Clinical decisions and impact on perspectives of cancer patients in primary care

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Abstract

Introduction: early diagnosis of breast, cervical, lung and colorectal cancer can help reduce cancer death rates.

Objective: to evaluate the impact of ADC for cancer prevention, with or without HTDC, on cancer prevention in primary care.

Methods: A randomized, three-arm, cross-sectional, survey-based study was conducted in primary care clinics.

Results: No significant differences were found between the study arms in the individual DCS items.

Conclusions: ADC decision support intervention, with or without HTDC, was not associated with differences in perceptions of personalized cancer prevention.

Keywords: cancer, primary care, general practitioners, prevention, source perception: DeCS

Resumen

Introducción: el diagnóstico temprano de cáncer de mama, cervical, pulmonar y colorrectal puede ayudar a reducir las tasas de mortalidad del cáncer

Objetivo: evaluar el impacto de la ADC para la prevención del cáncer, con o sin HTDC, en la prevención del cáncer en atención primaria.

Método: Se realizó un estudio aleatorizado de tres brazos transversal basado en una encuesta en clínicas de atención primaria.

Resultados: No se encontraron diferencias significativas entre los brazos del estudio en los ítems individuales de DCS.

Conclusiones: la intervención de ayuda para la toma de decisiones de ADC, con o sin HTDC, no se asoció con diferencias en las percepciones de la prevención personalizada del cáncer.

Palabras clave: cáncer, atención primaria, médicos generales, prevención, percepción fuente: DeCS

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Introduction

While overall cancer mortality rates have declined, the prevalence and lifetime risk of breast, cervical, colorectal, and lung cancers remain substantial, and screening rates are still inadequate. Breast and cervical cancer screening rates have generally declined in recent years, while colorectal cancer screening rates have increased (38 to 63%) over the same period, and the low lung cancer screening rate has remained the same at more than 3%[1].

There is strong evidence that early diagnosis of breast, cervical, lung (for qualifying current or former smokers), and colorectal cancers can help reduce mortality rates and cancer morbidity, even when adjusting for lead-time bias[2]. For example, low-dose CT scans (LDCT) for individuals with a smoking history of 30 packs per year or more have been shown to reduce lung cancer mortality rates by 20%. Unfortunately, many times patients forget about LDCT screening, mostly because they may not understand the information they are given, they don't think the test is worthwhile, some barriers prevent them from getting tested, they are worried about getting a false positive, or they do not want to know[3]. About 75% of patients cite bowel preparation and fear as the main reasons for not wanting the procedure when it comes to undergoing a colonoscopy procedure. Mammograms, a mainstay of breast cancer screening, have benefits and risks, including false positives, false negatives, radiation and unnecessary surgery. Cervical cancer may have the most benign screening method, the Pap test, and an effective human papillomavirus (HPV) vaccine that has struggled to gain widespread acceptance [4].

Personalized clinical decision support (CDS) that includes cancer screening and prevention recommendations for patients and primary care providers (PAPs) in primary care encounters can increase screening rates and improve prevention efforts[5]. For example, there is some evidence that ADCs, in the form of simple prompts or reminders, can improve mammography rates and increase the use of other cancer prevention services[6]. However, an earlier systematic review showed relatively small observed increases in preventive service related to prompts and reminders. While a more recent systematic review suggests that some ADC designs and workflows facilitate use more than others, people still have an incomplete understanding of whether ADCs go beyond simple prompts and reminders and can further improve the delivery of cancer preventive care[7].

The objective of the present cross-sectional survey was to assess the impact of cancer prevention ADC, with or without a shared decision-making tool (HTDC), on patients' self-reported experiences and perceptions of the cancer prevention care they received at an initial primary care clinic visit.

Method

A cross-sectional survey-based study was conducted in primary care clinics in Ambato, a three-arm randomized clinical control type, to evaluate whether ADC alone or ADC plus HTDC can improve cancer preventive care compared to usual care in the control arm. Patients eligible for the cross-sectional cohort survey met the following criteria: age 18 to 75 years; visiting a study clinic during 4 months; for at least one primary cancer prevention (smoking cessation, referral for smoking cessation counseling, prescription of smoking cessation medications, HPV vaccine) or secondary cancer prevention (breast, colorectal, cervical, or lung cancer screening); not receiving hospice care; no active cancer (except nonmelanoma skin cancer) in the past year; and not pregnant. This study was approved by the Universidad Regional Autónoma de Los Andes (UNIANDES).

