evaluated prospectively after explanations about the LFD were given with the help of a leaflet. A first questionnaire evaluating trigger foods and diet acceptability was submitted to the patient after the consultation. Six weeks later, a second questionnaire evaluated patient's understanding and adherence to the diet, the evolution of symptoms, and the need for a specific dietetic support.

Results: Thirty-five patients were included (69% female; mean age 45±15). Seventy-four percent of the patients thought that their symptoms were related to food ingestion, and 97% were ready to go on a diet to improve their symptoms. During the second visit, 91% of the patients reported understanding correctly the explanations, 52% followed LFD regularly, 28% sometimes and 20% did not follow LFD at all or barely. Multiple non-adherence factors were reported. All symptoms, except constipation, decreased significantly six weeks after starting LFD. Finally, 77% of the patients reported satisfaction with care and 69% were willing to be supported by a dietician.

Conclusions: Most IBS patients understood explanations given by GI physicians, but low compliance to the diet and a wish for dietician support was highlighted, suggesting that a dietician intervention should be scheduled when LFD is implemented. (*Acta gastroenterol. belg.*, 2021, 84, 593-600).

Key words: adherence, understanding, dietetic support, symptoms.

Introduction

Irritable Bowel Syndrome (IBS) is a functional bowel disorder characterized by recurrent abdominal pain associated with defecation or a change in bowel habits (constipation or diarrhoea), and abdominal bloating (1). IBS affects 10 to 20% of the population worldwide, and negatively impacts the patients' quality of life (2). The pathophysiology of IBS is multifactorial and includes altered GI motility, visceral hyperalgesia, increased intestinal permeability, immune activation, altered microbiota, and disturbances in brain-gut function.

Food intake has been associated with the development of symptoms in IBS patients (3). Among those foods, poorly absorbable carbohydrates and polyols, described as FODMAPs (Fermentable Oligo-, Di-, Mono- saccharides And Polyols) may be involved in the development of symptoms in patients suffering from IBS (4). Indeed, poorly absorbed FODMAPs exert an osmotic effect and induce gas production through fermentation by colonic

bacteria, explaining diarrhoea, abdominal cramping, and bloating and thus poor tolerance in patients with IBS (5,6). Following this theory, a low-FODMAP diet (LFD) has been developed in Australia (7). The diet requires avoiding foods containing high amounts of FODMAPs. Improvement of IBS symptoms has been observed following low FODMAPs diet in several studies, including placebo-controlled studies (7-14). Nevertheless, despite being effective, low FODMAP diet may sometime be related to low adherence due to practical reasons or absence of symptom improvement (14).

Low-FODMAPs diet is usually introduced after explanations being given by a dietician. FODMAPs are then progressively reintroduced by the dietician after 6 to 8 weeks (15,16). Practically, it is often difficult for the patient from a logistic point of view to obtain a combined consult with a dietician and a GI physician. Moreover, most patients will address the GI physician as a first approach to improve their GI symptoms. Therefore, a leaflet was prepared by the dietician department, providing short explanations on the principle of low-FODMAP diet and specifying a list of high-FODMAP and low-FODMAP containing foods and beverages. Short oral explanations were provided to IBS patients by the GI physician during the consult, without the presence of a dietician.

The aim of the study was to evaluate the adequacy of care when a LFD is proposed and explained to IBS patients by the GI physician. The primary objective was to evaluate patients' adherence to the diet. The secondary objectives were to evaluate the accuracy of the explanations, the non-adherence factors, the effects of the diet on symptoms, and the patients' needs for a specific dietician support.

Materials and methods

Patient population

Patients were recruited at the gastroenterology outpatient clinic during two 2-month periods: December 2016-January 2017, and August-September 2017.

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Submission date : 21/12/2020

Acceptance date : 14/04/2021

Patients aged from 18 to 65 years old diagnosed with IBS according to Rome IV criteria who received explanations about LFD by their GI physician (HL, AVG, MA) for the first time were included after informed consent was obtained. Patients who already consulted a dietitian, who had a concomitant GI disease (gluten intolerance, Crohn's disease, bile acid malabsorption or gastroparesis), or previous GI surgery were excluded.

