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Original article

Impact of the telephone motivational interviewing on the colorectal cancer screening participation. A randomized controlled study

Impact de l'entretien motivationnel téléphonique sur la participation au dépistage du cancer colorectal. Une étude randomisée contrôlée

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ABSTRACT

Introduction. – While high participation rates ensure the cost-effectiveness of colorectal cancer screening programs, it is well known that postal requests do not achieve acceptable levels of participation.
Objective. – This randomized controlled study aimed to test the impact of individualized phone counseling to prompt people aged 50 to 74 to take a colorectal cancer test.
Method. – Two phone strategies were compared. The first involved computer-aided individualized counseling while the second was based on motivational interviewing. A total of 49,972 people were randomly assigned to a control group (CG) and to the individualized counseling (IC) and motivational interviewing (MI) telephone groups.
Results. – A simple call doubled the participation rate per protocol (19.2% > 9.2%; $p < .001$; $r = .131$; $OR = 2.374$), and tripled it when the interview was conducted (30.4% > 9.2%; $p < .001$; $r = .219$; $OR = 4.321$). In an intention-to-treat analysis, the benefit of calling by phone remained even higher than postal requests (10% > 9.2%; $p < .01$; $r = .014$; $OR = 1.103$). However, there was no impact of the type of interview on participation rates.
Conclusion. – The results are discussed for future research.

Mots clés :
Conseil téléphonique
Cancer colorectal
Dépistage
Entretien motivationnel
Observance

RÉSUMÉ

Introduction. – La participation au dépistage organisé du cancer colorectal garantit le coût-efficacité du programme. Il est néanmoins prouvé que la stratégie d'invitation postale ne rend pas compte d'un taux acceptable au regard des objectifs fixés.
Objectif. – L'étude randomisée contrôlée testait l'apport d'un entretien téléphonique personnalisé pour amener les 50 à 74 ans à pratiquer un test de dépistage du cancer colorectal.
Méthode. – Deux stratégies téléphoniques ont été comparées. La première testait un conseil individualisé assisté par ordinateur (Costanza et al., 2005). La seconde était basée sur un entretien motivationnel (Miller & Rollnick, 2006). Au final, 49 972 personnes ont été affectées par randomisation au sein du groupe témoin (GC) et des groupes conseil individualisé (CI) et entretien motivationnel (EM) téléphoniques.
Résultats. – Un simple appel doublait la participation par protocole (19,2 % > 9,2 % ; $p < .001$; $r = .131$; $OR = 2{,}374$) et la triplait lorsque l'entretien était abouti (30,4 % > 9,2 % ; $p < .001$; $r = .219$; $OR = 4{,}321$). En intention de traiter, le bénéfice de l'action téléphonique restait encore supérieur au courrier (10 % > 9,2 % ; $p < .01$; $r = .014$; $OR = 1{,}103$). Il n'y avait toutefois aucun impact du type d'entretien sur le pourcentage de tests réalisés.
Conclusion. – Les résultats sont discutés et mis en perspective.

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1. Introduction

In terms of incidence, colorectal cancer is the third most common cancer in men and the second in women, with 1.2 million new cases worldwide and 608,700 deaths each year (Jemal et al., 2011). In Europe, colorectal cancer accounts for 212,000 deaths per year and is the second most fatal type of cancer (Ferlay, Parkin, & Steliarova-Foucher, 2010). In France, colorectal cancer accounts for 37,000 new cases and approximately 17,000 deaths each year. It is the third most common cancer in terms of incidence and the second in terms of mortality.

Colorectal cancer screening in France is intended for 50- to 74-year-old people with medium risk of colorectal cancer. The program is based on a biennial fecal occult blood test (Hemoccult®). Regular screening allows early detection of the disease, leading to a cure rate of 90% and to a mortality rate of 15% (Hewitson, Glasziou, Watson, Towler, & Irwig, 2008; Lindholm, Brevinge, & Haglind, 2008). Early detection helps to relieve the particularly high financial burden of digestive cancers (INCa, 2007) by making the hospitalization of a significant number of patients more effective (ORSAL, 2013). Therefore, the program represents a twofold public health challenge in terms of the participants themselves and healthcare expenditure (Renaud, Com-Ruelle, & Lucas-Gabrielli, 2008). To be cost-effective, the program depends on high participation rates (Lejeune et al., 2004). For instance, the French Cancer Plans 2009–2013 and 2014–2019 set a target goal of 60% participation. To reach this rate, a postal request followed by subsequent reminders were sent to potential participants. While a participation rate of 33.8% was obtained in 2009–2010, the national uptake only reached 31% of paticipation with this method in 2012–2013 (InVS, 2013). Reminders and standard mail incentives are usually used in public health and prevention campaigns. Nevertheless, there is evidence that standard mailing campaigns are less effective than an individualized approach to prompt individuals to participate (Hewitson et al., 2011; Rakowski et al., 1998).

