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## Receipt of a survivorship care plan and self-reported health behaviors among cancer survivors

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### Abstract

**Purpose:** Our study aims to determine whether receipt of a written survivorship care plan (SCP) is associated with five self-reported health behaviors known to be correlated with positive long-term outcomes for cancer survivors: 1) attending a recent medical appointment, 2) exercise in the past month, 3) non-smoking status, 4) mammography in the past two years, and 5) up-to-date colorectal cancer screening.

**Methods:** In this secondary data analysis, we used data from the 2014 Behavioral Risk Factor Surveillance System (BRFSS) cancer survivorship module for 1,855 off-treatment cancer survivors. Multivariable logistic regression accounting for complex survey design was used to examine the association between SCP receipt and each of the five preventive health behaviors.

**Results:** Overall, 37% (669/1,855) of survivors reported receiving a written survivorship care plan. In the logistic regression models adjusted for sociodemographic and disease-related factors, SCP receipt was associated with having a recent medical appointment (OR (95% CI): 2.81 (1.27–6.22)), exercise in the past month (1.78 (1.20–2.63)), non-smoking status (2.27 (1.26–4.12)), and

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This article does not contain any studies with animals performed by any of the authors.

**Informed consent:** Informed consent was obtained from all individual participants included in the study.

**Data availability:** The datasets analyzed during the current study are available in the Center for Disease Control and Prevention repository, <https://www.cdc.gov/brfss/index.html>.

up-to-date mammography (2.25 (1.30–3.88)). Receipt of a survivorship care plan was not associated with colorectal cancer screening (1.2 (0.73–2.03)).

**Conclusions:** This study provides preliminary evidence that SCPs may be helpful in promoting health behaviors among cancer survivors, including attending a regular medical appointment, mammography screening, exercise, and abstinence from smoking. Additionally, the low rates of SCP provision highlights an important missed opportunity and area for intervention.

**Implications for Cancer Survivors:** Providing survivors with SCPs may help to increase important health behaviors.

### Keywords

Survivorship care plan; cancer screening; health behaviors; smoking; exercise

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### Introduction

In 2016 there were an estimated 15.5 million cancer survivors living in the United States and this number is expected to increase to 20.3 million by 2026 [1]. While advances in cancer screening and treatment have led to vast improvements in survival, cancer survivors now face an increased risk of cancer recurrence and second primary cancers [2]. Additionally, cancer survivors experience many other late and long-term effects of cancer and its treatment including increased risk for cardiovascular disease, [3,4] chronic health conditions, [5] and psychological effects [6].

Given these increased health risks, maintaining a healthy lifestyle is an important factor in promoting positive outcomes for cancer survivors. As such, smoking is an important modifiable risk factor. Among cancer survivors aged 18–44 years in the United States, approximately one third are current smokers – as compared to 21% of the general U.S. population of that age [7]. Additionally, despite the fact that physical activity is demonstrated to have positive impacts on quality of life, cancer recurrence, and overall prognosis, in 2015 approximately 38% of cancer survivors reported no physical activity in their leisure time [8]. Cancer survivors are recommended to have regular follow up care in order to detect recurrence or secondary malignancies, and to assess and address any late effects of cancer treatment [2,9]. However, rates of follow-up care and associated cancer screenings are suboptimal [10,11]. While cancer survivors have higher rates of mammography and colorectal cancer screening than those without history of cancer, still many in these high-risk groups remain unscreened [12].