Study protocol

A leaflet providing explanations on the LFD was prepared by a dietician (AS). All 3 physicians participating in the study were familiar with the LFD. The folder contains two lists: one with the high FODMAPs food that need to be avoided, and one with the low FODMAPs food that should be preferred by the patient. The leaflet provides also a recipe and general dietary and lifestyles advices based on the National Institute for health and Clinical Excellence (NICE) Guidelines (1). Time allocated for the GI physician consultation was 20 to 30 minutes, among which 5-10 minutes were dedicated for LFD explanations. After the consultation, a first questionnaire was submitted to patients, assessing their prejudice about food and diet before starting LFD. Six weeks later, they were asked about their experience: understanding of given instructions, easiness of following LFD, evolution of IBS symptoms and satisfaction of care, with a second questionnaire.

The study was approved by the hospital ethics committee in November 2016 (references Erasme: P2016/430) (references CCB: B406201629779).

Assessments

The first questionnaire aimed to evaluate symptoms' intensity (assessed with a Likert scale) before starting LFD, willingness to follow diet restrictions, the identification of trigger foods and understanding of explanations given by the GI physician. Lifestyle and diet habits of the participants (numbers of meals per day, quantity and type of beverages, physical activity level, alcohol consumption, etc.) were also evaluated in the questionnaire.

The second questionnaire was provided at the follow-up visit scheduled 6 weeks later, and the patient completed the questionnaire after the consultation. Patients not coming back to the consultation in the time frame defined by the study were contacted by phone by one of the investigators (PVO) to answer the questions. The questionnaire evaluated patient's satisfaction related to the diet (Likert-scale from 0 to 10), patients' understanding, adherence to diet and non-adherence factors with the use of multiple-choice or closed questions (YES/NO), their willingness to be supported by a dietician, and evolution of IBS symptoms. For satisfaction evaluation, a patient with a score above or equal to 5 on the ten-point scale was defined "satisfied". A score of 1 to 4 was defined as

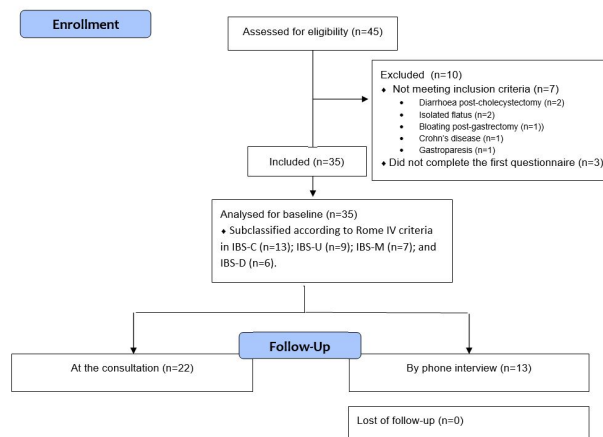


Figure 1. — Study flow diagram

“poorly satisfied” and a score of 0 “not satisfied at all”. Questionnaires are available in appendix.

Statistical analysis

Descriptive analysis was performed using mean and standard variation (SD) for numeric parameters and percentages for qualitative parameters. Statistical analyses were performed using paired Student-t-test. The statistically significant threshold of p-value is less than 0.05. Odds Ratios (OR) were obtained with SPSS software using univariate association. Chi-squared Kruskal-Wallis tests, T Wilcoxon paired tests and exact Fisher were performed with STATA/IC 16.

Results

Population

Thirty-five patients with IBS were recruited for this study (mean age 45 ± 14.5 ; 24 females). (Figure 1) IBS was subclassified according to Rome IV criteria in IBS-C (n=13); IBS-U (n=9); IBS-M (n=7); and IBS-D (n=6).

First evaluation

Prejudice and motivation

In the first part of the questionnaire, questions aimed to evaluate patient's prejudices about the diet and food in general. Almost three patients out of four thought that food could be involved in their symptoms occurrence (Table 1). Patients who thought that food could be involved were able to identify one or more trigger-food in a list. The most reported food and beverages were dairy products (58%), cabbage (42%) coffee (42%), pasta, bread and legumes (35%) (Table 2).

