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Facilitators and barriers to participation in population-based colorectal cancer screening programme from the perspective of healthcare professionals: Qualitative research study

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Abstract

Objective: High participation determines the success of colorectal cancer screening programmes in reducing incidence and mortality. The factors that determine participation must be studied from the perspective of professionals that implement the programme. The aim was to identify factors that facilitate or hinder the participation of the invited people in the bowel cancer screening programme of the Basque Country (Spain) from professional's perspective.

Methods: Qualitative design based on individual interviews and focus groups. Thirty-eight primary care professionals who implement the programme participated (administrative staff, nurses and general practitioners). Thematic analysis was performed.

Results: Professionals show high satisfaction with the programme, and they believe firmly in its benefits. Facilitators for participation include professionals' commitment to the programme, their previous positive experiences, their optimistic attitude towards the prognosis of cancer and their trust in the health system and accessibility. Barriers include invitees' lack of independence to make decisions, fear of a positive test result and patient vulnerability and labour mobility of the health professionals.

Conclusions: Professionals show a high degree of involvement and identify primary care is an appropriate place to carry out disease prevention. They identify the closeness to patients, the personal attitude and the characteristics of the health system as key factors that influence participation.

KEYWORDS
administrative personnel, colorectal cancer, health personnel, mass screening, patient participation, primary health care

1 | INTRODUCTION

Globally, colorectal cancer (CRC) is the third most commonly diagnosed cancer in males and the second in females, with 1.65 million new cases and almost 835,000 deaths in 2015 (Fitzmaurice et al., 2017). Screening programmes are recommended to detect and remove premalignant lesions and cancer in the early stages in order to reduce mortality. Following the recommendations of 2 December 2003 on cancer screening of the European Commission and aligned to the National Strategy for Cancer (Ministry of Health Social Services and Equality, 2012), a pilot study started in the Basque Country (Spain) in 2009 (covering 5.7% of the target population). Based on its results, population-based bowel cancer screening programme (BCSP) was incrementally extended to all citizens and was fully extended in the first invitation in January 2014.

Screening programmes have shown to reduce both incidence and mortality of CRC; there is evidence of a reduction in mortality of up to 33% (Flight et al., 2004; Mandel et al., 1993; Zorzi et al., 2015). In the Basque Country BCSP, a microsimulation modelling tool demonstrated a reduction in incidence and mortality over 30 years through Idigoras et al. (2017).

The participation rate has been related to cost-effectiveness, and to improve the effectiveness and decrease the participation barriers, organised BCSPs are recommended (Camilloni et al., 2013). A high rate of consistent participation increases the programme's sensitivity (Nishihara et al., 2013; van der Vlugt et al., 2017; Winawer et al., 1993). Reductions in mortality may only be attained if participation is adequate and sustained over time (Weller & Campbell, 2009). The Basque Country BCSP obtained on average almost at the level desirable by the European guide after the first invitation (2009–2011) (64.3%) (European Colorectal Cancer Screening Guidelines Working Group, 2013; Portillo et al., 2018). After implementing different measures to improve participation, in 2014, this rate was exceeded, reaching an average of 68.4% (Portillo et al., 2013).

One of the most important commitments for the programme's organisers was to achieve a high participation, as this would be essential in achieving the desired outcomes and in improving cost-effectiveness (Federici et al., 2008). The organisational model of the screening programme seems to play an important role in participation (Camilloni et al., 2013; European Commission, 2014; Federici et al., 2008). In order to facilitate this participation, the BCSP of the Basque Country based its implementation on primary care given its location, close to the population, and this is one of its main characteristics. Once the person receives the invitation to participate in the programme and the kit to collect the stool sample by mail at home, the whole process (except colonoscopy) is carried out in primary care, from the sending of the sample for the performance of a faecal immunochemical test (FIT) to the communication of the test results to the patient if the result is positive. The general practitioner (GP) informs the patient of the result when the FIT is positive, indicates a diagnostic colonoscopy and obtains the patient's informed consent for the test. Subsequently, the nurse instructs the patient on colonic preparation according to the protocol of the hospital where the test is to be performed. This colonoscopy is performed in different hospitals of the health network that have different protocols for the preparation in terms of fasting indications and the drugs that the patient must take for a proper colonic cleansing, which is essential for an accurate diagnosis. Finally, the notification of the result of the colonoscopy is also carried out in primary care by the GP. All the appointments with GPs, nurses and colonoscopy services of the hospitals are managed by the administrative staff. Furthermore, it should be pointed out that all primary care professionals (administrative staff, nurses and GPs) support patients throughout the entire process. The process, the place where it is carried out and the professionals in charge of each phase are illustrated in Figure 1.

To our knowledge, limited studies have analysed deeply the relevance that the involvement of different primary care units (PCUs) professionals can have in a BCSP with FIT. Most of the studies have determined the role that GPs can play in participation, as well as in carrying out the confirmation colonoscopy after a positive result, without analysing another professionals' involvement (Camilloni et al., 2013; Davis et al., 2012; Eisinger et al., 2011; Zapka et al., 2002). Other studies have analysed the perspective of GPs from a quantitative point of view, in terms of their opinion on screening, and whether they recommend it or not (Boyle et al., 2003; Gimeno García, 2012).