Beginning with the Institute of Medicine’s (IOM) seminal report on cancer survivorship in 2006, survivorship care plans (SCP) have been recommended as a tool to improve health outcomes of cancer survivors [2]. The report recommended that, at the end of active cancer treatment, every survivor should be given a written treatment summary (including elements such as diagnostic test results, tumor characteristics, dates of treatment initiation and completion, types, and doses of treatment received) and a plan for follow-up care (including information on possible late effects of treatment, recommended cancer screening schedules, and referrals to specific follow-up care providers) [2]. In the past decade, many other

agencies and practice organizations including the American Cancer Society and the American Society of Clinical Oncology developed templates and advocate for the increased use of SCPs [13,14]. Furthermore, the American College of Surgeons now requires oncology practices to provide survivorship care plans to at least 50% of eligible patients who have completed treatment in order to meet its Commission on Cancer accreditation [15,16]. Despite widespread advocacy for SCPs, they are still underutilized in practice, with less than a quarter of oncologists reporting that they always or almost always provide a SCP, and only about a third of survivors reporting receipt of a written SCP [17,18].

While the evidence linking SCPs to survivor health outcomes is still lacking [19,20], several recent studies document the positive impact of receipt of SCPs. A 2015 study found that receipt of a SCP is associated with improved patient-reported quality of care and patient-centered communication [21]. Additionally, among survivors of adolescent and young adult cancer, receipt of a SCP was associated with lower odds of unmet information needs [17]. Only one known study [22] has explored the impact of survivorship care planning on preventive health behaviors among cancer survivors. This study found that having a written treatment and instructions for follow-up care was positively associated with having a physical check-up exam but not with other preventive services. However, this study was conducted among patients diagnosed with cancer in 2003–2005, prior the 2006 IOM report recommending survivorship care planning [22]. No known study has explored the impact of survivorship care planning on preventive health behaviors in survivors diagnosed in 2006 or after. Thus, the aim of this study is to determine whether receipt of a SCP is associated with five self-reported health behaviors known to be correlated with positive long-term outcomes for survivors: 1) attending a medical check-up in the past two years, 2) exercise in the past month, 3) non-smoking status, 4) mammography screening in the past two years, and 5) up-to-date colorectal cancer screening.

## Materials and Methods

### Data and Participants

For this analysis, we use data from the 2014 Behavioral Risk Factor Surveillance System (BRFSS) [23]. The BRFSS is an annually conducted, nationally representative telephone survey aimed at measuring behavioral risk factors within the adult household population of the US and its territories. It is a collaboration of the US states, territories, and the Centers of Disease Control and Prevention (CDC). Each year, data are collected on a common core questionnaire including sociodemographic characteristics, cancer screenings, and health behaviors, among others, as well as optional modules, which are elected on a state-by-state basis at the states' discretion. The CDC develops the questions for both the core component and optional modules so that they are uniform across states. Many questions are taken from established national surveys, including the National Health Interview Survey. In 2014, the CDC supported 19 optional modules, one of which focused on cancer survivorship. The cancer survivorship optional module was elected and fielded by seven states in 2014 (Alaska, Iowa, Minnesota, Mississippi, Nebraska, Ohio, and Wisconsin) [23]. Survivorship questions included cancer treatment, long-term effects, and survivorship care planning.

The response rate for BRFSS is calculated using standards set by the American Association of Public Opinion Research and for 2014 the median response rate for all states was 47.0% (range: 25.1– 60.1). Median response rates for the seven states that used the optional survivorship was 52.0% (range: 41.0–55.6). Further information about sampling and response rates are available at: [https://www.cdc.gov/brfss/annual\\_data/2014/pdf/2014\\_dqr.pdf](https://www.cdc.gov/brfss/annual_data/2014/pdf/2014_dqr.pdf). Overall, 464,664 adults responded to the 2014 BRFSS. Of these, 64,202 respondents lived in the seven states that fielded the optional cancer survivorship module. A total of 5,583 respondents had a history of cancer in those states. For our analysis, we excluded respondents who were still undergoing cancer treatment at the time of the survey, who were diagnosed before the age of 18, and who had a type of skin cancer other than melanoma, leading to a total of 4,264 off treatment cancer survivors. As survivorship care plans have only been recommended since 2006, we limited our analysis to survivors who had been diagnosed with cancer within the last eight years prior to the survey (2006 to 2014), resulting in 1,855 cancer survivors.