All patients but one were willing to go on a diet in order to reduce their symptoms. Ninety-one percent of patients also thought they could deal on their own with the leaflet and explanations given by the GI physician (Table 1).

Table 1. — Prejudice, motivation and primary understanding related to the diet (n=35)

	Yes	No	I don't know
1. Do you think that some food triggers your symptoms?	74% (26)	6% (2)	20% (7)
2. Would you be willing to go on a diet and watch out what you eat in order to reduce your symptoms?	97% (34)	0% (0)	3% (1)
3. Do the booklet and the explanations provided to you seem clear and understandable?	91% (32)	3% (1)	6% (2)

Table 2. — Trigger food for people who thought that their symptoms were in relation with eating (n=26). Many answers admitted.

Cream, ice-cream, milk	58%
Cabbage	42%
Coffee	42%
Pizza	38%
Oignons, leek, garlic	35%
Pasta, bread (wheat)	35%
Legumes (chickpeas, lentils)	35%
Alcohol	31%
Other*	31%
Raw vegetables	27%
Chewing-gum	23%
Peppers	23%
Apricot, peach, cherry	19%
Pistachio, cashew	15%
Apple, pears	15%
Mushroom	8%
Artichoke	8%
Honey	8%

*Other: chocolate, oil, orange, orange juice, vinegar, sweets, cheese, peeled tomatoes, fizzy drinks.

Second evaluation

Thirteen patients did not come back at the consultation in the time frame of the study and were contacted by phone to answer the questions (Figure 1)

Satisfaction

In the second questionnaire, patient's satisfaction level related to the diet was assessed with a Likert-scale from 0 to 10. Seventy-seven per cent were satisfied, 14% were poorly satisfied and 9% were not satisfied at all. Eighty percent of the patients from whole sample expressed also their wishes about their care: 40% of them would have liked to receive more recipes, 23% would have preferred to consult a dietician before starting the diet, 17% would have appreciated receiving more information on the diet, and 9% would have opted for medical treatment rather than a diet.

Understanding

Globally, 71% of the patients found that the leaflet was clear and understandable. An additional 20% of

Table 3. — IBS symptom evaluation before starting LFD and 6 weeks later, using Likert Scales from 0 to 10 (0 = no symptom; 10 = unbearable).

Symptoms:	Before	After 6 weeks	p-value
A) Whole group			
Bloating	7 ±2,4	5 ±2,6	<0,001*
Abdominal pain	6 ±2,6	4 ±2,8	<0,001*
Abdominal rumbling	5 ±2,9	3 ± 3,0	0,013*
Flatulences	6 ±2,6	5 ±2,7	0,006*
Diarrhoea	4 ±3,3	2 ±2,2	0,002*
Constipation	4 ±3,2	4 ±3,4	0,347
Fatigue	6 ±3,0	5 ±3,0	0,050*
B) Adherence subgroups			
"Adherent" subgroup (n=18)			
Bloating	7 [5-8]	5 [3-7]	0,013*
Abdominal pain	7 [5-8]	4 [2-7]	0,025*
Abdominal rumbling	4 [1-6]	3 [1-6]	0,405
Flatulences	7 [4-8]	4 [2-7]	0,013*
Diarrhoea	5 [2-6]	2 [0-4]	0,027*
Constipation	5 [0-6]	5 [0-7]	0,721
Fatigue	8 [7-8]	5 [3-8]	0,054
"Partially-adherent" subgroup (n=10)			
Bloating	7 [5-8]	5 [5-5]	0,008*
Abdominal pain	7 [4-8]	3,5 [3-5]	0,013*
Abdominal rumbling	5,5 [3-8]	3,5 [1-6]	0,018*
Flatulences	7 [6-8]	4 [3-5]	0,012*
Diarrhoea	2,5 [0-4]	0,5 [0-3]	0,354
Constipation	3,5 [2-7]	1,5 [0-6]	0,056
Fatigue	7,5 [3-8]	5,5 [3-8]	0,351
"Non-adherent" subgroup (n=7)			
Bloating	8 [5-8]	6 [2-9]	0,262
Abdominal pain	8 [7-10]	3 [1-8]	0,061
Abdominal rumbling	4 [2-8]	1 [0-5]	0,149
Flatulences	5 [2-8]	7 [3-10]	0,864
Diarrhoea	1 [0-8]	0 [0-3]	0,050*
Constipation	7 [0-10]	6 [0-9]	0,083
Fatigue	6 [4-9]	7 [4-8]	0,730