The qualitative methodology allows deepening the practices and exploring perceptions that do not emerge in quantitative studies. Therefore, the objective of this study is to know what are the factors that favour and hinder the implementation of the programme from the point of view of the PCU professionals.

2 | METHODS

The Basque Country's population-based BCSP has the support of a coordinating centre that plans, organises, monitors and evaluates the invitation process, the test results and follow-up of all positive cases. The screening is based on the detection of occult blood in faeces using a biennial FIT, targeting women and men between 50 and 69 years of age (586,700 inhabitants) and a colonoscopy under sedation for FIT positive cases.

All the professionals of the PCUs at the beginning of the programme receive an accredited training session of 90 min given from the coordinating centre before to invite people of their reference area. This training is carried out in the primary care centres where the screening is to be performed. It consists of an expositive and participative session in which different topics are discussed: concept of screening, results of the BCSP of the Basque Country (rates of participation in the programme, positivity, acceptance of colonoscopy and lesion detection and quality levels of colonoscopy preparation), design of the programme and role of the professionals involved (invitation, management of samples and results), possible incidences, resolution of doubts and collection of suggestions for the improvement of the programme.

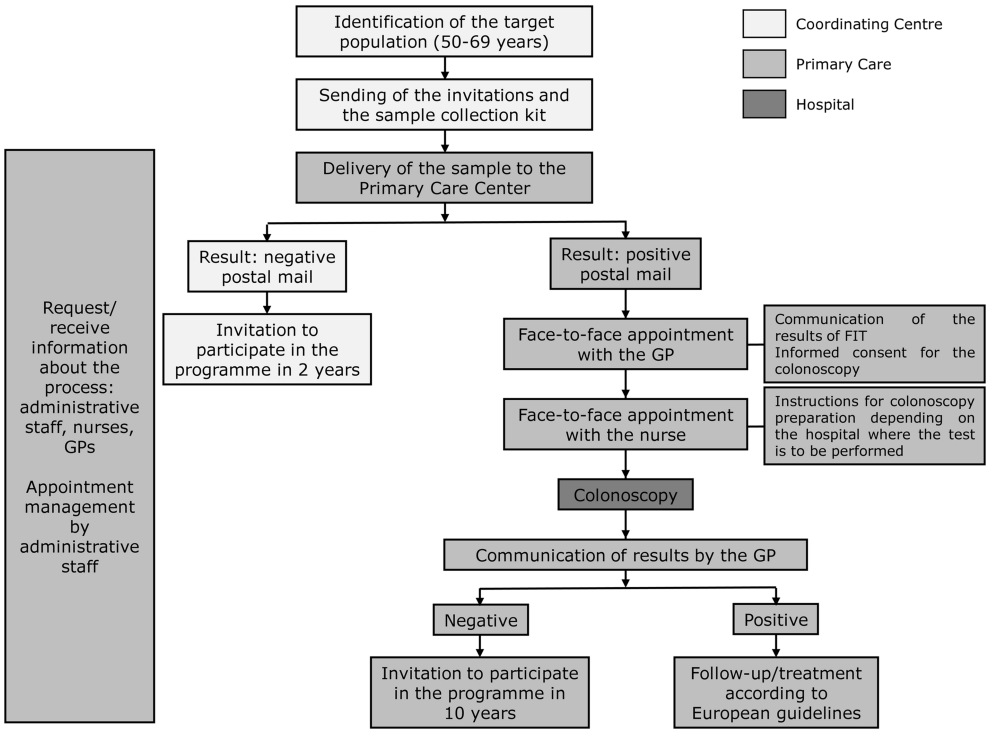

FIGURE 1 Flowchart of the colorectal cancer screening process in the Basque Country. GP, general practitioner

2.1 | SAMPLE SELECTION

Participant selection was based on snowball sampling, starting from the responsible for coordinating the implementation of the programme with the coordinating centre in each of the selected PCU. Group participants knew each other as colleagues, this helping to provide a context in which ideas are generated and common concerns are discussed naturally (Morse & Field, 1995). A specific amount of interviews or focus groups was not set a priori, but continued until data saturation was reached. A total of 38 professionals participated in the study in four focus groups, each involving 8–10 professionals, including administrative staff, nurses and GPs from different PCUs, and 28 in-depth interviews that were held simultaneously between December 2015 and May 2016. The participants in the individual interviews and focus groups were not the same in all cases, 17 participated in both the individual interview and the focus group, while nine participated only in the individual interviews and 12 only in the focus groups. Table 1 summarises the characteristics of study participants.

2.2 | SEMISTRUCTURED INTERVIEWS AND FOCUS GROUPS

We produced a script for the in-depth interviews and focus groups, to explore facilitators and barriers to achieving high rates of participation in the implementation of the BCSP from the perspective of PCU professionals involved in the programme. The script was semistructured and flexible, allowing the addition of new topics during interviews and throughout the data collection phase (Table 2), to make it as easy as possible for participants to contribute what they considered relevant. Interviews started with an open question concerning their opinion of screening programmes and the BCSP in general. This allowed topics to emerge that had not originally been included during the drafting of the script to be included during the data collection. The topics addressed were common to all interviews, but more emphasis was placed on specific aspects related to the role of the individual, given their professional category.