To meet this challenge, tailored methods such as phone call interventions are being developed in addition to the standard postal approach. Phone calls are reportedly more effective (Rimer & Lipscomb, 2000) and cost-effective (Majowicz et al., 2004) than letters owing to the direct verbal exchange between the healthcare professional and the beneficiary (Holden et al., 2010). Indeed, it is thought that tailored phone counseling is two-fold more efficient than standard mailing (Prochaska et al., 2001). Telephone counseling should therefore increase the efficacy of colorectal screening (Legler et al., 2002).

The current randomized controlled study had two main purposes and two secondary objectives. The first main purpose was to compare the effectiveness of tailored telephone interviewing with a standard postal cancer awareness campaign. The second main purpose was to compare two phone counseling methods, namely computer-assisted Individualized Counseling (IC) and Motivational Interviewing (MI). The secondary objectives were to determine factors governing participation rates and to estimate the cost-effectiveness of the telephone intervention.

1.1. Computer-assisted individualized counseling

Computer-assisted individualized counseling (IC) is a tailored form of counseling guided by the Computer-Assisted Telephone Interview (CATI) system. It combines health educational and transtheoretical strategies of motivation (Prochaska & DiClemente, 1982). The transtheoretical approach was generated by comparing 18 of the main therapeutic styles and is almost unanimously supported by health professionals (Munro et al., 2007). The transtheoretical model (TTM) such as Weinstein's (1988) precaution adoption process model (PAPM) describes the main stages of change. These stages are detailed in Table 1.

Table 1
Stages of change according to a transtheoretical approach.

Prochaska and Diclemente's model (1982)		Weinstein's model (1988)	
Stage 1	Precontemplation	PAPM 1	Unaware
		PAPM 2	Unengaged
Stage 2	Contemplation	PAPM 3	Deciding, ambivalence
2nd exit	Relapse	PAPM 4	Decided not to change
Stage 3	Determination	PAPM 5	Decided to change, planning
Stage 4	Action	PAPM 6	Action
Stage 5	Maintenance	PAPM 7	Maintenance, lasting change

The telephone IC is achieved by placing the counselor in front of a prompter who gives him appropriate information about the participant. The interview can then be automated and computerized (Velicer & Prochaska, 1999) with a view to generalizing at lower cost to the prevention organizations. Moreover, it could be guided by a medical professional whose advice could be closely adhered to by the beneficiaries (Zajac et al., 2011). After assessing the participant's PAPM or TTM stage, the health professional gives him/her information and advice tailored to him/her needs and resources at time t (Marshall & Biddle, 2001; Trauth, Ling, Weissfeld, Schoen, & Hayran, 2003). Costanza et al. (2005) have shown that computer-assisted IC was more efficient than the standardized mail protocol by increasing observance in organized colorectal cancer screening. Computer-assisted IC is usually more efficient than the postal campaigns commonly used by the organized cancer screening bodies (Champion et al., 2003, 2007; Crane, Leakey, Ehrsam, Rimer, & Warnecke, 2000; Lipkus, Rimer, Halabi, & Strigo, 2000). Its efficacy was shown to be 30% higher than the classical approaches over the first 6 months and to be 56% higher at 2-years follow-up (Prochaska, Velicer, Fava, Rossi, & Tsoh, 2001). Indeed, IC could be a significant strategy for promoting target public awareness and providing personalized health guidance.

1.2. Telephone motivational interviewing

Motivational interviewing (MI) is described by its authors as a client-centered directive method aiming to increase intrinsic motivation to change by exploring and resolving ambivalence (Miller & Rollnick, 2006). In collaboration with the patient, the health professional explores the perceived benefits and limitations with being screened and not screened. The counselor calls upon individual intrinsic change processes and helps the patient to take an appropriate decision that matches his own motivation (Channon et al., 2003). However, the MI approach differs from traditional health counseling which arouses or maintains the patient's resistance (Butler et al., 1999). Indeed, classical "educational" materials may generate reactance with capable and autonomous "adults" (Patterson & Forgatch, 1985). MI is based on Carl Rogers' humanistic mind and promotes evocation (elaboration) instead of educating (counseling, informing). In other words, it allows the patient to expose his/her point of view instead of having it dictated to him/her. It enhances collaboration rather than confrontation and ensures the utmost respect for personal autonomy. By involving its beneficiaries in the informational and decisional process, MI is in line with the 2014–2019 Cancer Plan recommendations. It prevents negative therapeutic alliance (Miller et al., 1993) and enhances patient satisfaction (Baer et al., 2007; Channon et al., 2007). Several meta-analyses have suggested that it is more efficient than traditional education counseling (Hettema et al., 2005; Lundhal et al., 2010; Lundhal & Burke, 2009). Furthermore, its efficacy increases with the frequency and duration of counseling (Rubak, Sandbaek, Lauritzen, & Christensen, 2005). The MI can also be conducted by telephone