## Measures

**Survivorship Care Plan (SCP) Receipt.**—The key independent variable of interest for this analysis was receipt of survivorship care plan after treatment. Following the IOM guidelines for a SCP, we defined this as cancer survivors who received both a written treatment summary and written instructions for routine cancer check-ups from a doctor, nurse, or other health professional [2]. This variable was created from three BRFSS items. Participants were coded as having a written treatment summary if they answered affirmatively to the question “Did any doctor, nurse, or other health professional EVER give you a written summary of all the cancer treatments that you received?”. Participants were coded as having received written instructions for follow-up care if they measured affirmatively to both of the following questions: “Have you EVER received instructions from a doctor, nurse, or other health professional about where you should return or who you should see for routine cancer check-ups after completing treatment for cancer?” and “Were these instructions written down or printed on paper for you?”. Participants who received both a written treatment summary and a written plan for follow-up care were then categorized as having received a survivorship care plan.

**Outcomes.**—For the purpose of this analysis, we examined the effect of receipt of an SCP on five preventive health behaviors. First, having a recent medical check-up was measured with the BRFSS core component question: “About how long has it been since you last visited a doctor for a routine checkup? [A routine checkup is a general physical exam, not an exam for a specific injury, illness, or condition.]”. Respondents who reported having an exam within the past year or within the past two years were coded as having a recent medical check-up.

Second, whether or not a respondent exercised within the last month was measured with the BRFSS core component question, “During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?” We coded all respondents who answered affirmatively as having exercised in the past month.

Third, we determined smoking status using two BRFSS core component questions. First, respondents were asked, “Have you smoked at least 100 cigarettes in your entire life?” Those who answered no were categorized as never smokers. Those who responded yes were asked, “Do you now smoke cigarettes every day, some days, or not at all?” We categorized those who responded “not at all” as former smokers. We defined currently not smoking as those who were either former smokers or never smokers.

Fourth, mammography within the two years prior to the survey was measured with a calculated variable provided for BRFSS which included women ages 40 and older who responded “Yes” to the question “Have you ever had a mammogram” and “Within the past year” or “Within the past 2 years” to the question “How long has it been since your last mammogram?”.

Finally, we used a calculated variable provided by BRFSS for respondent aged 5–75 who have fully met the U.S. Preventive Services Task Force recommendations for colorectal cancer screening. This includes having a blood stool test in the past year, having a sigmoidoscopy in the past 5 years, or having a colonoscopy in the past 10 years.

### Statistical Analysis

All analyses were conducted using SAS 9.4 (Cary, NC) using the SURVEY procedures to account for complex survey design. We used strata, primary sampling units, and probability sampling weights provided in the BRFSS. We present descriptive statistics for survivor sociodemographic in Table 1. Multivariable logistic regression accounting for complex survey design were used to examine the association between receiving a survivorship care plan and each of the five preventive health behaviors: had a recent medical checkup, exercised in the past month, currently not smoking, had a mammography within the last 2 years, and is up to date on colorectal cancer screening. Logistic regression models for having a recent medical checkup, exercise, and not smoking were adjusted for age group (18–39, 40–49, 50–64, 65–75, and 76+ years), sex (male vs. female), race/ethnicity (non-Hispanic White, non-Hispanic Black, Hispanic, other), educational attainment (less than high school, high school or GED, more than high school), health insurance status (currently uninsured vs. insured), age at cancer diagnosis (18–39 years vs. 40+ years), years since diagnosis (continuous variable), cancer type (breast, cervical, colorectal, prostate, melanoma, other cancers), and current health care provider (surgeon, general practice, oncology, other). The logistic regression model for mammography in the past two years was adjusted for the same variables, but excludes sex, prostate cancer, and age group 18–39 as this outcome is only available for women aged 40 years and older. The logistic regression model for colorectal cancer screening excludes age groups 18–39, 40–49, and 76+ as well as age at diagnosis as this outcome variable was only available for survey participants between the ages of 50 and 75 and those diagnosed at the lower age group would thus not be eligible for colorectal cancer screening at the time of survey. We present the full adjusted models with odds ratios (OR) and 95% confidence intervals (CI) for each outcome and SCP receipt as well as all covariates in Table 2. We used a predetermined  $\alpha=0.05$  to determine statistical significance for all analyses.