2.3 | DATA ANALYSIS

Both interviews and focus groups were recorded and transcribed word for word, and data analysis was performed using the Atlas.ti 5 software. To interpret the data, thematic analysis was carried out seeking to identify individual concepts concerning the perspectives of healthcare professionals (Kitzinger, 1994).

Two researchers analysed the data separately and carried out the coding process, these codes later being grouped into themes that were relevant to the objectives of the study (Table 3). Because the objectives of the interviews and the focus groups were the same, and the focus groups were used in a complementary manner to explore themes that might not emerge in the interviews, the analysis of both was carried out as a whole. The categories were discussed by the research group, and any disagreements were resolved by consensus.

3 | RESULTS

Thematic analysis of the interviews and the focus groups resulted in the identification of facilitators and barriers to participation in three

TABLE 1 Professional category of the study participants, method in which they have participated and demographic, work experience and training characteristics and characteristics of the PCUs where they work

		Method		Demographics		Work experience and training		The PCU where participants work	
No.	Professional category	Focus group	Interview	Sex	Age	Time in the centre (years)	Last training (year)	Urban/rural area	Participation of the PCU
1	AS	No	Yes	M	63	15	2013	Urban	Medium
2	AS	No	Yes	F	56	25	2014	Urban	High
3	AS	No	Yes	F	62	5	2015	Urban	Low
4	AS	Yes	No	F	48	15	2015	Urban	High
5	AS	Yes	Yes	F	52	22	2015	Urban	High
6	AS	No	Yes	F	58	28	2013	Urban	High
7	AS	Yes	Yes	F	37	2	-	Rural	High
8	AS	Yes	Yes	F	52	3	2014	Urban	Low
9	AS	Yes	No	F	45	6	-	Urban	Low
10	AS	Yes	No	F	48	12	-	Urban	Low
11	Nurse	Yes	No	F	58	16	-	Urban	High
12	Nurse	Yes	Yes	F	51	20	2014	Urban	Low
13	Nurse	Yes	No	F	47	6	2012	Urban	High
14	Nurse	Yes	Yes	F	58	24	2012	Urban	High
15	Nurse	Yes	No	F	33	2	2015	Urban	High
16	Nurse	Yes	Yes	F	53	3	2013	Rural	High
17	Nurse	Yes	Yes	F	58	1.5	2015	Urban	Low
18	Nurse	Yes	Yes	F	56	12	2015	Rural	High
19	Nurse	No	Yes	F	38	1	2013	Urban	High
20	Nurse	No	Yes	F	41	1	-	Urban	High
21	Nurse	Yes	Yes	F	56	5	-	Urban	Low
22	Nurse	Yes	No	F	59	26	2016	Urban	Low
23	Nurse	Yes	No	F	58	4	2015	Urban	Low
24	GP	Yes	Yes	F	45	5	2014	Urban	High
25	GP	Yes	Yes	M	45	0.5	2015	Urban	Low
26	GP	No	Yes	F	59	32	2012	Urban	High
27	GP	Yes	No	F	40	2	-	Urban	Low
28	GP	Yes	Yes	M	49	8	2014	Urban	High
29	GP	Yes	Yes	F	63	22	2012	Urban	Low
30	GP	No	Yes	F	48	7	2012	Rural	High
31	GP	Yes	Yes	F	47	5	2013	Rural	High
32	GP	Yes	Yes	F	53	3	2014	Urban	Low
33	GP	Yes	Yes	F	35	2	-	Rural	High
34	GP	Yes	Yes	F	47	5	2012	Urban	High
35	GP	No	Yes	M	59	25	2012	Urban	High
36	GP	Yes	No	F	59	25	2015	Urban	Low
37	GP	Yes	No	F	58	22	2015	Urban	Low
38	GP	Yes	No	M	57	22	2016	Urban	Low

Abbreviations: AS, administrative staff; F, female; GP, general practitioner; M, male; No., participant number; PCU, primary care unit.

main categories: (1) factors related to the professionals implementing the programme, (2) factors related to patients invited to participate and (3) characteristics of the healthcare system and the BCSP itself. Textual quotations adopted to describe these themes and their subthemes are listed in Table 3. In general, the professionals who participate in the programme hold similar opinions on numerous issues, despite the fact that they have different roles in the implementation, though in all cases their focus is on improving patient health. The

TABLE 2 Guide on general topics used in the focus groups and interviews

General topics
Opinion of screening programmes
Opinion of the bowel cancer screening programme (BCSP) in the Basque Country
Primary care in the BCSP of the Basque Country
Roles or functions of professionals in the programme
Attitudes of professionals to the programme
Previous experience related to colorectal cancer in general or the BCSP
Patients reactions and attitudes
Facilitators of and barriers to programme implementation

results corresponding to the aforementioned three categories have been divided into facilitators and barriers to participation in the BCSP of the Basque Country according to the objectives of this study.

3.1 | FACILITATORS

3.1.1 | Factors related to the professionals implementing the programme

'Closeness between patients and professionals strengthens professional's commitment to the programme'

The administrative staff are the gatekeepers to the health system, and they have very close contact with patients, who ask them for information and very often advice. The same applies to nurses and GPs, who also have a very close relationship with patients, a relationship of trust on many occasions. Professionals feel involved in the process and this friendliness is considered a key factor. Given this, professionals are affected by positive findings and even feel relief when screening results are negative, lesions are benign or the prognosis of malignant lesions is good.

