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Revue d'Épidémiologie et de Santé Publique 65 (2017) 17–28
Revue d'Épidémiologie et de Santé Publique
Epidemiology and Public Health

Original article

suppl. Informations

Tailored telephone counselling to increase participation of underusers in a population-based colorectal cancer-screening programme with faecal occult blood test: A randomized controlled trial

Conseil téléphonique personnalisé pour augmenter la participation à un programme de dépistage organisé du cancer colorectal par recherche de sang occulte dans les selles : un essai contrôlé randomisé

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Received 15 January 2016; accepted 21 June 2016
Available online 11 January 2017

Abstract

Background. – Despite the involvement of general practitioners, the mailing of several recall letters and of the faecal occult blood test (FOBT) kit, the uptake remains insufficient in the French colorectal cancer-screening programme. Some studies have demonstrated a greater efficacy of tailored telephone counselling over usual care, untailored invitation mailing and FOBT kit mailing. We evaluated the feasibility and the effectiveness of telephone counselling on participation in the population-based FOBT colorectal cancer-screening programme implemented in Alsace (France).

Methods. – Underusers were randomized into a control group with untailored invitation and FOBT kit mailing ($n = 19{,}756$) and two intervention groups for either a computer-assisted telephone interview ($n = 9367$), system for tailored promotion of colorectal cancer screening, or a telephone-based motivational interview ($n = 9374$).

Results. – Only 5691 (19.9%) people were actually counseled, so that there was no difference in participation between the intervention groups taken together (13.9%, 95% confidence interval [CI] [13.5–14.4]) and the control group (13.9%, 95% CI [13.4–14.4]) ($P = 1.0$) in intent-to-treat analysis. However, in per-protocol analysis, participation was significantly higher in the two intervention groups than in the control group (12.9%, 95% CI [12.6–13.2]) ($P < 0.01$), with no difference between computer-assisted telephone interview (24.6%, 95% CI [22.7–26.4]) and motivational interview (23.6%, 95% CI [21.8–25.4]) ($P = 0.44$).

Conclusion. – There was no difference of effectiveness between tailored telephone counselling and untailored invitation and FOBT kit mailing on participation of underusers in an organized population-based colorectal cancer screening programme. A greater efficacy of telephone counselling, around twice that of invitation and FOBT kit mailing, was observed only in people who could actually be counseled, without difference between computer-assisted telephone interview and motivational interview. However, technical failures hampered telephone counselling, so that there was no difference in intent-to-treat analysis. The rate of technical success of telephone interviews should be evaluated, and enhanced if insufficient, before implementation of telephone counselling in population-based cancer screening programmes.

Keywords: Colorectal neoplasms/prevention & control; Early detection of cancer/methods; Occult blood; Telephone; Patient education as topic; Counselling; Motivational interviewing

Abbreviations: CATI, computer-assisted telephone interview; CI, confidence interval; CRC, colorectal cancer; EDI, European Deprivation Index; gFOBT, guaiac-based faecal occult blood test; GP, general practitioner; INSEE, French National Institute for Statistics and Economic Studies; ITT, intent-to-treat; MI, motivational interview; OR, odds ratio; PAPM, Precaution Adoption Process Model; RCT, randomized controlled trial; SD, standard deviation.

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http://dx.doi.org/10.1016/j.respe.2016.06.336
0398-7620/

Résumé

Position du problème. – La participation dans le programme français de dépistage organisé du cancer colorectal reste insuffisante malgré l'implication des médecins généralistes, et l'envoi postal de plusieurs relances et du test de recherche de sang occulte dans les selles. Plusieurs études ont montré que le conseil téléphonique personnalisé était plus efficace que les soins habituels, l'invitation par courrier standardisé et l'envoi postal du test de dépistage. Le but de cette étude était d'évaluer la faisabilité et l'efficacité du conseil téléphonique sur la participation au programme de dépistage du cancer colorectal organisé en Alsace (France).

Méthodes. – Un échantillon de personnes non dépistées a été randomisé en un groupe contrôle invité par courrier de relance standardisé accompagné du test de recherche de sang occulte dans les selles ($n = 19\,756$) et en deux groupes intervention téléphonique, l'un bénéficiant d'un conseil simple par entretien téléphonique assisté par ordinateur ($n = 9367$), l'autre d'un entretien motivationnel ($n = 9374$).