## Results

Cancer survivors included in the study (N = 1,855; Table 1) were majority female (53%), white (89%) and aged 55 years or older at the time of the survey (79.6%). Almost all respondents were insured (96%) and just over half had more than a high school education (53%). The cancer history of respondents varied with the most common cancer diagnoses being melanoma (20%) and breast (18%), and survivors were an average of 4 years post-diagnosis at the time of the survey (standard deviation = 0.11 years). Most survivors reported that a general practice physician provided the majority of their current healthcare (63%). The majority of survivors positively endorsed the five preventive health behaviors of interest: 91% had a medical check-up in the past two years; 72% exercised in the past month; 84% were non-smokers; 81% of eligible survivors had a mammography in the past two years; and 81% of eligible survivors were up to date on colorectal cancer screening.

Overall, 37% (669/1,855) of survivors reported receiving a written survivorship care plan. In bivariate analyses, receipt of a SCP was associated with higher levels of educational attainment, being currently uninsured, cancer type (i.e. having a cervical cancer diagnosis), current provider type (i.e. seeing an oncologist or surgeon for majority of care), exercise in the past month, and up-to-date mammography ( $p < 0.05$ ; data not shown). In the logistic regression models adjusted for sociodemographic and cancer history factors (Table 2), receipt of a SCP was significantly associated with having a recent medical appointment (OR (95% CI): 2.81 (1.27–6.22)), exercise in the past month (1.78 (1.20–2.63)), non-smoking status (2.27 (1.26–4.12)), and mammography in the past two years (2.25 (1.30–3.88)). SCP receipt was not associated with colorectal cancer screening (1.2 (0.73–2.03)). Racial differences were found in several health behaviors, with black survivors being significantly more likely to have attended a recent medical checkup (5.6 (1.04–30.48)), but less likely to have exercised in the past month (0.5 (0.22–0.97)) or to report having a mammography in the past two years (0.3 (0.09–0.82)). Additionally, Hispanic survivors were less likely to be up-to-date on colorectal cancer screening (0.1 (0.15–0.71)).

## Discussion

In our analysis, we found that only 37% of survivors reported receiving a survivorship care plan. This finding that SCPs are under-utilized is consistent with other studies among U.S. cancer survivors, which report SCP provision ranging from 30–35% [17,24]. Together these studies indicate that many survivors do not have, or do not recall having, a written plan to guide their survivorship care. SCPs are widely perceived to be important by oncologists and other providers [25,26]. However, significant barriers exist that limit their utilization. Several studies have found that provider-perceived barriers to providing SCPs include: time needed to compile information for SCPs, lack of organizational resources, difficulty of collecting needed data from electronic medical records, and lack of reimbursement for the time spent preparing SCPs [27–30]. Organizational and policy changes may be needed to see significant improvements in SCP uptake.

Similar to the previous CanCORS study [22], we found that survivors who reported receiving a SCP were more likely to have a general medical checkup in the past two years.

While recommended survivorship care spans far beyond a general medical checkup, having an appointment with a doctor is a minimal first step as this is where referrals to other specialists are given, essentially serving as a gatekeeper for other important preventive health screenings, including cancer screening. Accordingly, female survivors aged 40 and older who reported having a SCP were more likely to report mammography in the past two years. Colorectal cancer screening, however, was not associated with receipt of a SCP. This lack of association may have been due to colorectal cancer screening only being due every 10 years for those who had a colonoscopy as opposed to every two years for mammography, and thus may be less dependent on care planning.

