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IDENTIFICATION OF THE IMPACT FACTORS OF THE PARTICIPATION RATE IN MASS SCREENING FOR COLORECTAL CANCER "ABOUT THE FEASIBILITY STUDY IN THE WILAYA OF BEJAIA"

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Abstract

Colorectal cancer is the second most common cancer in Algeria. Its screening is of interest which was confirmed in a Cochrane meta-analysis. The national organized screening program for colorectal cancer has been validated by the national screening committee but not yet implemented in Algeria. a pilot study was carried out in the Bejaïa region between January 2017 and December 2019. It is aimed, every two years, at people aged 50 to 74 at average risk and asymptomatic. It has since been based on the immunological test for occult blood in the stool. The participation rate for this pilot program was 33%, lower than European recommendations. In our study, the citizen participation rate was the main judgment criterion. The objective of this work was to evaluate the impact factors of the pilot program identified during its implementation. Results taking a test under the program is associated with a reduction in the lifetime risk of developing colorectal cancer, by 24% for men and 21% for women, and a reduction in the risk of die from colorectal cancer, by 51% and 43% respectively. The mass screening strategy is based on steps according to a process model, it was identified that awareness had a positive impact with a;;;; training was also identified as a positive impact factor on the participation of general practitioners. Conclusion these results confirm that in the average risk population, screening organized is an effective strategy for reducing the risk of colorectal cancer. They also confirm that achieving European objectives remains a key issue for improve the effectiveness of organized screening. An evolution of the test delivery methods immunological could make it possible to achieve these participation objectives.

Keywords: Colorectal Cancer; Mass Screening; Evaluation of a Program

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INTRODUCTION

The results of various randomized clinical studies have led to the establishment of pilot programs or even organized colorectal cancer screening programs in several countries.[1,2,3] To date, there is no program or mass screening strategy for colorectal cancer in Algeria for the average risk population. This is how our work problem was composed: mainly on the feasibility of implementing a colorectal cancer screening program. The main objective of our study is to carry out an organized mass screening strategy for colorectal cancers in the wilaya of Bejaia as pilot project as part of the 2015-2019 cancer plan. The judgment criterion for this established program is the Participation Rate (TP) of the target population which must be greater than or equal to 40%. The developed program is evaluated by performance indicators. This is a screening-type epidemiological study falling within the framework of an interventional study through the application of an elaborate program, the study took place over a period of 26 months (January 2017/February 2019) The people recruited are male or female aged between [50-74] years old with an average risk of developing colorectal cancer. Three target daïras in the wilaya of Bejaia and 10,000 people concerned, the citizen is invited to carry out a qualitative immunological test at the level of the polyclinics of the daïras of the study, the positive tests are directed to the level of the Khellil University Hospital Amrane to perform a total colonoscopy by gastroendoscopists, (10.6%) are excluded from the study due to the presence of symptoms suggestive of colorectal cancer or a first-degree personal or family history of colorectal cancer. The participation rate was 30.02%. 17(6‰) people are screened for colorectal cancer. The average age of his patients is 59.76 years +/- 8.2, a median of 57 years and a mode equal to 50 years. 24.24% people with advanced adenomas. We subsequently became interested in the impact factors of the citizen participation rate, an element that could improve the results obtained in terms of mortality and incidence of colorectal cancer, however we analyzed the impact factors of our proposed strategy, the main objective of this article is to identify these factors that can modify the participation rate [4, 5, 6]

PATIENTS AND METHODS

This step concerns the choice of our strategy which will direct the program throughout the period of study recruitment, selection of screening and treatment methods, determination of screening frequency, target age group and coverage rate. Our colorectal cancer screening strategy is aimed at older women or men over 50 years old living in the areas raised in the wilaya of Bejaïa. This screening of mass takes place every 2 years until the age of 74 by the qualitative immunological test designated and indicated in the means and materials chapter above