Résultats. – Seules 5691 (19,9 %) personnes ont effectivement bénéficié d'un conseil téléphonique, si bien qu'en analyse en intention de traiter aucune différence de participation n'a été observée entre les groupes intervention téléphonique réunis (13,9 %, intervalle de confiance [IC] 95 % [13,5–14,4]) et le groupe témoin (13,9 %, IC 95 % [13,4–14,4]) ($p = 1,0$). Cependant, en analyse per-protocole, la participation était significativement plus importante dans les deux groupes intervention que dans le groupe contrôle (12,9 %, IC 95 % [12,6–13,2]) ($p < 0,01$), sans différence significative entre conseil simple (24,6 %, IC 95 % [22,7–26,4]) et entretien motivationnel (23,6 %, IC 95 % [21,8–25,4]) ($p = 0,44$).

Conclusion. – Il n'y avait pas de différence entre conseil téléphonique personnalisé et courrier standardisé accompagné du test de dépistage sur la participation au dépistage du cancer colorectal. Une plus grande efficacité du conseil téléphonique, le double de celle de l'envoi postal, n'était observée que chez les personnes effectivement conseillées par téléphone, sans différence entre conseil simple et entretien motivationnel. Les personnes étant difficiles à joindre, la participation n'augmentait pas significativement en intention de traiter. Le taux de succès technique des entretiens téléphoniques devrait être évalué, et amélioré si insuffisant, avant d'instaurer le conseil téléphonique dans un programme de dépistage organisé des cancers.

Mots clés : Cancer colorectal/prévention ; Détection précoce du cancer/méthodes ; Dépistage ; Sang occulte ; Téléphone ; Éducation du patient ; Entretien motivationnel

1. Introduction

Colorectal cancer (CRC) is the second leading cause of cancer death in Europe and the United States [1,2]. Four randomized controlled trials (RCTs) have demonstrated the efficacy of screening with guaiac-based faecal occult blood test (gFOBT) on CRC mortality [3]. France thus launched an organized gFOBT-based CRC screening programme for average risk people aged 50–74 years in a few pilot areas in 2003 that was extended to the whole country in 2009.

Organized screening programmes depend on high participation rates to be effective and efficient. Despite the involvement of general practitioners (GPs), the mailing of several recall letters and of the gFOBT kit, the uptake remains insufficient in France, estimated at 29.8% in 2013–2014 [4]. There is strong evidence that one-on-one education, either in person or by telephone, is effective in increasing screening for breast and cervical cancers, and sufficient evidence that it is effective in increasing CRC screening with FOBT [5]. Several studies demonstrated that a tailored intervention is significantly more efficacious than an untailored intervention and that a recommendation made by a health professional is the most powerful extrinsic factor to induce adhesion to screening [5,6]. Tailoring was defined by Kreuter and Skinner as follows "Any combination of strategies and information intended to reach one specific person, based on characteristics that are unique to that person, related to the outcome of interest, and derived from an individual assessment" [7]. Most studies on CRC screening have found a modestly greater efficacy of tailored telephone counselling over usual care [8–10], untailored invitation mailing [11,12] and FOBT kit mailing [13–18]. However, all these studies had small sample sizes and/or were performed in defined settings, all but one in the USA. Whether their findings are generalizable is questionable. Moreover, telephone-based interventions to promote CRC screening vary from simple interventions as automated reminder calls [19,20] to complex interventions such as telephone-based navigation [21]. Computer-assisted telephone interview (CATI) and motivational interview (MI) are tailored interventions of intermediate intensity [22,23]. A single study compared their efficacy on participation in CRC screening [9].

We hypothesized that tailored telephone counselling calls would increase gFOBT screening adherence of underusers in an organized CRC screening programme. We conducted a RCT to evaluate the feasibility and the effectiveness of telephone counselling to increase the uptake in the population-based gFOBT CRC screening programme implemented in Alsace as part of the French national programme, and to compare the effectiveness of two telephone-based interventions using either a CATI system or a MI.

2. Methods

We compared gFOBT use subsequent to one of three interventions targeting non-responders who had received two mailed invitations for a CRC screening: (1) usual care, i.e. direct mailing of the gFOBT kit along with another untailored recall letter (second recall); (2) direct mailing of the gFOBT kit based on the result of a telephone counselling call using a CATI