Beyond cancer screening behaviors, survivors who reported receiving a SCP were more likely to exercise and be non-smokers. While the BRFSS survey item does not allow for exploration about the specifics of the SCPs, it may be that having both written recommendations as well as provider recommendations helps to promote these healthy behaviors. Regardless, any increase in exercise and decrease in smoking is an important public health advancement, especially among cancer survivors who are at a greater risk for cardiovascular-related chronic health issues [4,31] - risks that are known to be exacerbated by obesity and smoking.

Survivorship care plan templates are widely and freely available online. Several of the most prominent include Journey Forward ([www.journeyforward.org](http://www.journeyforward.org)), OncoLife (<https://oncolife.oncolink.org/>), and the American Society of Clinical Oncology's care plan (<https://www.cancer.net/survivorship>). Each of these sites has options for both providers and survivors and instructions for use. Despite widespread availability, little research has been done to determine which elements of SCPs are most useful and effective, nor when is the best time to deliver plans or how to ensure that they are used by primary care providers as survivors transition out of oncology care [19,20]. As use of SCPs, increases following new requirements for accreditation, comparative effectiveness studies will be needed to determine the most impactful elements of SCPs and when and how they should be delivered. Additionally, our secondary analysis does not allow us to explore the mechanisms by which receipt of a survivorship care plan impacts health outcomes. It may be that the act of planning itself motivates survivors to adhere to recommended health behaviors, or it may be that the actual written document acts as a reminder and guidepost for follow-up care. Additionally, the cross-sectional nature of BRFSS data does not allow for test of causality. For example, survivors who are generally more active in their healthcare may be more likely to remember receiving the SCP. Future studies, including those using qualitative methods, should explore how survivorship care plans are being used in practice and the ways in which survivors report that either the act of planning with their physician or the SCP document itself, encourages adherence to healthy behaviors.

This study has several additional limitations. First, because the cancer survivorship module was optional and states self-selected to field it, rather than states being chosen for representativeness, the findings may not be generalizable to all states, but are representative of the seven states included. The seven states trend rural, however there is diversity in city size, including the fourteenth largest city in the US by population (Columbus, OH). Additionally, the BRFSS sample was largely insured (96%) and thus both the rates of

preventive health behavior performance as well as their association with SCP may not generalize to those without insurance who may face additional barriers to accessing preventive care regardless of survivorship care planning. Second, some of the BRFSS items are not nuanced enough for understanding the context of the associations. For example, the questions used to assess SCP receipt did not allow for details about the plans. Although our measure of SCP is bolstered by requiring that both the treatment summary and follow up care plan be written, we do not know if the information in these plans was sufficient to meet the requirements of a SCP or if and how the SCP was used by providers to guide subsequent survivorship care. Additionally, the question about a recent medical check-up does not give the context of the provider or setting, and the question about exercise is not sufficient to understand whether the survivors are meeting guideline recommendations for the amount and intensity of physical activity.

Findings from this study provide preliminary evidence that SCPs may be helpful in promoting health behaviors among cancer survivors, including attending a regular medical appointment, mammography screening, exercise, and abstinence from smoking. Prospective studies should follow up on these results to better understand how SCPs are used by survivors and providers, and how they may promote healthy behaviors. Additionally, our study's finding that only 37% of survivors were given SCPs highlights an important missed opportunity and area for intervention.