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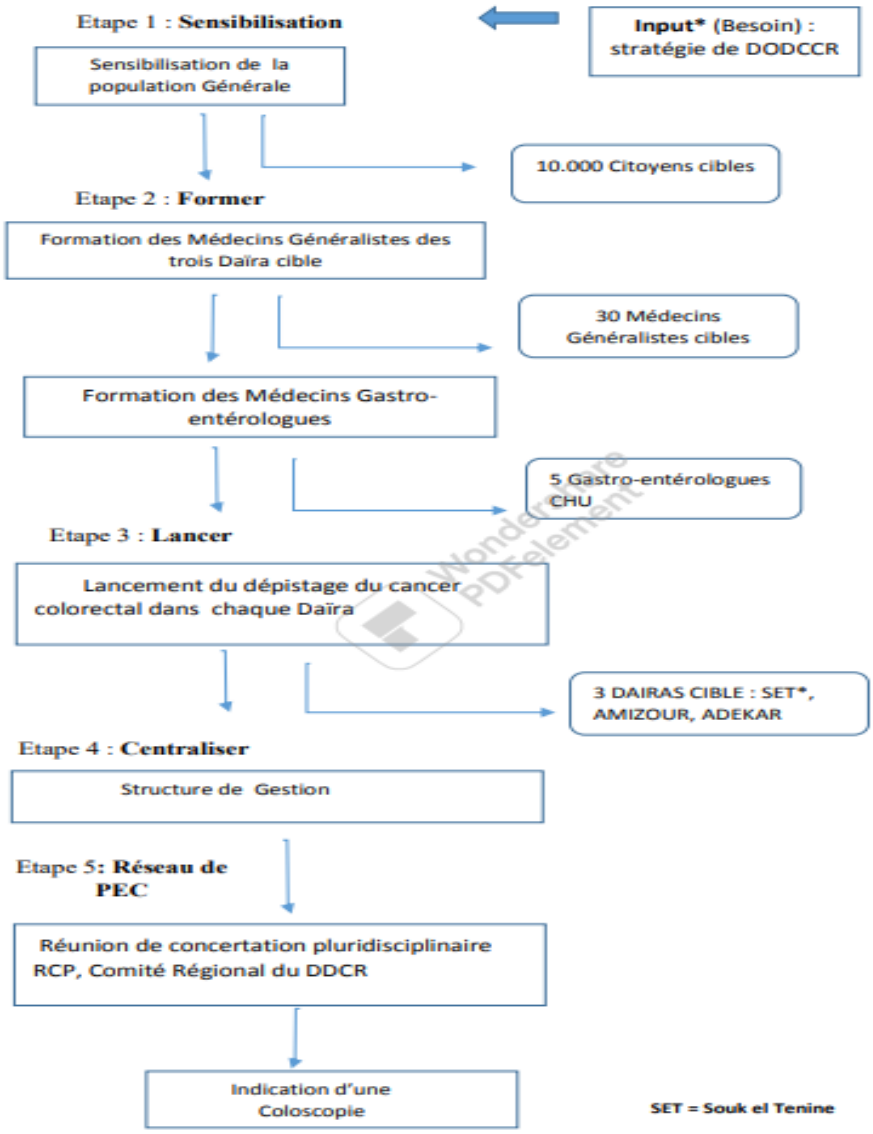

Figure 1: Design of study

RESULTS

Total participation rate by age

The age range of the highest participating population is between [50–54] years, then the age range between [60-64] years, the participation rate is decreasing with increasing age of the population aged [65-74] years, (Graph 1),