On the whole sample (n=35) (A), data are expressed as means ± SD; p-values are obtained with Student t test. By subgroup of adherence (B), data are expressed as median [IQR]; p-values are obtained with T Wilcoxon paired test. * indicates statistically significant differences.

the patients found that the leaflet was clear and understandable but performed additional searches on internet. Further remarks were formulated by patients, including "It seems to be complicated", "There is a lack of usual food in the list, and doubts about what is allowed or not", "What does 'avoid' exactly mean?", "The diet is difficult to follow by our own, there should be a coaching", "It would be interesting to get a food plan, a shopping list, recipes"

Symptom evolution

Patients were asked to evaluate the severity of their symptoms with Likert scale ranging from 0 to 10 (0 = no symptom; 10 = unbearable) before starting LFD and 6 weeks later. Symptom severity decreased significantly after 6 weeks (p -value < 0.05), especially for bloating and cramps (p -value < 0.001), whereas constipation did not improve (Table 3).

A statistically significant response to LFD was observed in the groups of patients who were adherent and partially adherent but not in the non-adherent patients, for the following symptoms: bloating, abdominal pain and rumbling, flatulence and diarrhea (adherent patients), bloating, abdominal pain, flatulence and diarrhea (partially adherent patients). There was no statistically significant difference between the 3 adherence groups using Chi² Kruskal-Wallis test.

Finally, patients were asked to evaluate globally their IBS symptom evolution with a five points scale (0 = no improvement at all; 5 = resolution of all symptoms). More than half of them (57%) had a score above “2” while seventeen percent of the patients did not report any improvement. (Figure 2). Regarding adherence sub-groups, no significant statistical difference observed for global symptoms evolution between groups (p -value = 0,55) (χ^2 Kruskal-Wallis).

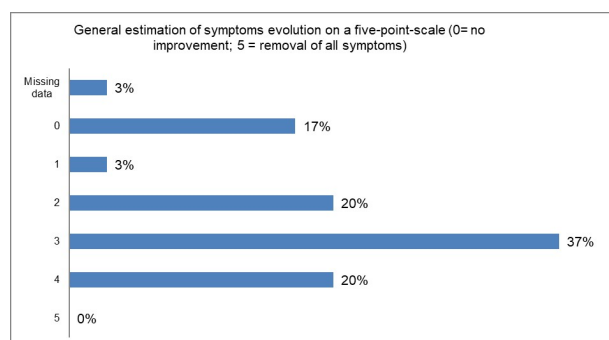


Figure 2. — (n=35) Patient interpretation of symptom evolution (0 = no improvement; 5 = complete resolution) 6 weeks after explanations on LFD were given by a GI physician.

Adherence

Fifty two percent of patients reported they followed the LFD, 28% percent followed the diet « sometimes » and 20% “never” or “rarely”. There is no evidence to affirm that the adherence between sub-groups of IBS is different (Fisher ‘exact=0.12). In order to highlight non-adherence factors, we tried to understand why some patients couldn’t implement the diet. Patients who answered “sometimes”, “rarely” or “never” for the previous question were asked to tell the reason(s) why they didn’t adhere to the diet. Seemingly, reasons advocated were that the diet was complicated to follow, and/or they had not enough time to prepare the meals,

Table 4. — Non-adherence factors identified with multiple choice questionnaire, several answers admitted (n=28).