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**Table 1:**

Survivor characteristics BRFSS 2014 (n=1855), adjusted for complex survey design

	N	% of sample (95% CI)
<b>Sociodemographics</b>		
Age at survey completion		
22–39 years	95	10.6 (7.3–13.8)
40–49 years	104	9.9 (7.0–12.8)
50–64 years	585	34.3 (30.4–38.2)
65–75 years	648	27.0 (23.7–30.3)
76 years or older	423	18.3 (15.0–21.6)
Sex		
Male	839	47.1 (42.8–51.3)
Female	1016	52.9 (48.7–57.1)
Race/Ethnicity		
White	1707	89.4 (86.3–92.4)
Black	67	6.0 (3.4–8.6)
Hispanic	19	1.3 (0.2–2.3)
Other	62	3.4 (1.8–5.0)
Educational attainment		
Less than high school	123	11.1 (7.9–25.3)
High school or GED	654	36.1 (32.1–40.4)
More than high school	1078	52.7 (48.4–57.0)
Health Insurance		
Currently has insurance	1809	96.1 (94.0–98.1)
Currently uninsured	46	3.9 (1.9–6.0)
<b>Cancer history</b>		
Age at cancer diagnosis		
18–39 years	127	13.3 (9.7–16.9)
40 years or older	1728	86.7 (83.1–90.3)
Years since diagnosis (mean)		3.98 years (3.78–4.19)
Type of cancer		
Breast	351	18.4 (15.1–21.6)
Cervical	55	5.8 (3.4–8.3)
Colorectal	129	6.3 (4.5–8.1)
Melanoma	401	20.4 (17.1–23.6)
Prostate	249	14.1 (11.1–17.2)
Other	670	35.0 (30.9–39.0)
Current provider type		
Surgeon	91	4.7 (3.2–6.2)
General Practice	1275	63.0 (58.8–67.2)

	N	% of sample (95% CI)
Oncology	164	12.1 (9.0–15.2)
Other	325	20.2 (16.7–23.8)
<b>Preventive health behaviors</b>		
Recent medical checkup		
Yes	1688	90.7 (88.1–93.3)
No	167	9.3 (6.7–11.9)
Exercise in the past month		
Yes	1341	71.9 (68.0–75.9)
No	514	28.1 (24.1–32.0)
Not smoking		
Yes	1612	83.5 (80.0–87.0)
No	243	9.3 (6.7–11.9)
Mammography up to date		
Yes	731	81.2 (76.6–85.9)
No	200	18.8 (14.1–23.4)
Colorectal cancer screening up to date		
Yes	933	80.9 (77–84.8)
No	260	19.1 (15.2–23.0)

Percentages and confidence intervals are adjusted for BRFSS-provided sampling weights

For women ages 40 and older, only; n=931 For ages 50–75, only; n=1193

SCP=Survivorship care plan

**Table 2:**

Full adjusted logistic regression models of preventive health behaviors among cancer survivors (n=1855), adjusted for complex survey design