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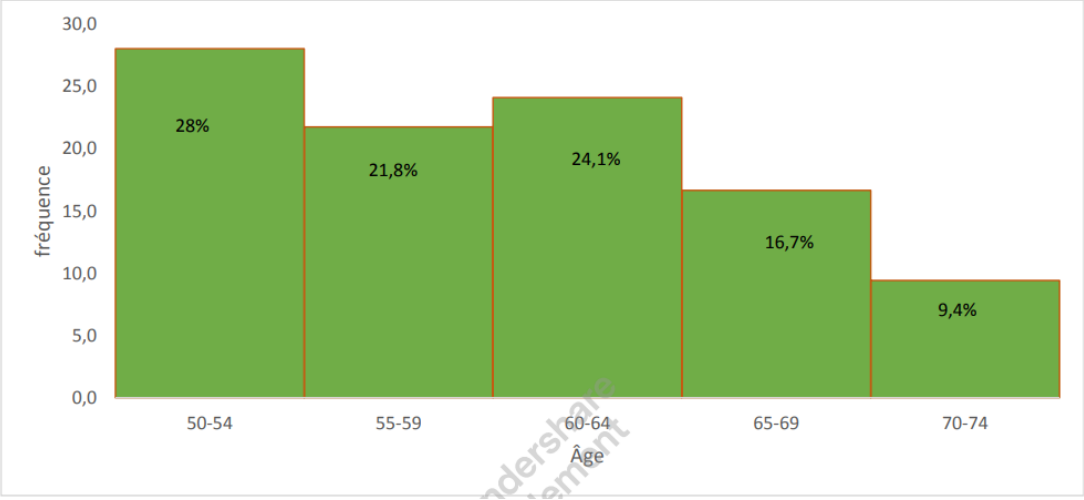
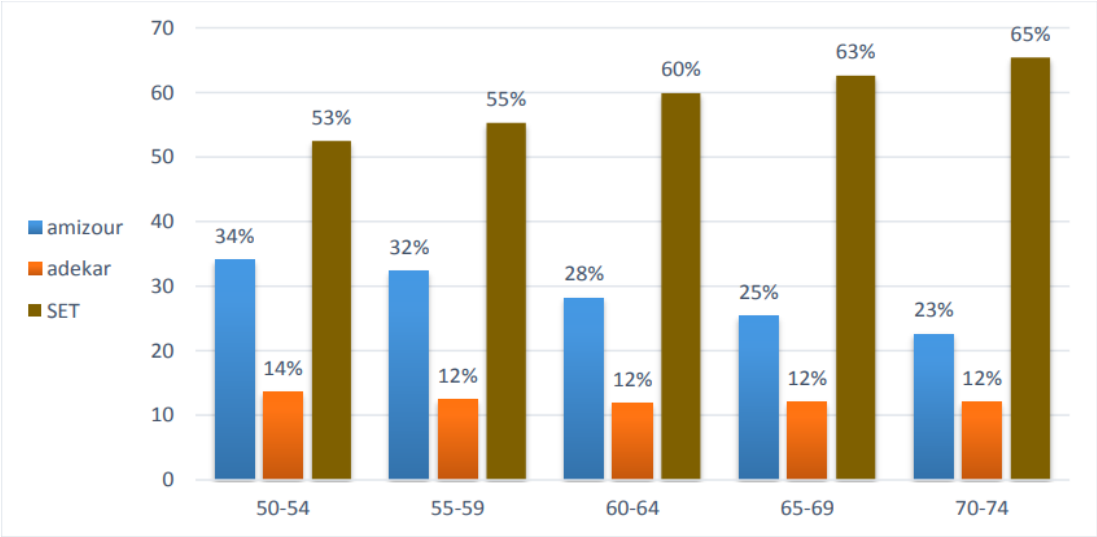


Chart 1: Overall participation rate by age

Participation rate by age in each daïra

The participation rate is decreasing with increasing age in the commune of Amizour versus increasing with age in the daïra of Souk el Tenine, in the daïra of Adekar the participation rate is stable throughout the age groups of the participating population.



Graph 2: Participation rate by age in each daïra.

Total participation rate by gender

The chi-square test does not reveal a significant difference between the two sexes in the participating population (graph 3). The sex ratio is 0.81. The analysis of the participation rate according to gender in each daïra does not show a significant difference p= 0.25. Women participate in the same way as men in the study daïras, the sex ratio = 0.81.