It seems to be complicated for me to follow the diet	9	53%
I have no time	5	29%
Other reasons*	5	29%
I forgot, I didn’t think about the diet anymore	3	18%
I don’t like allowed food so much	2	12%
It’s too expensive	2	12%
It’s difficult for me to find the allowed food	2	12%
I don’t know how to cook the allowed food	2	12%
I don’t do the cooking by myself, I can’t choose what I want to eat	2	12%
I didn’t understand the explanations	1	6%

*Other reasons raised: “I like some food that I’m not allowed to eat”, “I feel sick with this diet”, “I would prefer to reduce the consumption of only apples and chocolate at first”, “I was on holidays”.

Table 5. — Social brakes for diet’s implementation: reasons why the diet is a problem in the social life - Several answers admitted (n=21)

	Frequency % (n)
I don’t want to disturb	33% (7)
There is a lack of low-FODMAPs food when I go outside	24% (5)
I prefer eating « like everybody », even if I get symptoms after	19% (4)
Unknown	19% (4)
It is difficult to force my friends to eat that too	14% (3)
The preparation of meals is more complicate	10% (2)
I feel frustrated	5% (1)
I don’t dare to talk about it ; or I don’t want to talk about it	5% (1)

and/or dislike for the proposed alternative food, and/or that the oral explanation provided was not retained (Table 4).

We noticed that there was a trend to a better adherence to the diet (OR[IC_{95%}] > 0) for female patients, those who live alone, those who have a higher graduation level, and those who were able to detect trigger food at the beginning. However, p -value was statistically non-significant (p -value > 0.05), except the gender “female” by multivariate analysis (p -value = 0.04).

As satisfaction concerns, 83% were satisfied in the adherent group (median = 7.5 [IQR 5-9], 90% within the partially adherent group (median = 5 [IQR 5-6]), and 43% in the non-adherent group (median = 4 [IQR 0-6]). The distribution of the degree of satisfaction assessed on a scale of 0 to 10 is statistically significantly different between these 3 adherence groups (p -value=0.05) (χ^2 Kruskal-Wallis).

Social activities are also hurdles for the implementation of the diet. For a third of the patients (29%), following the diet caused social difficulties every time or “often”; for another third (31%) it was sometimes difficult. Thirty-three per cent of the patients said that they didn’t want to disturb other people. Fourteen per cent reported that there was a lack of adequate options when they ate out. One

out of five patients preferred to eat like everybody even if they would experience symptoms afterwards. Finally, patients also reported that it was difficult to force family members or friends to consume the same LFD, that the preparation of meals was more complicated, while other reported that they felt frustrated or that they didn't dare/didn't want to talk about it (Table 5).

Need of a specific diet support

Sixty percent of the patients would have liked to see a dietician before starting LFD. Furthermore, almost sixty percent of the patients would like to meet a dietician after 6 weeks with the diet. However, among the 40% of patients who said they were able to start the diet by themselves, a fifth of them (21%) changed their mind and would like to see a dietician for their follow-up. Finally, 69% expressed their wish to see a dietician at least once.

By sub-groups of adherence, 88 % of adherent, 60% of partially adherent and 29% of non-adherent patients would have liked to benefit from a dietary management. Variables are not independent (p -value=0.01) (exact Fisher test).

Discussion

We aimed to evaluate the management of IBS patients who started a LFD with brief explanations given by the GI physician without the help of a dietician. For this purpose, we evaluated the understanding of the booklet and the given explanations, the evolution of IBS symptoms, the adherence to the diet and the patient wish/need for a specific dietetic support on a sample of 35 IBS patients seen at a GI tertiary care hospital.

At first, 74% of the patients thought that food could be involved in the development of their symptoms and they were able to identify one or more trigger-food. Almost all of the patients were willing to go on a diet to try to improve their symptoms.

Patients found the leaflet and explanations given by their physician clear and readable. Indeed, only few patients reported that explanations were too difficult to understand as a non-adherence factor. However, the diet was reported to be complicated to implement and to follow. It was therefore one of the non-adherence factors which was the most frequently reported. Patients also added written remarks which suggested that the leaflet should be completed with a more detailed list, specific lactose-free products, or also more recipes. Indeed, it is now established that a food list alone is not sufficient to implement LFD (15). As mentioned in another study, information given by the physician is difficult to apply in "real life" (18). Those observations showed that the theoretical part of the diet is mostly well accepted by patients in general, but they are not necessary able to put it in practice on their own.