	Preventive Health Behaviors				
	Recent medical checkup	Exercise in the past month	Not smoking	Mammography in past 2 years	Colorectal cancer screening up to date
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
<b>Survivorship care plan</b>					
Receipt of SCP	<b>2.81 (1.27–6.22)</b>	<b>1.78 (1.20–2.63)</b>	<b>2.27 (1.26–4.12)</b>	<b>2.25 (1.30–3.88)</b>	1.21 (0.73–2.03)
<b>Sociodemographics</b>					
Age at survey completion					
22–39 years	<b>0.06 (0.01–0.57)</b>	0.68 (.08–6.17)	0.36 (0.05–2.82)	---	---
40–49 years	0.49 (0.19–1.26)	1.30 (0.49–3.46)	2.03 (0.60–6.79)	<b>0.32 (0.13–0.79)</b>	---
50–64 years	Ref	Ref	Ref	Ref	Ref
65–75 years	1.89 (0.81–4.43)	<b>0.59 (0.37–0.94)</b>	1.59 (0.90–2.83)	0.93 (0.48–1.79)	<b>1.87 (1.10–3.17)</b>
76 years or older	1.87 (0.85–4.08)	<b>0.53 (0.32–0.87)</b>	<b>6.25 (2.38–16.40)</b>	<b>0.38 (0.19–0.75)</b>	---
Sex					
Male	0.89 (0.43–1.86)	1.50 (0.95–2.38)	1.33 (0.71–2.47)	---	0.61 (0.34–1.12)
Female	Ref	Ref	Ref	---	Ref
Race/Ethnicity					
White	Ref	Ref	In Ref	Ref	Ref
Black	<b>5.63 (1.04–30.48)</b>	<b>0.46 (0.22–0.97)</b>	1.66 (0.57–4.80)	<b>0.27 (0.09–0.82)</b>	1.20 (0.42–3.45)
Hispanic	6.46 (0.61–68.29)	1.32 (0.24–7.20)	10.61 (0.90–128.04)	2.48 (0.22–28.22)	<b>0.10 (0.02–0.71)</b>
Other	<b>0.17 (0.06–0.51)</b>	1.19 (0.36–3.99)	0.28 (0.07–1.16)	0.21 (0.03–1.35)	1.34 (0.32–5.61)
Educational attainment					
Less than high school	0.87 (0.32–2.37)	0.76 (0.40–1.47)	0.56 (0.23–1.38)	0.64 (0.25–1.63)	<b>0.35 (0.15–0.82)</b>
High school or GED	Ref	Ref	Ref	Ref	Ref
More than high school	1.68 (0.88–3.20)	<b>1.82 (1.20–2.77)</b>	<b>1.88 (1.08–3.26)</b>	0.61 (0.35–1.07)	0.97 (0.56–1.68)
Currently uninsured	<b>0.14 (0.04–0.48)</b>	1.39 (0.35–5.52)	1.38 (0.24–7.86)	0.40 (0.03–4.69)	<b>0.11 (0.03–0.51)</b>
<b>Cancer history</b>					
Age at cancer diagnosis					
18–39 years	4.07 (0.57–29.37)	1.99 (0.30–13.22)	1.42 (0.23–8.89)	1.18 (0.29–4.81)	---
40 years or older	Ref	Ref	Ref	Ref	---
Years since diagnosis	0.97 (0.86–1.08)	1.08 (0.99–1.18)	0.99 (0.89–1.10)	1.04 (0.93–1.16)	<b>1.17 (1.06–1.29)</b>
Type of cancer					
Breast	1.21 (0.40–3.69)	1.66 (0.80–3.45)	1.76 (0.71–4.39)	0.76 (0.35–1.63)	1.19 (0.58–2.43)
Cervical	0.53 (0.10–2.75)	0.42 (0.12–1.49)	0.48 (0.14–1.70)	1.93 (0.25–14.89)	0.92 (0.11–7.47)
Colorectal	0.98 (0.33–2.86)	1.61 (0.74–3.50)	1.64 (0.49–5.53)	0.68 (0.22–2.08)	<b>9.93 (1.90–51.90)</b>

	Preventive Health Behaviors				
	Recent medical checkup	Exercise in the past month	Not smoking	Mammography in past 2 years	Colorectal cancer screening up to date
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Prostate	0.65 (0.26–1.61)	1.25 (0.57–2.75)	0.66 (0.24–1.80)	---	2.06 (0.72–5.85)
Melanoma	Ref	Ref	Ref	Ref	Ref
Other	0.71 (0.30–1.65)	0.87 (0.51–1.47)	0.86 (0.43–1.72)	0.51 (0.24–1.06)	<b>2.57 (1.34–4.91)</b>
Current provider type					
Surgeon	2.39 (0.48–11.91)	0.78 (0.38–1.63)	2.09 (0.55–7.88)	1.66 (0.55–4.97)	<b>0.27 (0.12–0.64)</b>
General Practice	Ref	Ref	Ref	Ref	Ref
Oncology	2.00 (0.50–8.04)	0.95 (0.46–1.92)	0.53 (0.22–1.26)	1.23 (0.50–3.00)	0.68 (0.30–1.54)
Other	<b>0.39 (0.22–0.68)</b>	0.86 (0.51–1.45)	0.98 (0.53–1.84)	<b>0.42 (0.23–0.78)</b>	<b>0.44 (0.24–0.83)</b>

SCP=survivorship care plan; Ref= Reference

**Bold text** indicates statistically significant result.

For women ages 40 and older, only; n=931

For ages 50–75, only; n=1193