'Professionals feel they are an important part of the programme'

Professionals feel that their role in the programme is important; they feel involved and that their perspective is taken into account, and this strengthens their motivation. Nurses noted that they are the appropriate people to provide patient education on colonoscopy preparation.

'Their attitude in the face of difficulties is key: they strive to ensure that everybody participates and that the process is as easy as possible'

Professionals care about participation rates and believe that the programme is well accepted by patients. Professionals strive to facilitate the participation of individuals who have difficulties accessing the health system, actively seeking ways that facilitate even more the participation of more vulnerable populations. Those affected include immigrants who live in the health district but who, due to changes in address, do not receive letters sent by the programme. This applies not only to invitations to participate but also to correspondence about results of the FIT or the appointment for colonoscopy. Further, they make efforts to ensure that vulnerable individuals participate in all the preventive programmes, not only in the BCSP.

In the event of positive results, professionals attempt to fast-track appointments and the management of results to minimise patient anxiety.

'Previous experience with cancer makes professionals more proactive'

Professionals recognised that their personal experience of screening and cancer has an impact on their attitudes to the programme, especially in terms of encouraging patients to participate. It is common that they remember specific cases of patients in which a positive screening test led to the diagnosis of malignant lesions which would have had a very poor prognosis, because it has not been detected earlier. These professionals are particularly proactive in encouraging patient participation.

'Training and contact with the coordinating centre are essential'

Not all members of professionals know the outcomes of the programme in detail, but their impression is that they are good. This information increases their motivation towards their daily work, and when nurses and GPs do know detailed data, they consider them a valuable tool for informing patients, helping them see the good aspects of the programme.

The results of the implementation of the BCSP are included in the training on the programme given to professionals by the coordination centre, and they consider it essential. As well as providing data on outcomes, training on procedures underlines the possibility of interacting with the coordinating centre, to enable them to collaborate in improving the programme or to address concerns. Such interaction is of particular interest to nurses, who teach patients about proper bowel preparation for colonoscopy, this improving the quality of the colonoscopy and avoiding the need to repeat the procedure, which is not risk-free.

'Professionals have a positive opinion of the programme'

Members of the administrative staff considered that all the programmes focusing on prevention, including screening programmes are good for the population. Nurses and GPs also believe this, although evidence also emerged of fears among some GPs about generating possible 'sick patients' through false positive results and how this affects patients' lives, although they consider that the programme is necessary.

3.1.2 | Factors related to patients invited to participate

'Media coverage and conversations about cancer help highlight the positive side of screening'

Professionals feel that they have to battle against the negative connotations of the word cancer. On the other hand, various factors help in

TABLE 3 Structure of the analysis and illustrative quotes from participants by themes and subthemes

Themes and subthemes	Illustrative quotes
Facilitators	
1. Factors related to the professionals implementing the programme	
a. Closeness between patients and professionals strengthens professional's commitment to the programme.	1. 'They should not be affected by this, should they? Because, perhaps, they have had other things … you know people's personal circumstances, and so it is unavoidable that there is an emotional impact; unavoidable. I do feel it'. (P26)
b. Professionals feel they are an important part of the programme.	1. 'I see us as a chain and that we are a link'. (P2) 2. 'I think that it's my job and so I try to do it as well as possible, to have the best information, and if I do not have it, I try to track it down from a reliable source to be able to give it to the patient, and not have doubts, not feel that perhaps I've been given poor information and I cannot trust it'. (P5) 3. 'It's nice to hear that something you have been involved in, you have contributed to, has worked out well. Indeed, when I see the preparation reports … [I think] that sounds familiar, I think I gave this patient …' (P17)
c. Their attitude in the face of difficulties is key: they strive to ensure that everybody participates and that the process is as easy as possible.	1. 'It seems to me that preventive programs, in that sense, have a great value. Sometimes they take more time or more job, yes … I have always thought that this program is great. So, I sell it as I see it'. (P30) 2. 'If the patient has difficulty accessing a consultation or a test … you have to do everything you can to facilitate them to participate … And everything from here'. (P32) 3. 'We always try to get people into the program, and get the highest number of recruitments and adhesions to the program'. (P19)
d. Previous experience with cancer makes professionals more proactive.	1. 'Among people who have got positive results … and have been through the whole process, there are lots of people I know, and in these cases, it is in some way satisfying to know that their disease was detected through the programme and it was caught in time. So, yes, indeed …' (P5) 2. 'The thing is that I have seen lots of patients with bags at some stage, with a difficult course of disease, complicated situations and a poor quality of life. So perhaps I think that the issue of the bag is important, if you see what I mean? To recognise that it could reduce one's quality of life, to find oneself with a bag, etc. I think that having seen patients over the years I've been working, which is quite a long time, I do think so, that maybe it does make … This and also that the course is chronic, that is, the illness becomes chronic. There are some that have a poor course and for whom the end is not far off. But well, it's more the years of life that you have with this colostomy bag that make you wonder whether it's worth it'. (P26) 3. 'On one occasion, I … we'll I do not know, I never [usually] say anything … I do not know … we GPs are not here to tell our story, but on one occasion I felt that I had to, well, I thought that it was appropriate to say, "look, I've been through it and it's OK. It does not matter; look, I myself … and it's fine."' (P32)
e. Training and contact with the coordinating centre are essential.	1. 'But when you get data on the outcomes, such as the good rates of participation and … well, you make an effort to collaborate with the programme'. (P35) 2. 'I consider it very important that people participate. Because once they have decided to do so … you have to … and above all for that reason. Despite the fact that later there may be false positives, … if you detect something … it's worth it. And at the start, the initial test, it's no bother'. (P34) 3. 'You can talk hypothetically: "I think it'll be nothing", "I think everything will be fine" … but if you have data you can say, "look, last year 300 people had colonoscopies at ___ and only one developed a complication" … "there were only five cases of cancer found" and to the patient this …' (P34)
f. Professionals have a positive opinion of the programme.	1. 'I do not think it's just another program that needs to be done because it looks very nice to the public, no. I think it has a benefit'. (P18)