Adherence to the diet should be improved because only half of the patients asserted that they followed LFD.

Poor adherence has also been reported by Frieling et al. in their study (19). In our study, patients had difficulties related to the complexity of the diet, lack of time, forgetfulness, disgust for proposed food, or issues to find and cook some foods. For more than half of the patients, it was also difficult to accommodate a LFD with social activities like eating out or having a dinner with friends. Therefore, limitation of social activities is identified as a non-adherence factor, too. Some of those brakes could probably be solved by the help of a dietician. Indeed, dietitian-led implementation of the low FODMAP diet is recognized as an effective strategy (20). NICE and British Dietician Association (BDA) guidelines support that LFD is effective when delivered by a dietitian with expertise in FODMAP education (17,21). The role of the dietician is to translate theoretical recommendations into practical tips adapted for each patient. Consultation with an expert-dietician should also help the patient to talk about difficult situations. Nevertheless, a less-restrictive approach, as the "bottom-up" strategy, which consists in a more liberalized diet that restricts few specific food or FODMAP subgroups one by one, could also be considered for some selected patients. This brand-new approach is however not yet validated and would require the help of an expert dietician (5). Subjecting patients with a motivational interview during the consultation to detect which of these patients are the most likely to adhere and respond to the diet should also be evaluated.

Nevertheless, it has also been shown that a better compliance to the diet could be linked to better understanding, education level, and the use of cooking-books by patients (22). Some characteristics of the profile of our patients were associated with a better adherence rate. Although the odds ratio was not statistically significant (except for female gender) because of the small number of patients in our study, we could suspect some predictive factors for adherence to the LFD, namely: female gender, those who live alone, those who have a higher graduation level, and those who were able to detect trigger food.

Management of patients with a LFD has been shown to be beneficial to relieve IBS symptoms (14). In our study, no patient showed a complete resolution of symptoms, but all symptoms were significantly improved except constipation. Indeed, LFD has been reported to expose patients at risk of decreased fiber intake (23). Prevention of constipation could be improved by general advice given by the physician or the dietician, promoting hydration, physical activities and some specific dietary fibers (such as oat, guar), or prescription of over the counter laxatives if needed. In the same line, a LFD may be more useful in IBS patients suffering from diarrhea than in patients suffering from constipation (24). Dietary management, as well as LFD, remain the first line treatment in the absence of specific cause of diarrhea (25)

Seventy percent of the patients expressed the wish to meet a dietician during their care and asked for more recipes in the leaflet they received. This, along with

the non-adherence factors exposed before, call for a specific dietetic support to improve the management of IBS patients. Moreover, we should be careful when an exclusion diet is implemented. Several studies showed that patients who followed a LFD may be at risk of lower calcium, zinc, folate, and vitamin B and D intakes (23,26). This diet is also a hurdle for social life as shown before and could thereby induce eating disorders (23). Finally, long-term food restriction can cause modifications of the microbiota whose effects are not yet well-known (14,27,28,29). It is therefore necessary to confront patients to the reintroducing phase in order to broaden the diet and limit food restrictions. The challenge of the dietetic support is being able to find a balance between symptoms management and a diet as diversified as possible to decrease these risks (15,30,31).

The strengths of this study include its prospective and longitudinal design. Furthermore, we underline that collected data are based on patient self-report thanks to the use of auto-administrated questionnaires. The lack of use of validated questionnaire to assess symptoms, adherence and understanding, and the absence of food-test or food-history to assess patient observance to the diet are limitations of this study. Finally, daily records of food intake as well as symptoms were not used in this study.

In conclusion, short LFD explanations given by the GI physician were well understood but barely half of the patients went on the diet. The lack of compliance related to the LFD would mainly come from difficulties to put dietary recommendations in practice. Social activities, lack of time, forgetfulness were highlighted as non-adherence factors. We also underline that more than three patients out of four would like to see a dietician during their follow-up, which could help increase the adherence rate to LFD. This open-label study suggests that a dietician support, combined with the GI explanations, should be recommended when LFD is implemented. A randomized controlled trial comparing medical practice when LFD is offered by a GI physician alone or with the support of a dietician should address the need for dietician support.