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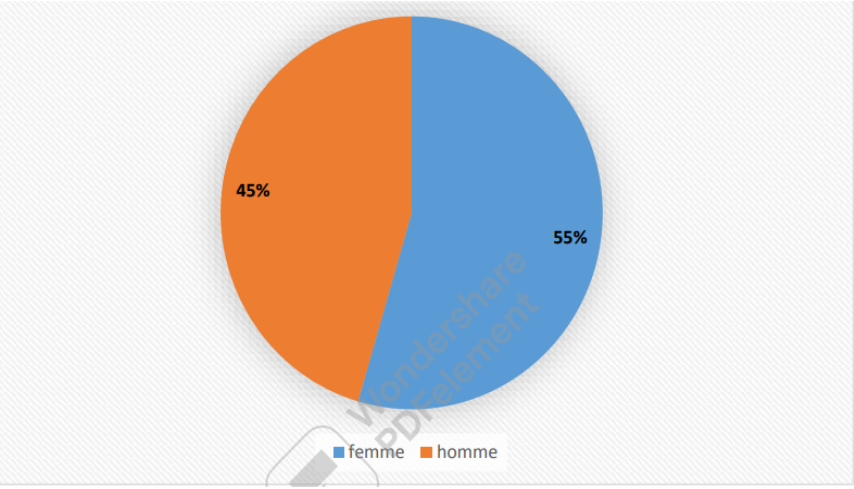
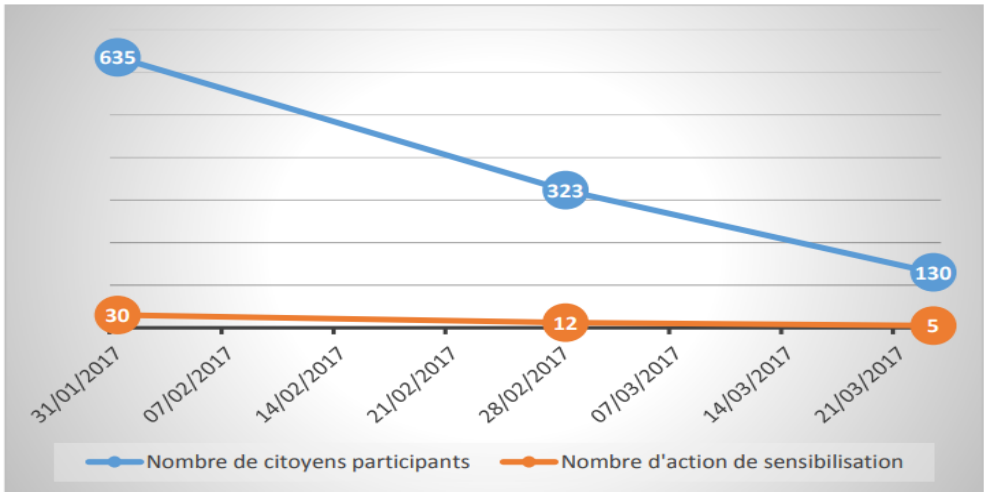


Graph 3: Participation rate by gender

Participation rate according to the number of awareness actions

The participation rate curve is decreasing (graph 4), with the curve for the number of awareness actions. The correlation between these two curves was studied by applying a Pearson correlation coefficient R2= 0.99. Its positivity shows us that there is a real correlation between the number of awareness actions and the number of participants calculated per month during the year 2017. The correlation index is also calculated for the months of May, June and July of the year 2017 (graph 5) and shows a correlation R2= 1 The correlation index calculated for the month of January, February and March of the year 2018 (graph 6) and shows a correlation R2= 1 The coefficient correlation calculated for the year 2017/2018 (graph 7) per quarter finds an R2 = 0.86 The number of participants is in perfect correlation with the number of awareness actions.



Graph 4: Participation rate and awareness-raising action by month 1st quarter 2017

