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NATIONAL COLORECTAL CANCER EARLY DETECTION PROGRAM AND COLORECTAL CANCER EARLY DETECTION MODEL INTEGRATED IN THE PRACTICE OF FAMILY MEDICINE: OUR COMPARISON

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Summary

To present the response rate results of the Colorectal Cancer Early Detection Program that is part of the project *Colorectal Cancer Early Detection Model Integrated in the Practice of Family Medicine*, carried out by the Department of Family Medicine of the Osijek University School of Medicine and the Osijek Health Center in the Osijek-Baranja County. Those response rate results were compared with those obtained by the National Colorectal Cancer Early Detection Program. The Project's strategy is based on the central role of family physicians in implementing early cancer detection programs. The Project started in the year 2007, and by the end of 2009, a total of 1850 cards on an occult fecal blood test (FOBT) were delivered to subjects from two target groups (aged 45-49 and 75-79), i.e., to age groups not covered by the National Colorectal Cancer Early Detection Program. A relatively high response rate of 1083 tested subjects (58.5%) was recorded for both target groups, which is an advantage in comparison with the relatively low response rate of 19.9% obtained by the end of 2010 by the Croatian National Program. The Project revealed positive FOBT results in 54 subjects (4.9%). Of these subjects, 28 underwent colonoscopies, and two had colon cancer detected. The results indicate that family physicians should actively participate in the National Colorectal Cancer Early Detection Program.

KEYWORDS: *colorectal cancer, early detection program, strategies, national program*

INTRODUCTION

Cancer is, by its incidence and mortality, a global health problem. In European countries, cancer is the second leading cause of death after cardiovascular diseases. Colorectal cancer is one of the fastest-growing types of cancer in Western countries. It is suggested to be closely associated with modern lifestyles, particularly unhealthy diets rich in saturated fat and poor in vegetables and fruits, as well as lack of exercise. At present, colorectal cancer ranks second or third among malignant tumors in European countries concerning both incidence and mortality rate, for example, in 2020, with nearly 520000 new cases and 245000 deaths(1-5). Data on cancer incidence and cancer mortality in Croatia can be found in publications of the Croatian Institute of Public Health (HZJZ)(6).

Due to a significant increase in the number of new cancer cases in Croatia, in 2003, the Croatian Oncology Society suggested drafting a Proposal for a National Program of Cancer Prevention and Early Detection in Croatia for breast, uterus, colorectal, and prostate cancers. That same year, the National Health Council also expressed its support for drafting a national program for the most common cancers(7). The Ministry of Health appointed a group of experts to draft a Proposal for the National Program, which was completed in 2006 and published the same year by the Croatian Oncology Society, Ministry of Health and Social Welfare, Croatian Institute of Public Health

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and Croatian Health Insurance Fund published in 2006(8,9).

In 2003, the Council of the EU gave recommendations for fighting cancer, and all EU member states were invited to adopt and start implementing national programs for cancer prevention and early detection. The tests proven useful and recommended by the EU include breast cancer mammography screening in women aged 50-69 years, by quality assurance instructions, fecal occult blood tests (FOBT) for colorectal cancer screening in adults aged 50-74 years, and Pap tests for cervical cancer screening in women that needs to start between the ages of 20 and 30 years(10).

By decision of the Government of the Republic of Croatia, in 2006, the National Program of Early Breast Cancer Detection started with mammography screening of women aged 50 through 69 years(11), while towards the end of 2007, the National Program of Early Colorectal Cancer Detection started for men and women aged 50 to 74 years, with testing for fecal occult blood (FOBT) (12). The national colorectal cancer program is implemented centrally, with all implementing procedures being coordinated by the Croatian Institute of Public Health (HZJZ) and its branch offices(12).

At the same time, from 2007 to 2009, a Ministry of Science, Education, and Sports project entitled *Colorectal Cancer Early Detection Model Integrated in the Practice of Family Medicine* was implemented at the Osijek Health Center. It aimed to assess the acceptability and applicability of the integrated model for the early detection of breast, cervical, colorectal, and prostate cancers that are based on the model of active and systematic work by family physicians, taking into account the opinions of the population and the views of physicians(13).