Conflict of interest

The authors declare that they have no conflict of interest.

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APPENDIX

Date : ... / ... / ...

PART I (Initial Visit)

Education / level of study:
 Secondary School
 Bachelor
 Master
 Other :

- 1.1. Do you think food may be responsible for your symptoms?
 YES – NO – I don't know
- 1.2. If yes, which foods, from the following list, do you think are responsible for these symptoms: (several answers allowed)
 Onions, leeks, garlic
 Mushrooms
 Pasta, bread (wheat)
 Pizza
 Artichoke
 Pistachios, cashew nuts
 Apricots, peach, cherries
 Chewing-gum
 Legumes (chickpeas, lentils)
 Fresh cream, ice cream, milk
 Honey
 Apples, pear
 Raw vegetables
 Pepper
 Cabbage (cauliflower, broccoli, Chinese cabbage, ...)
 Coffee
 Alcoholic drinks
 Other:

- 1.3. Would you be prepared to follow a diet, to pay attention to the foods you eat in order to try to reduce your symptoms? YES – NO
- 1.4. Do you think you can find your way around with the sheets and the explanations that were provided to you, do the documents given seem clear and understandable to you? YES – NO
 Remark :

- 1.5. For each of the symptoms mentioned below, estimate the intensity during the last week preceding the consultation by circling the corresponding number on a scale from 0 to 10 (0 = No pain, symptom absent - 10 = unbearable)
- Bloating
 0 1 2 3 4 5 6 7 8 9 10
 - Cramps, belly pain
 0 1 2 3 4 5 6 7 8 9 10
 - Bowel sounds
 0 1 2 3 4 5 6 7 8 9 10
 - Flatulence, gas
 0 1 2 3 4 5 6 7 8 9 10
 - Diarrhea
 0 1 2 3 4 5 6 7 8 9 10
 - Constipation
 0 1 2 3 4 5 6 7 8 9 10
 - Nausea
 0 1 2 3 4 5 6 7 8 9 10

- Fatigue
 0 1 2 3 4 5 6 7 8 9 10

- 1.6. a) Do you do a regular physical activity?
 No <1h/week 1-2h/week 3-4h/week >5h/week
 b) do you smoke ? YES – NO
 If "yes", how many cigarettes do you smoke in a day?
cigarettes/day
 c) Do you drink alcoholic beverages (beers, wine, aperitif, cocktail, alcohol,...) ?
 No, never
 Rarely (less than once a month)
 Occasionally (less than once a week)
 Regularly (more than once a week): glass /week
 Daily : glass /day
 d) What drink (s) do you drink and in what quantities during a day?
 (Check the answer(s) and complete the dotted lines of the checked answer(s))
 Still water - glass/d
 Sparkling water - glass/d
 Tea - cup/d
 Coffee - cup/d
 Soda - glass/d
 Fruit juice - glass/d
 Milk - glass/d
 e) Usually you eat during a day (Check one answer per box)

1 Meal	At regular time	No snack	A meal lasts :
2 Meals	Anytime	1 snack	5-10 min
3 Meals		2 snacks	+/- 15- 20 min
		3 snacks	> 30 min
		1 nibble all the time	

- For each meal consumed, specify the place where it is taken :
- Meal nr1 :
 At home, at the table
 At home, in front of the television, computer or tablet
 At work (cafeteria, canteen, etc.)
 At the restaurant
 In the car
 Walking
 In public transport
 Other :
 - Meal nr2 :
 At home, at the table
 At home, in front of the television, computer or tablet
 At work (cafeteria, canteen, etc.)
 At the restaurant
 In the car
 Walking
 In public transport
 Other :
 - Meal nr3 :
 At home, at the table
 At home, in front of the television, computer or tablet
 At work (cafeteria, canteen, etc.)
 At the restaurant
 In the car
 Walking
 In public transport
 Other :
- f) At home you live
- Alone

As a couple
 As a family (Please specify the number of children:)
 In shared accommodation (Please specify the number of roommates:)
 In an institution (rest and care home, specialized center, boarding school, etc.)
 g) Usually, who takes care of the meals?
 I cook myself
 A member of my family or a friend is cooking
 I buy ready meals
 I order dishes at the restaurant or at the caterer
 h) Do the shopping yourself? YES – NO
 If “NO”, why?
 I don’t have time
 I don’t like to do this, or I’m not interested
 Someone around me is taking care of it
 Other :

Nr.....