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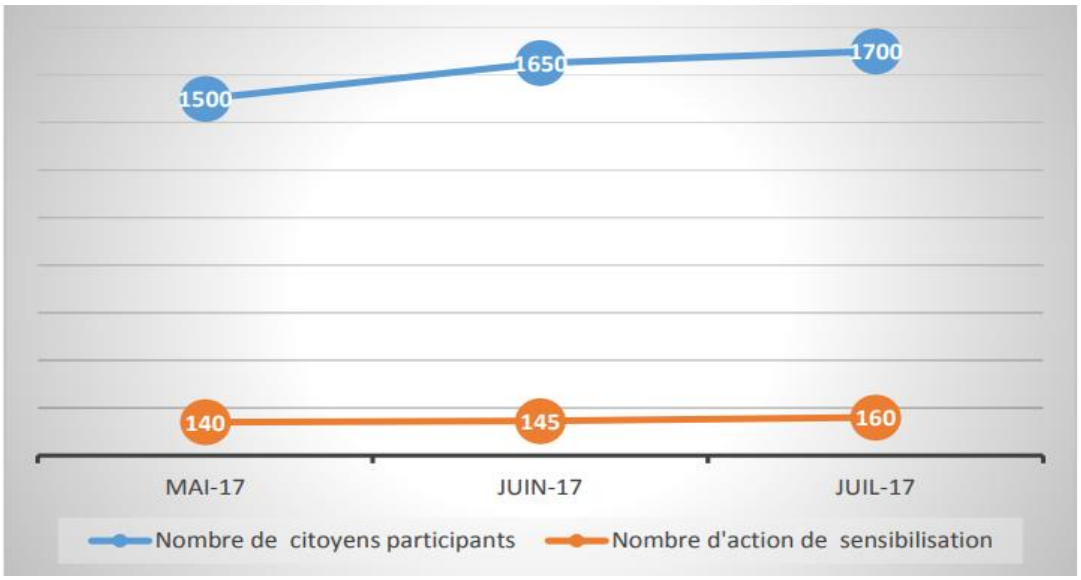
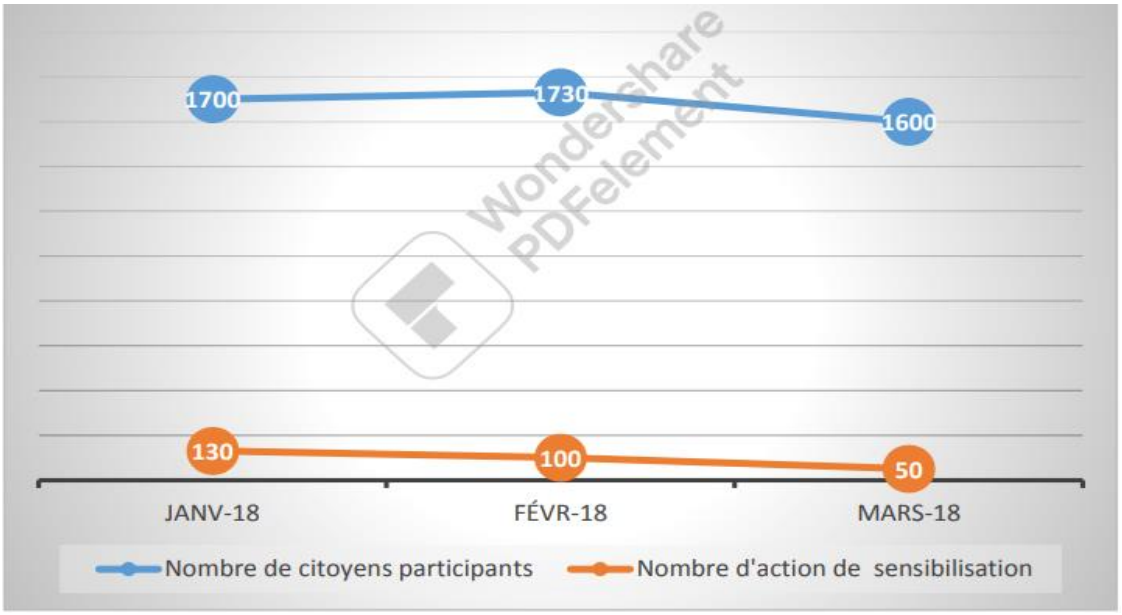


Graph 5: Awareness-raising action and participation rate per month 3rd quarter 2017



Graph 6: Number of awareness actions and participation rate per month 1st quarter 2018

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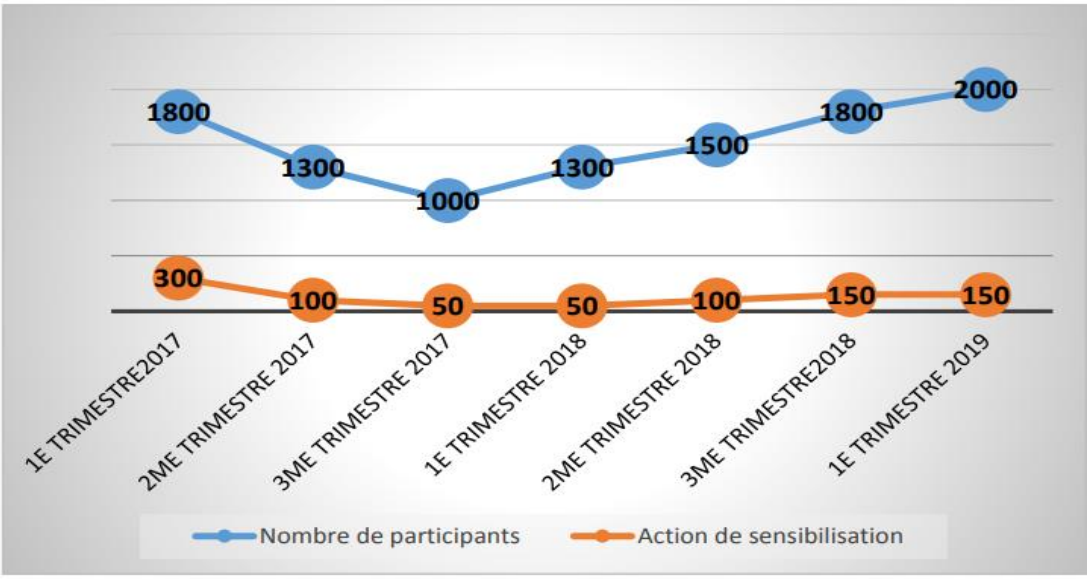