In the usual care arm of the study, clinics and their PAPs did not have access to ADC or ADC + HTDC. Participants included in the usual care arm of the study would have met ADC criteria if they had visited an intervention clinic.

The patient questionnaire included questions about patient demographics, whether or not a cancer screening and prevention option was discussed and what action was taken, discussions with physicians and care teams, whether or not their physician allocated sufficient time to discuss cancer prevention options, and other cancer prevention questions developed by the study team. The survey also included the 10-item low-literacy English version of the Decisional Conflict Scale (DCS), scored on a scale of 0 to 100. Demographic information included gender, age,

education, race, household composition, employment status, and household income.

Between October 2019 and January 2020, a paper survey was mailed to a randomly selected sample of patients in each study arm within 15 days of their study-defined index primary care visit. As this was an exploratory cross-sectional study, it was determined a priori that a sample size of about n = 100 in each study arm would be appropriate to understand the differences by the arm that budget could afford.

Only available data for each survey item were used. Responses to demographic and general health items were summarized for the entire sample and each arm of the study. Survey responses were aggregated and summarized by the group.

For all individual items, Fisher's exact test or chi-square was used to compare the distribution of responses in the usual care group with the distribution of responses and a combined group of the two intervention groups (ADC, ADC + HTDC) in 2 × 2 tables (comparisons between individual arms were also performed and selected significant results were reported). In addition, DCS scale scores were compared between study arms using t-tests and ANOVA. No adjustments were made for multiple comparisons. Database and statistical processing of the data were performed and analyzed in SPSS 26 statistical software (SPSS Inc., Chicago, IL, USA). Descriptive statistics were used for the results collection, presentation and interpretation.

Results

The surveys were mailed to 749 patients; six were returned with an incorrect address, and one respondent self-reported as ineligible. Of the remaining 742 eligible patients, 387 (52 %, response rate) completed the survey, 373 by mail, and 14 by telephone. Of these responders, 383 were eligible for at least one of the screening tests or interventions and were used as our analytic sample. In total, 18 % (n = 68) were eligible for breast cancer screening, 22 % (n = 83) for cervical cancer screening, 45 % (n = 171) for colorectal cancer screening, 17 % (n = 64) for lung cancer screening, 34 % (n = 132) for smoking cessation intervention, and 74 % for body mass index (BMI) (n = 286). Table 1 shows the characteristics of respondents by study arm. Seventy percent of respondents were female, and 96 % were white.

No significant differences were found between study arms in patient self-report on having enough time to discuss cancer prevention options, or how well PAPs explained the risks and benefits of cancer prevention options (Table 1). While 73% of respondents overall reported having enough time to discuss cancer prevention options with their PAP, 12% reported that cancer risks were not explained well.

Table 1. Respondents' perceptions of cancer prevention and screening discussions with their primary care providers.

			Intervention arms		
Elements of the survey	All arms	AH	ADC	ADC + HTDC	p
Did you have enough time to discuss cancer prevention options (breast cancer, colorectal cancer, lung cancer, cervical cancer, HPV vaccine, smoking cessation, weight control) with your provider?					
	(N = 286)	(N = 92)	(N = 102)	(N = 92)	0.40
Yes	208 (73)	64 (69)	75 (73)	69 (75)	
No	78 (27)	28 (31)	27 (27)	23 (25)	
How well did your provider explain the risks of the options available to you?					
	(N = 286)	(N = 92)	(N = 102)	(N = 92)	0.13
Very good	187 (65)	56 (61)	70 (69)	61 (66)	

something right	64 (22)	27 (29)	20 (20)	17 (19)	
not quite right	35 (12)	9 (10)	12 (12)	14 (15)	
How well did your provider explain the benefits of the option available to you?					
	(N = 283)	(N = 91)	(N = 101)	(N = 91)	0.18
Very good	182 (64)	56 (62)	69 (68)	57 (63)	
something right	70 (25)	28 (31)	20 (20)	22 (24)	
not quite right	31 (11)	7 (8)	12 (12)	12 (13)	

Source: statistical analysis. Data are n (%). Count data are shown. Percentages are rounded to the nearest percentage point. Percentages may not sum to 100% due to rounding. Statistical significance ($p < 0.05$) using the chi-square test of association (gl = 2) or the Freeman-Halton test. Comparisons are usual care (HA) combined with ADC and ADC + HTDC intervention arms.