This work compares the response rate to the National Colorectal Cancer Early Detection Program implemented from 2007 to 2009 with the response to the colorectal cancer project *Colorectal Cancer Early Detection Model Integrated in the Practice of Family Medicine* implemented over the same period.

RESULTS

The National Colorectal Cancer Early Detection Program started towards the end of 2007. The screening protocol, defined by the National Program, includes FOBT check-ups every second year for men and women aged 50-74 at average risk. Persons testing positive (3-5% are expected) are referred to colonoscopy at the nearest endoscopic unit. Based on widely obtained data, 10-15% of them will be diagnosed as colorectal cancer and 30-40% as adenomas. The Program's main objectives are to achieve a screening coverage of at least 60%, reverse the low proportion of diagnosed preclinical and localized cancers, and reduce mortality by 15% five years after the Program's start. Specific goals are oriented towards improvements in diagnostics and treatment and standardization of protocols(12).

According to the Croatian Institute of Public Health data, by the end of 2010, 1056694 invitation letters and tests were mailed out to persons born between 1933 and 1945 and between 1952 and 1957 as part of the National Colorectal Cancer Early Detection Program. The response rate could have been higher based on the total number of envelopes or tests mailed back (only 209763 persons responded, or 19.9%). Positive FOBT results were detected in 12823 persons (7.1%), 8,472 persons underwent colonoscopy examinations, and 472 persons (5.7%) were diagnosed with colon cancer diagnosed(13,14).

The Colorectal Cancer Early Detection Model Integrated in the Practice of Family Medicine project started in 2008-2009 with colorectal cancer screening at 23 family medicine offices in the Osijek Region(15). It was a cross-sectional study, and the research sample was based on 27000 subjects from both urban and rural areas of Osijek, who consented to participate in the Project. Defined target groups encompassed two age groups: 45-49 and 75-79 years, i.e., age groups not covered by the *central* Croatian National Screening Program.

Participant subjects were randomly selected with a computer program from the subscribed family physician patients who were without data or evidence of having diseases of the gastrointestinal system. Family physicians contacted patients from the target groups by phone and sent them invitation letters with three test cards, a brochure on how to use them, and a questionnaire on the risk factors. The physicians also provided instructions on correctly applying the test cards and anything else the patients might have been interested in. The physicians also analyzed the returned test

cards or sent them for analysis to the medical biochemical laboratory of the Osijek Health Center, afterward recording the analysis results. Patients with positive test results were referred for further diagnostics by colonoscopy.

To the subjects aged 45-49 and 75-79 years, 1850 cards on occult fecal blood (FOBT) were mailed, with 1083 subjects (58.5%) returning tests for further analysis. Positive FOBT results were recorded in 54 or 4.9% of cases. Twenty-eight subjects with positive FOBT results underwent colonoscopies. Two (7.1 %) had colorectal cancer detected in the 75-79 age group(15,16).

DISCUSSION

Worldwide experiences implementing national programs for early colorectal cancer detection show that the best results are achieved when programs are centralized and standardized. The majority of EU member states, 24) adopted the National Cancer Control Plans (NCCPs) by 2013. NCCPs are public health programs designed to ensure the centrally managed implementation and monitoring of evidence-based strategies for prevention, early detection, diagnosis, treatment, rehabilitation, palliation, and research. NCCPs include a central agency with an established call/recall system ensuring equal access to screening for all people from the target population, evaluation of tests in a central laboratory facility, and centrally compiled and evaluated data(17-21). The main problem with all national programs is finding a way to increase screening rates.

Experience from Finland, where the highest participation rate of about 70% was achieved, clearly indicates that healthcare services, when arranged primarily at the local level, as well as a strong public orientation of the healthcare system, may achieve a substantial positive impact on the implementation of early cancer detection programs(22,23). However, even those advocating this approach point out that some technical and professional support to family physicians has to be ensured, e.g., by establishing a reminder system, standardizing the preventive policy, or reinforcing physicians' use of evidence-based guidelines and improving doctor-patient communication skills(24-28).