Graph 7: Number of awareness actions and number of participants 2017/2018

Participation rate of General Practitioners

The total participation rate of general practitioners is 42% (32) in the two health sectors of the daïras concerned by mass screening for colorectal cancer, as illustrated in Table 1 which illustrates in detail the participation of general practitioners.

Table 1: Participation rate of general practitioners

Structure sanitaire	médecin généraliste Secteur publique	médecin généraliste Secteur libéral	TP Public	TP Libéral
Polyclinique de SET*	10	10	(10) 100%	0%
Polyclinique de Melbou	10	05	(10) 100%	0%
Polyclinique d'Amizour	15	20	(05) 33,3%	(5)25%
Polyclinique d'Adekar	05	01	(02) 40%	0%
Total	40	36	(27)60%	(5)13,9%

SET* : Souk el Tenine

Tenine polyclinic all participated in the pilot program for colorectal cancer screening organized in the daïra. On the other hand, none of the general practitioners from the liberal sector in the same periphery participated. In the same way, 25% of these general practitioners in the liberal sector participated in screening in their daïra.

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DISCUSSION

The average participation rate in our study is 30.02%. This figure obtained is lower than the rate set by the European scientific communities at 45% for mass screening to be effective, while participation varied between the pilot daïra we recorded a rate of 22.3% in the commune of 'Amizour, 43.38% in the daïra of Souk el Tenine and 18.75% in the Daïra of Adekar . These variations between the Daïra are partially explainable by the number of awareness-raising actions carried out and the greater participation of general practitioners at the level of the daïra of Souk el Tenine, but can be linked to the non-travel to peripheral health structures of citizens living in isolated areas but also to the lack of staff of general practitioners in its mountainous areas. Citizens travel with difficulty and infrequently to health facilities except in the most urgent cases.

A reality that we experienced during the caravans to our villages, where people came to discover this screening program with enthusiasm and asked relevant questions concerning cancer in general and colorectal cancer specifically. In pilot studies carried out in France, these variations between departments 9.4% in Corsica and 47% for Ille et Vilaine in 2016 are explained by the delay in sending kits to the people concerned in certain departments [6, 7, 8].

The effectiveness of a screening program depends on the number of people who participate. A high participation rate is considered the main key to its success. This must be taken into account when defining the terms of organization, financing and implementation of the program [9, 10]. Favoring a high participation rate means placing the approach within an ideal public health perspective. The EU Guidelines specify that each program determines its own criteria, [11, 12] as long as the adequacy and fairness of the exclusion measures are respected.

These considerations are important for the definitive establishment of mass screening in Algeria. According to the EU Guidelines, 95% of people targeted by the program should be able to be invited to participate. This is a reference target value that could be recommended. The desirable participation rate should be above 65% [14, 15]; the participation rate considered acceptable is 45%.

The National Cancer Plan in Luxembourg sets a participation objective of 30% within the framework of pilot studies, then 60% after 5 years. 138 If we consider these two elements, we can reasonably estimate that the screening participation objective of 30% is achieved at this stage over a period of 3 years but not the objective set by the research protocol issued in starting point of the study which is 40%. Other experiences: - In Quebec (Levesque & Pelletier, 2013) [13] the targeted participation rate was estimated at 60%. It rose (Sing et al. 2015) to 55%, with a regional variation of 41% to 67% depending on the territory. - In France, the High Authority for Health (2013) indicates that over the period 2010-2011, the national screening rate was 32% (immunological test followed by a colonoscopy in the event of a positive test). The CCR program indicates (2017) a rate of 28-29% for 2015 – 2016. - In the Netherlands [16], the program management indicates a

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participation rate of 68 to 72%, with the sending model of the FIT test directly to the invited people. The literature notes that various obstacles to participation must be taken rigorously into consideration, which depends on numerous factors: political (will and means), cultural, organizational, financial, standard of living, expectations of the population, quality of the participation process. Information and invitation. Various studies highlight, through the choices of organization or method (as for other prevention programs), factors which facilitate or restrict the participation of the population. As the effectiveness (and efficiency) of a program depends on the participation rate, particular attention should be paid to these issues.