TABLE 3 (Continued)

Themes and subthemes	Illustrative quotes
	2. 'For me, everything that you can detect early is a very important thing. Very important'. (P14) 3. 'But I think it's a good program, you understand, I just think about the benefit that makes the patient'. (P11)
2. Factors related to patients invited to participate	
a. Media coverage and conversations about cancer help highlight the positive side of screening.	1. 'I think that there's lots of word of mouth between them. People talk about the protocol and I think that people even come that … well, because a member of their family or a friend has mentioned that they have received a letter and that person has explained it to them a bit and then they have come to find out more'. (P27)
b. I trust the professionals and the health system.	1. 'Well, in some way, on your list you have patients that … only do things if you tell them they have to do them: "You should do this", and then they do not question it'. (P35) 2. 'Patients are fairly dependent on the opinion of their GP. Even when I think that the answer is yes, I want them to confirm that and hear them say so'. (P24) 3. 'In the end, though we encourage them, it's their decision. You recommend that they do it; but then, they have to decide'. (P15) 4. 'Concerning complications, we read the informed consent papers they have, and they start to understand. But I think that the consent forms are getting a bit over the top, to the point that everyone says "Yes, yes. The usual stuff." That's the risk. But well …' (P30)
c. Women participate more and often take responsibility for their partners' participation in the screening programme.	1. 'Men, to go for the testing perhaps … "Why should I do it?" They often come at the insistence of their wife; the woman says, "Jose Luis has received this, but he does not want to do it. What do you think?"' (P14) 2. 'They do not pay attention to their health; it's not only colorectal cancer screening. In many cases, it's a wife who comes to tell you that her diabetic husband is not following his diet; or does not take his medication. But … if the patient himself does not come, well …' (P27)
3. Characteristics of the health system and the BCSP	
a. The coordinating centre facilitates our work.	1. 'It's easy to contact the programme coordinators and that helps'. (P12) 2. 'It works very smoothly. We do not hesitate to pick up the phone if we want something quickly to solve a specific problem or for other queries, we have email and other ways of getting in touch with the coordinators [of the programme]'. (P2) 3. 'I think that it works very well … hey, look, we need such and such … or any queries we have such as, for example, what to do about people who have moved, for whom we do not have addresses, listen, it's not reaching them …' (P8)
b. The screening test is simple and non-invasive, and lesions are detected on an early stage.	1. 'We always try to convince them, saying it's a good idea, you should go for it, … if nothing is found, you have lost nothing. And if not, disease could be detected at a very early stage … and that can be a good thing. Some do come and ask'. (P21) 2. 'I often explain it to them with a piece of paper on which I draw a type of mushroom and that is what I tell them. That these things can grow in the intestine, and that's what adenomas are, but as we GPs are a bit odd, we give them odd names, but that in fact they are like mushrooms. And that if we leave these mushrooms to grow a long time, studies have shown that in, say, 10 years, they can turn bad. So, we have 10 years to get rid of them. And that what this programme seeks to do is catch these mushrooms in time. And remove them from people who have them. If they are removed, then there is nothing else that has to be done'. and 'They do not arrive nervous. And when they come, I tell them, you should be grateful. Because they have caught something that, though we do not know how soon, has quite a high risk of turning into something fairly nasty. And I try to make them see the positive side and the need now to follow all the protocols and come to all the check-ups they are going to be given'. Two quotes (P30)

(Continues)

TABLE 3 (Continued)