In the first two years of its implementation, the National Colorectal Cancer Early Detection Program, which started in 2007, recorded a relatively low screening response rate of 19.9% (13,14). On the other hand, the response rate of persons invited to undergo the FOBT as part of the project *Colorectal Cancer Early Detection Model Integrated in the Practice of Family Medicine* was 56.5%, which points to the importance of including family physicians in the National CRC Early Detection Program. Other projects of this type were not implemented in the remainder of Croatia. The Osijek Health Center and family medicine practitioners gave proposals in their publications relating to all elements of the Program, including how to improve the early detection of the most common cancers, particularly colorectal cancer, in the Osijek region and Croatia(29-34). The Croatian Institute of Public Health has significantly improved the implementation of the Program; a web application was introduced that tracks response rates and possibly enhances them, and motivational procedures for family physicians and community health nurses aimed at early CRC detection, which can increase response rates and improve the quality of implementation of CRC programs, were introduced in diagnostic and therapeutic procedures(35).

Family physicians should become actively and directly involved in this professionally and organizationally improved national-level Program that has been accepted at the community level and thus contribute to increasing screening response rates(24-28). To improve project results, project organizers, the Croatian Institute of Public Health and the Croatian Health Insurance Fund, should find a model fostering more active participation of family physicians that will ensure higher program response rates, these being one of the preconditions for successful prevention and early detection of colorectal cancer in Croatia. What will further benefit the Program is the Ministry of Health's announcement that the target population will be expanded and that a new highly sensitive and specific screening test will be introduced(36).

CONCLUSIONS

The National Colorectal Cancer Early Detection Program organized through the Croatian Institute of Public Health has been well accepted by the local communities despite recording low response rates.

The Croatian Institute of Public Health, Croatian Health Insurance Fund, and family medicine should agree on all rational elements to ensure a more successful program implementation.

Including family medicine in screening is expected to increase response rates to between 40% and 60%, which is one of the goals set by the European Commission.

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Sažetak

NACIONALNI PROGRAM RANOG OTKRIVANJA RAKA DEBELOG CRIJEVA I MODEL RANOG OTKRIVANJA RAKA DEBELOG CRIJEVA INTEGRIRAN U PRAKSU LIJEČNIKA OBITELJSKE MEDICINE: USPOREDBA

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U radu su predstavljeni rezultati programa ranog otkrivanja raka debelog crijeva, koji je dio projekta „Model ranog otkrivanja raka integriran u ordinaciju liječnika obiteljske medicine" (2007. do 2009. g.), koji je provela Katedra za obiteljsku medicinu Medicinskog fakulteta Sveučilišta u Osijeku na području Osječko-baranjske županije. Strategija projekta temeljila se na središnjoj ulozi liječnika obiteljske medicine u provedbi programa ranog otkrivanja raka. Rezultati su uspoređeni s hrvatskim Nacionalim programom ranog otkrivanja raka debelog crijeva. Do kraja 2009. godine dostavljeno je ukupno 1850 testova na okultno fekalno krvarenje (FOBT) ispitanicima iz dviju ciljnih skupina (45-49. i 75-79. godina), odnosno dobnim skupinama koje nisu obuhvaćene Nacionalnim programom ranog otkrivanja raka debelog crijeva. Za obje dobne skupine zabilježen je relativno visok odaziv od 1083 testirana ispitanika (58,5%). To je u prednosti u odnosu na Nacionalni program ranog otkrivanja raka, gdje je završno s krajem 2010. pozvano 1056694 ispitanika, a zabilježen je razmjerno niski odaziv od 19.9% ispitanika. U projektu pozitivan FOBT utvrđen je kod 54 ispitanika (4,9%). Kod 28 pozitivnih ispitanika na FOBT učinjena je je kolonoskopiji, a kod dvoje je otkriven rak debelog crijeva. Rezultati ukazuju na važnost aktivnog uključivanja obiteljske medicine u Nacionalni program za rak debelog crijeva.

KLJUČNE RIJEČI: *rak debelog crijeva, program ranog otkrivanja raka, nacionalni program*