The obstacles identified at our level are: - The culture and perception of health prevention influence the effectiveness of a Program, - cancer is a taboo disease which means death; the concept of cure is not possible due to the lack of knowledge of colorectal cancer and its carcinogenesis process by the citizen. - The Kabyle language is a major obstacle. Both general prevention campaigns and specific documentation must pay particular attention to this. - The fact of not feeling concerned because of your state of health (absence of symptoms) should not be underestimated. - Family, social and economic situation. - Sex: in our study we did not find a significant difference between participation between the two sexes (graph 3).

However, in Europe or the USA, men are less concerned than women about screening. These latter can However, they play an essential information and incentive role, particularly because of their experience of breast cancer screening as a successful program. - Age: the oldest people in the target population (65-74 years) are more hesitant (graph 2). - Precariousness: this category of the population generally has an average general state of health and is often less informed and aware. - The information and organization methods of the program are insufficient for the continuity and stability of participation, as clearly shown in graphs 5-6-7. - Fear linked to the screening result. - The cost of participation (personal payment) to encourage the support of the population, several avenues of action are identifiable: - Family and loved ones (friends, work colleagues) have a certain influence in the personal decision to participate or not to a screening program.

Positive shared experiences induce a dynamic attitude in favor of improving one's state of health, therefore to avoid illness and the treatments that result from it. - Strengthening the dialogue between the patient and the attending physician is in principle considered the key element. This is verified in the evaluations of CRC screening programs in several studies and thesis works devoted to the role of the general practitioner in the screening of all cancers. - Clear information on the benefits of the program and the screening methods. - The commitment of local authorities to raising awareness in all sectors.

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Table 2: comparison of international pilot strategies with the Bejaïa pilot study

Pays	Bejaïa	Australie	Italie	France
Année	2017-2019	2002-2004	1996-1998	2003-2006
Type d'étude	Pilote	Pilote	Essai clinique	Pilote
L'âge (ans)	50-74	55-74	50-70	50-74
Critère d'exclusion	symptômes antécédents personnels ou familial de CCR	coloscopie récente symptômes, antécédents personnels ou familial de CCR	coloscopie récente antécédents personnels ou familial de CCR	Risque élevé et très élevé coloscopie récente
Méthode d'invitation	moyens de communication Par le MG	envoi postal du Test Par le MG	Lettre d'invitation	envoi postal postal du Test
Taux de Participation	**30,2%**	**45,4%**	**42,1%**	**33%**
Méthode de Sensibilisation	TV, Radio local, affiches	Logistique Pédagogique TV Radio, Affiches	masse media MG, labo Pharma	Non Précisé dans la Publication
Population Eligible	10000	56,907	-	163,707
Intervalle du dépistage (ans)	2	3	2	2
Type de test utilisé	iFOB	iFOB	FIT	FOB/FIT
Méthode d'identification de la population éligible	-	Dossier d'inscription informatisés de données de population	Résident sur fichier municipal	data base
Programme National implanté	Non	Oui	Oui	Oui

gFOB = Test au gaïac
iFOB = Test immunologique

CONCLUSION

The participation rate in colorectal cancer screening in our study remains insufficient to have a public health benefit. This is not inevitable, for us doctors and powers public to understand why a part of the targeted population refuses to participate.

Through this study, we wanted to analyze the factors that could improve the participation rate of citizens.

The inciting factors found are the general practitioner, the presence of digestive symptoms and the presence of family history.and awareness of the target population

Finally, the obstacles mainly cited are the test methodology and the representation social status of cancer. The general practitioner, however, remains one of the most cited factors, playing a key role in screening. This first study will, we hope, pave the way for others. Indeed, a qualitative study like ours lays the foundations for understanding this public

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health problem of colorectal cancer. However, a large-scale quantitative study would be interesting and would allow statistical conclusions.

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