Themes and subthemes	Illustrative quotes
c. The programme is improving.	1. 'But often they come knowing the results of the colonoscopy already and that they have been told that they have had a polyp removed … Or that it looks good and they should not worry. In this sense, I think that they are reassured a lot by the verbal report'. (P25)
d. The approachability of primary care is essential.	1. 'Certainly, we see people who are not regular users of the health centre'. (P5)
Barriers	
1. Factors related to the professionals implementing the programme	
a. Professionals are concerned that patients are not independent at the time of making decisions and do not follow procedures correctly/Professionals endeavour to help strengthen patient independence.	1. 'We do not have the luxury, in terms of time, to be able to watch videos'. (P27) 2. 'Yes, indeed. I think that it is important first because we give them everything related to the preparation, though quite a few have been given paperwork by the anaesthetist or when they have seen the gastroenterologist … lots come with the papers they need to sign, the informed consent form, … but evidently, they are given so much information that later they end up in a nursing appointment [saying] "Look, I´ve got this … this sheet and this other one and …" or if they are referred for a preoperative consultation "Why do you have a preoperative consultation?" "They are going to do a test to check my colon"; then, you know they are going to have a colonoscopy. Then as well [you say] … "So, do you know what you have to do to prepare for that? And what not?" "Well, yes, they have told me …, they have explained …" "Ah, well, if you have any queries or concerns come in and we'll explain things."' (P20) 3. 'Because it's also important that patients take on responsibility for their own health. So, we are also always in the background, I do not know … There's a type of patient that may need it, as they are forgetful or absent-minded, but some people are aware of what they are doing. It's their call. They are free to say, "please leave me alone" and it's a totally respectable position'. (P28) 4. 'It's within the rights and responsibilities of patients that they are free to agree or not, whether they want to do it or not; they are also free in that respect'. (P22)
2. Factors related to patients invited to participate	
a. Patients' fear of participating is an obstacle.	1. 'They come in fearful. They get this news and, above all if people close to them, relatives or friends, have cancer and they have experienced it, [the news] that they have colon cancer, they come in fearful. Yes. They say, "In my case, they are going to find something and then what? If they find something … and so …?"' (P27) 2. 'But I think that most people are fairly aware; whereas in the early years, people had more doubts … more recently everyone has heard of someone who had something detected, and had some polyp removed and now gets checked after such and such a time … I think it's a pattern that is followed by lots of patients and for many, things go well'. (P20) 3. 'In fact, lots of people do not want you to explain things'. (P28)
b. Vulnerable individuals have great difficulties participating.	1. 'On this general practice list, there is a large transient population. People may be registered as residents here for a year and then move to another district …' (P38) 2. 'Perhaps when they first arrive, they are registered as residents here … and a short while later they move to another area'. (P22) 3. 'It may be that the data often do not match; if it's organised by municipal registration, often they are registered in one place, but live in another, and that's when these letters get lost …' (P10) 4. 'We are talking about the type of people that have other things they are more worried about than a letter inviting them to do a faecal occult blood test' (P17)
3. Characteristics of the health system and the BCSP	
a. Stand-in/temporary professionals face difficulties.	1. 'For those that are working all the time, it's enough, but … I always say the same thing, people who are the current stand-in or the next one has not done the training. They arrive and find that they have to do a

TABLE 3 (Continued)

Themes and subthemes	Illustrative quotes
	colonoscopy preparation session and evidently …, if it's a referral centre, you are swapped because there's another problem here or whatever and everything changes for you and you get a bit lost; you do not know very well what you have to explain. So, clearly, in the end, there are also problems there'. (P15)
b. The increase in workload and variability in protocols hinder the implementation.	1. 'Of course, people now know about the programme "Yes, that's true, what they sent me 2 years ago … It's come round again". So, it's much less … The first year involved explaining much more about what they had to do and … Now, much less'. (P4) 2. 'Well, part of the workload when you are doing it, as you know there's a result and in some cases it's going to be positive … moreover, well, you take it, at least I do, differently from other work we have involving paperwork or … So well, I think that taking time to explain and all that, I feel good doing it, even though it's extra workload'. (P27)

the management of people's fears and encourage general population to participate, including the extensive publicity that the programme has received and the fact that it is a topic of conversation among patients, as well as that famous people talk about having had cancer and having participated in screening programmes.

They believe that the population is aware of the programme, some patients even requesting information before being invited to participate.

'I trust the professionals and the health system'

Professionals declared that they felt that their patients had a high level of trust in both their opinion and the health system, although they pointed out that this is more evident in rural environments than in urban areas and large cities.

'Women participate more and often take responsibility for their partners' participation in the screening programme'

While women participate in the process alone, men usually go with their partners to both medical and nursing appointments. Moreover, it is common that a man delegates the preparation to a woman.

GPs believe that the fact that women are more used to participating in prevention programmes and screening is a key factor in determining that their partners also participate; sometimes women even ask professionals to help "convince them".

3.1.3 | Characteristics of the health system and the BCSP

'The coordinating centre facilitates our work'

The existence of a coordinating centre and the fact that is easily accessible is important to professionals, as they can get a quick response in the event of problems. Further, knowing people in charge personally makes the professionals feel part of the programme and not just that they have to implement something in relation to which their opinion is not taken into account. This aspect was particularly emphasised by members of the administrative staff.

'The screening test is simple and non-invasive, and lesions are detected on an early stage'

The characteristics of the BCSP itself clearly facilitate implementation of the programme. Professionals reported that the characteristics of the screening test are key when recommending that people participate, underlining its non-invasive nature and that it does not have adverse effects, and also that colonoscopies are performed under sedation. In addition, CRC tends to progress slowly, and it is therefore more likely to have a good prognosis in patients with a positive result.

'The programme is improving'

Professionals underlined that experience with the programme has led to improvements in the protocol, these changes facilitating its implementation and reassuring professionals. They agree that cases are detected in people who are not regular users of the centre and consider that a positive thing.