Overall, 97% of respondents reported that their PAP usually or always explained things to them in a way that was easy to understand, and 80% reported that their care team always or usually talked with them about specific things to prevent disease. However, we found no significant differences between the study arms.

There were no significant differences between the usual care and combined intervention arms for prevention and screening discussions between patients and PAPs and decisions made. However, when the arms were compared separately, respondents in the ADC intervention arm had higher rates of reporting breast cancer prevention or screening than those in the ADC + HTDC intervention arm (Fisher, $p = 0.03$). In addition, respondents in the ADC intervention also had higher rates of reports of smoking cessation than respondents in the ADC + HTDC intervention arm (Fisher, $p = 0.01$).

In terms of decisions made by respondents who had discussions, the only significant difference between usual care and both intervention arms was that usual care respondents had significantly higher rates of reporting that they decided to quit smoking (Freeman-Halton, $p < 0.01$).

No significant differences were found between study arms on individual DCS items, all of which showed a low level of decisional conflict. However, 33% reported that they were unsure or did not know what cancer screening and prevention options were available. Overall, 36% were unsure or did not know the benefits of each available option, and 48% were unsure or did not know each option's risks and side effects.

Discussion

The survey of patients among those eligible to receive an ADC recommendation for primary and secondary cancer prevention and screening revealed few significant differences between the decision aid intervention arms and the usual care arm. Encouragingly, many patients in all study arms discussed preventive cancer care, smoking cessation, or weight management at their index visit[21].

Although most participants (73%) reported having enough time to talk about cancer preventive care, many previous studies have found that PAPs feel they often do not have enough time to talk about cancer prevention services in primary care[9,10]. This is a striking contrast to the patients in the survey, who reported that they generally had enough time to talk about cancer prevention. This asymmetric perception of the time needed to discuss preventive cancer care is of interest and may merit further exploration. Most patients (89%) reported that their PAPs explained the benefits of cancer prevention options well or somewhat well. However, many may not have chosen to participate in or schedule screening on the day of their visit, as suggested by the low percentage (28 %) of women eligible for cervical cancer screening who reported having a PAP test during

their visit. This may also be because they prefer to receive their Pap smear from an obstetrician/gynecologist or as part of a physical examination[11,12].

The study was limited because the respondents reflected the predominantly white patient population served by the healthcare system. More research is needed on ADC for cancer prevention and screening with patients from other racial and ethnic groups. The survey also asked patient respondents to recall a previous primary care clinic visit. Consequently, responses may be affected by nonresponse error and social desirability and recall biases. These biases were mitigated by surveying close to the appointment date and using unbiased language and noninductive questions[13]. However, there were no significant differences between responders and nonresponders because demographic survey data were unavailable for nonresponders[14,15].

The authors could not determine whether respondents from the intervention clinics received and were exposed to study materials from the ADC or HTDC components of the intervention. That is, the overall study was pragmatic, and not all PAPs followed the study protocol; therefore, it was not known whether patients received study materials. In addition, ADC impression rates varied widely between PAPs and clinics during the study, and these rates were low (average impression rate during the survey time = 53.75%) at the beginning of the intervention period. This is partly because (a) more than 50% of all patients with adult care visits were not up-to-date on one or more of the specific cancer preventive services, slowing clinic workflow; (b) clinic staff objected to the initial HTDC formats, which when printed required many printed pages; and (c) several printing errors were encountered, and the study team had to fix them as they arose[16, 17,18].

Patients received abbreviated versions of the HTDC during the time of this survey. Because of the small number of respondents who completed the survey by telephone (n = 14) compared with those who responded by mail (n = 373), the authors could not establish substantial differences between these two groups. The authors also did not account for multiple testing and performed simple unadjusted analyses. Because this article reported the results of an exploratory survey of patients, the authors did not report results based on models that controlled for possible differences at the clinical level, and all clinics were balanced before randomization[19,20,22].

Conclusions

Compared with usual care, ADC decision support intervention, with or without HTDC, was not associated with significant differences in perceptions of personalized cancer prevention and screening recommendations in respondents. However, the findings suggest that when PAPs discuss options for smoking cessation or weight management, many patients take the advice seriously and may decide to act.

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