PART II. – Follow-up visit

- 2.1. Globally, were you satisfied with the diet you have received to control your symptoms? Please indicate your level of satisfaction (0 = not satisfied at all, 5 = satisfied, 10 = extremely satisfied)
 0 1 2 3 4 5 6 7 8 9 10
- 2.2. Did the documents provided on the low-FODMAP diet seem clear and understandable to you?
 Yes, very suitable, I understood correctly
 Yes, but I needed to do some additional research
 No, too complicated
 No, lack of explanations
 I did not watch them
 Remark :
- 2.3. Ideally I would have preferred
 See a dietitian from the beginning
 Receive more information
 Receive more recipes
 Receive prescriptions for drugs and not have to follow a diet
 Other :
- 2.4. For each of the symptoms mentioned below, estimate the intensity during the last week preceding the consultation by circling the corresponding number on a scale from 0 to 10 (0 = No pain, symptom absent - 10 = unbearable)
 – Bloating
 0 1 2 3 4 5 6 7 8 9 10
 – Cramps, stomach pain
 0 1 2 3 4 5 6 7 8 9 10
 – Bowel sounds
 0 1 2 3 4 5 6 7 8 9 10
 – Flatulence, gas
 0 1 2 3 4 5 6 7 8 9 10
 – Diarrhea
 0 1 2 3 4 5 6 7 8 9 10
 – Constipation
 0 1 2 3 4 5 6 7 8 9 10
 – Nausea
 0 1 2 3 4 5 6 7 8 9 10
 – Fatigue
 0 1 2 3 4 5 6 7 8 9 10

In general, estimate on a scale of 0 to 5 the evolution of your symptoms (0 = no improvement; 5 = complete disappearance of symptoms):
 0 1 2 3 4 5

- 2.5. Did you follow the dietary recommendations provided by the low FODMAPs diet?
 Yes, all the time
 Often, regularly
 Sometimes
 Rarely
 No, never
 - If your answer is “Rarely” or “No, never”, why? (several answers allowed)
 I did not understand the explanations
 I don’t have time
 The diet seems too complicated to me
 I forgot, I didn’t think about the diet anymore
 I don’t like the foods that are offered to me
 This diet is too expensive
 I have difficulty finding the foods on the diet
 I don’t know how to cook the foods that are offered to me
 I don’t cook myself, I don’t have the choice to eat what I want (meal prepared in a canteen for example)
 Other reason:
- 2.6. Have you done additional research on the low FODMAP’s diet (internet, books, ...) ? YES – NO
- 2.7. Do you think that a dietitian would have been useful to better understand and follow this diet ? YES – NO
- 2.8. Did you use the documents to do your shopping ? YES – NO
- 2.9. Do you read the labels of the food products you buy ? YES – NO
 - If “yes”, do you find the information you are looking for (regarding the diet)? YES – NO
- 2.10. Did the diet cause you any problems in your social life (meals with friends, outings to restaurants, meals with family, etc.)?
 Yes, all the time
 Often, regularly
 Sometimes
 Rarely
 No, never
 - If your answer is “Yes, all the time” or “often, regularly”, is it mainly related to
 I don’t dare to talk about it, or I don’t want to talk about it
 I don’t want to bother
 I prefer to eat “like everyone else”, even if I have symptoms after
 Other reason:
- 2.11. Have you changed your habits since the last consultation regarding
 - Physical activity:
 - the tobacco:
 - Alcohol:
 - The drinks:
 - Pace of meals / snacks :
 If “Yes”, notify the change; if “No”, do not complete this question.
- 2.12. Would you like the advice of a dietitian for the benefit of explanations on the low FODMAP diet ? YES – NO

Thank you again for your help !. Good continuation!