GPs consider that the programme has significantly improved and that the initial weaknesses have been addressed. In particular, they note that the coordination with the Gastroenterology Unit has improved, making easier the management of both appointments and recommendations. They consider how quickly patients receive colonoscopy as a key point. Endoscopists themselves give patients preliminary information, greatly decreasing the anxiety while patients wait for the full results.

'The approachability of primary care is essential'

Professionals feel that it is essential that the programme is carried out in PCUs. The relationship of trust between patients and professionals established there, which in most cases precedes patients' participation in the programme, facilitates patient access and participation. This close relationship, which is particularly strong in small centres, leads to a greater commitment among professionals to the health of their patients. This is why both nurses and GPs consider that the

preventive activities should be carried out in PCUs, and this also allows close patient follow-up, particularly relevant in the BCSP, in which both patients and their families need support from professionals in the handling of results and during the management of the illness. PCU professionals also consider that they have the best skills to provide health education, which is important in this programme.

3.2 | BARRIERS

3.2.1 | Factors related to the professionals implementing the programme

'Professionals are concerned that patients are not independent at the time of making decisions and do not follow procedures correctly/ Professionals endeavour to help strengthen patient independence'

One of the difficulties voiced by GPs is that patients are unwilling to weigh risk–benefit and make decisions regarding their health, even though professionals promote informed decision making. Further, the freedom of patients to decide is handled very differently by different members of professionals participating in the programme. Some tend to directly encourage patients to participate, while others consider that patients should take their own decisions concerning their health; however, some patients prefer to delegate the responsibility of deciding whether they should participate to health professionals.

Nurses are concerned about sample collection and colonoscopy preparation being performed properly and are always willing to address patients' concerns even after appointments, as they perceive that patients' concerns often emerge after what has been dealt with in consultations.

Factors related to patients invited to participate.

'Patients' fear of participating is an obstacle'

Patients' fear of screening and colonoscopy results and of potential complications, as well as doubts about whether screening is useful at all, is felt to be an obstacle. In relation to this, professionals give patients information and try to help them manage their concerns. A positive result in the screening test produces various different responses during medical consultations. GPs perceive distress and fears surface about the results.

'Vulnerable individuals have great difficulties participating'

Vulnerable citizens, such us immigrants, have difficulties in completing the screening process for various reasons. Sometimes they change address, and the programme uses conventional mail as the main channel of communication. Nevertheless, the coordinating centre carries out an exhaustive search of all the return letters, in order to try to find the correct addresses. This is a concern for professionals, who report finding greater difficulties both with sample collection and colonoscopy preparation. They also highlight that preventive activities in general, not only the BCSP, are not a priority for immigrants. They have also observed a lack of interest in patients who find it difficult to understand the process, as well as individuals with a low level of education.

3.2.2 | Characteristics of the health system and the BCSP

'Stand-in/temporary professionals face difficulties'

Short-term contracts and high mobility among PCUs also represent a barrier to implementation of the programme. Although training is provided in all the PCUs before implementation of the programme and online training is also available, some professionals do not attend as they are not there at the time, and then, they have difficulties in applying the protocols in other centres.

'The increase in workload and variability in protocols hinder the implementation'

Nurses agreed that the different protocols for colonoscopy preparation have been a barrier to the success of the programme, although they admit that the situation has improved since the programme was launched. On the other hand, professionals recognised that the workload in health centres significantly increases during the screening programme, though they consider that it is manageable given the benefits of the programme. In their opinion, the time dedicated to the implementation of the programme is an 'investment', and they believe that 'it's worth the effort'. They pointed out the increasing workload is progressively easier to manage, because patients already know about the programme and the profe**ssionals have integrated the protocols**.

4 | DISCUSSION

A qualitative analysis of the factors that facilitate and hinder participation in the BCSPs from the perspective of the PCU professionals is essential for the improvement and evaluation of the programme, with a direct positive impact on the rate of early detection of CRC, and consequently in its incidence and mortality. A comprehensive overview of the process involving all participating agents (GPs, nurses and administrative staff) is a very valuable source of information for improving strategies and achieving higher participation rates; being the BCSP of the Basque Country, to our knowledge, the only one that has achieved the involvement of all primary care professionals in the screening programme.

In the interviews, professionals identified factors that facilitate and hinder participation at three levels, that of the health professionals, that of individuals invited to participate and that of the health system itself. Factors that facilitate participation include the following: professionals' commitment to the programme, which leads them to encourage people to participate (reporting that this positive attitude is attributable to factors such as their opinion about the programme and the extent to which it benefits patients); their previous positive experiences both personal and professional; a positive attitude to cancer

among individuals invited and their trust in the health system; characteristics of the programme itself (continual improvement and use of a screening test that is widely accepted, among other factors) and accessibility associated with the programme being carried out in PCUs. The perception of GPs and the organisational models have already been demonstrated as an important and determining factor in participation in other studies (Dawson et al., 2017).

Barriers to participation include patients' independence regarding both decision making and the taking of the test, patients' fears about the results, the social vulnerability of part of the population and changes in the place of work at the health centres.

Several studies have analysed reasons for the non-participation of people invited to participate in CRC screening programmes from the perspective of GPs (Benito et al., 2018; Hall et al., 2015). As regards to the characteristics of the BCSPs, it is essential also to include the point of view of nurses and administrative staff members, who are also key players and in close contact with citizens. Various studies have identified that the recommendation of a GP to participate in the programme favours participation (Janz et al., 2003; Zapka et al., 2002). Related to this, it is worth noting the favourable attitude towards participation in the BCSP of the GPs. There is debate in the scientific community about the risk–benefit of screening programmes. However, while there seems to be uncertainty in the case of breast cancer screening by mammography or prostate cancer screening by blood antigen detection, the benefit observed in colon cancer mortality rates with participation in screening generates a more favourable opinion (Hersch et al., 2017; Kalager et al., 2018). On the other hand, in the CRIBEA study in which the BCSP of the Basque Country participated, complications were reported in 3.3‰ of diagnostic colonoscopies (Vanaclocha-Espi et al., 2019). All this information is used in training sessions and is available to both professionals and the general public on the programme's website (Osakidetza-Servicio Vasco de Salud, 2021). This evidence-based assessment by professionals and the availability of all BCSP results and indicators could explain why GPs, even taking into account the potential risks of screening, recommend participation to their patients.

It has also been reported that individuals do not specifically seek an appointment when they receive an invitation to participate, but rather they raise the topic when they go to the health centre for other reasons, thereby decreasing the possibility of receiving the direct recommendation of a healthcare professional. Despite this, patients in the study of Hall et al. (2015) reported that they would have participated if recommended to do so by their GP. The professionals in our study highlighted that nurses and administrative staff also being involved in the programme makes it much easier for patients to contact professionals, as they are more accessible. In fact, Aubin-Auger et al. (2011) concluded that lack of time to discuss with the GP could hinder participation. The involvement of professionals other than GPs in the BCSP of the Basque Country increases opportunities to address peoples' concerns, and facilitates participation.

Many of the factors identified by healthcare professionals in our study related to non-participation are consistent with findings of previous studies, such as psychosocial factors (despite holding a positive opinion of screening, not participating due to fear of becoming ill or of a positive result), cultural factors (social acceptance or the characteristics of the test itself) or previous experience (fears) (Buron et al., 2017; Hall et al., 2015; Hurtado et al., 2015).

Regarding the idea that people's socio-economic situation and priorities when they are invited (a focus on other health problems or a wish to avoid stress associated with participation) can hinder their participation as Clavarino et al. (2004) and Hall et al. (2015) concluded, we should highlight that in our study, both nurses and administrative staff members do feel that, for some individuals not feeling ill at the time and also having other things going on in their lives that they consider more important are great barriers to participation. In a study on barriers to BCSP participation, Aubin-Auger et al. (2011) highlighted the need for specific training for GPs. In our study, professionals underlined the importance of the regular training they receive and also of the close contact they have with the coordination centre, which helps them solve the problems that arise during implementation of the programme and they value it as facilitator.

In a systematic review, Clarke et al. (2015) founded a lower screening participation rate among men, and similarly, participation rates among individuals invited to participate in the BCSP in the Basque Country are significantly higher among women than men (70.9% in women vs. 65.6% in men between 2009 and 2014) (Portillo et al., 2013). The perceptions of primary care professionals in our study are consistent with this pattern. Moreover, GPs, nurses and administrative staff members agree on the importance of women as guardians of their own health and that of their families, in that they are often the people who encourage their partners to participate and to help them during the entire process, women also being closely involved in colonoscopy preparation. It would be interesting to explore the role of women in the health of men and the implications of this for their own health in this context.

Finally, it should be noted that we have not found any references in the literature to the lack of job stability among health professionals as a barrier to participation. However, this could be due to the characteristics of the healthcare systems and the rates of temporary employment in different settings.

The representativeness of the selected sample could be a limitation in our study, but to minimise this possible bias, different profiles of professionals have been selected, as well as different characteristics, such as sex, age, shift or years of experience in PCU, and also, centres with different environments and participation rates have been selected.

In conclusion, the primary care professionals, not only GPs but also nurses and administrative staff, show a high involvement with the BCSP what is determinant with the high participation rate of the programme. The PCUs are identified as the best place to carry out prevention. They identify the closeness to patients, the personal attitude and the characteristics of the health system for the implementation of the programme as key factors that influence participation.

The results obtained in our study regarding barriers or facilitators when implementing a screening programme with successful indicators will be very useful to identify improvement measures that increase

the efficiency of the BCSP. With regard to health professionals, it is important to work on increasing the time available for direct care in relation to the programme. Additionally, making nurses visible as health personnel qualified to support patients in making informed decisions could also be fundamental. At the organisational level, the unification of protocols to be followed during the implementation of the programme could facilitate its development, especially if staff mobility is high. At the same time, and taking into account that training sessions have been shown to be a facilitator in this study, distance learning could be a good alternative for those professionals who for several reasons have not been able to complete the face-to-face training or who need to revise. Finally, at the patient level, aspects such as vulnerability or masculinity as barriers to participation require a comprehensive approach with active public health policies. Even so, specific interventions would be possible from primary care, such as adapting the process to their needs, i.e. more consultations with health professionals if necessary to help in decision making.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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