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Putting It Off: Family Breast Cancer History and Women's Retirement Planning

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Abstract

Cancer diagnoses have significant consequences that extend beyond the individual to family members. Our research builds prior research in this area by examining how a family history of breast cancer affects women's retirement preparations. Using the stress process model, we generate and test four hypotheses. We find consistent evidence that women who have a mother and/or sister who had a recent breast cancer diagnosis are significantly less likely to engage in retirement preparation activities than are their counterparts who have no such family history. Moreover, the same effect is not observed when a first-degree relative has had a different cancer diagnosis. These findings suggest that the secondary stressors experienced by close female relatives of breast cancer victims may be manifesting themselves in behaviors and attitudes that have long-run consequences for their quality of life.

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(PAA Session Chair: Please note that we will conduct two focus groups on family cancer history and retirement planning in October 2013. The results of these focus groups will be incorporated in to this manuscript so that we have both a quantitative and qualitative analysis by the time the PAA conference occurs.)

INTRODUCTION

Cancer diagnoses have significant consequences that extend beyond the individual to family members (Baider and Kaplan De-Nour 1988; Baider, Cooper and Kaplan De-Nour 1996; Metcalfe et al. 2013; Raveis and Pretter 2005). These impacts, which are especially strong for primary caregivers, tend to start in the psychological and emotional domain, for example, worrying about the health of the affected relative, and/or experiencing distress regarding what the diagnosis portends for the family member's own future health. These "primary stressors" are typically followed by secondary stressors that involve changes in the way people spend their time, allocate their money, and feel about their social support networks (Gaugler et al. 2008, 2009). Three common secondary stressors are changing daily schedules to allow for caregiving (including reduction in hours of paid work) , helping to pay health care costs that are not covered by insurance, and feeling abandoned by family members and friends (Kim, Wellisch and Spillers 2008; Teschendorf et al. 2007; Vodermaier and Stanton 2012).

Our research extends the literature on the family effects of cancer diagnoses by adding a potential secondary stressor to those typically examined. We study the relationship between family cancer history and activities undertaken as part of financial preparation for retirement. We focus on retirement preparation for two reasons. First, by virtually all accounts, significant portions of Americans are facing a retirement savings shortfall (Saad-Lessler and Ghilarducci 2012; VanDerhei et al. 2012; Yuh 2011) – a phenomenon that has sparked research to identify the reasons behind this under-saving.

Second, retirement preparation is most effective when it is started early in a person's work life. Thus, life events that interfere with retirement preparation when a person is relatively young can have negative, long-term effects. While some research has examined how an individual's own health affects retirement planning decisions, (1995; Financial 2013; Lum and Lightfoot 2003; Noone, Alpass and Stephens 2010; Rosen and Wu 2004; Sherwood et al. 2008; Smith 1999) to the best of our knowledge, there are no studies that have been devoted to understanding what role a family history of a specific disease – in this case, breast cancer – might play in retarding the financial aspects of retirement preparation.

In seeking to link family health history to retirement planning, we examine healthy women with a family history of breast cancer (i.e., those who have not themselves had a breast cancer diagnosis). We do so for three reasons. First, research has shown that healthy women with a family history of breast cancer have an elevated risk of developing the disease themselves (Bevier, Sundquist and Hemminki 2012; Bouchardy et al. 2011; Colditz et al. 2012; Hemminki and Czene 2002; Kerber and O'Brien 2005; Offit and Brown 1994; Pharoah et al. 1997; Rawal, Bertelsen and Olsen 2006). Discussions of the importance of this familial link have been in the media (2013a; 2013b), and it may be that such knowledge influences a woman's assessment of when she will retire and what her financial needs are likely to be in retirement. Second, the trend toward more outpatient care means that most breast cancer patients rely extensively on family members and friends for care during the months or years that they undergo treatment (Hanly et al. 2013; Kaufman, O'Mara and Schrauf 2012; Kim and Given 2008; Romito et al. 2013), and women are most often the primary caregivers when a family member falls ill with cancer (Kaufman et al. 2012; Kim et al. 2008; National Cancer Institute 2013). These caregiving responsibilities often come at midlife when reducing paid employment or exiting the labor force may have dire consequences for lifetime earnings and retirement savings (Young and Newman 2003). Finally, even if a daughter or sister is not the primary caregiver for a relative with breast cancer, worry

about a grandmother, aunt, mother, or sister who has had a breast cancer diagnosis may limit the attention a woman is able to give to instrumental activities of daily living such as managing finances and planning for the future.

In sum, we investigate whether a family history of breast cancer creates an environment that serves to limit the retirement planning activities of some women. In the research that follows, we test this proposition using unique data on 467 women – some of whom have one or more first and/or second degree relatives who have had a breast cancer diagnosis and others of whom have not.

LITERATURE

There is a large body of research on cancer caregiving most of which focuses on the primary stressors experienced by caregivers, that is, psychological and emotional distress. (See Stenberg, Ruland, and Miaskowski for a review (Stenberg, Ruland and Miaskowski 2010).) For instance, in one qualitative study, the researchers identify two potentially relevant themes voiced by cancer caregivers: the psychological challenge of juggling multiple roles, and feelings of being overwhelmed and unable to attend to many routine tasks (Teschendorf et al. 2007). Female caregivers and employed caregivers both have an elevated risk of experiencing such psychological distress (Kim and Given 2008). Studies that have focused on adult daughters caring for mothers with breast cancer, however, have found the relationships to be less consistently negative (Kim et al. 2007; Vodermaier and Stanton 2012).

The primary stressors associated with a family member's cancer diagnosis can be experienced by caregivers and non-caregivers alike. Psychological stress appears to result from an increase in an individual's subjective assessment of her/his cancer risk. In one study, unaffected adult daughters whose mothers had been diagnosed with breast cancer reported a heightened sense of personal vulnerability and disease inevitability (Raveis and Pretter 2005). Researchers have also found that unaffected women whose mothers or sisters died from breast cancer have significantly higher levels of

breast cancer-specific intrusive thoughts and avoidance (Erblich, Bovbjerg and Valdimarsdottir 2000). Interestingly, there is evidence that women whose sisters have had a breast cancer diagnosis typically overestimate their own breast cancer risk by more than 200 percent (Metcalf et al. 2013). In light of the psychological distress and risk perception findings, it is not surprising that women with a family history of breast cancer generally follow mammography screening recommendations more closely than otherwise similar women who do not have a family history (Haber, Ahmed and Pekovic 2012; Polednak, Lane and Burg 1991; Ponce et al. 2012). But, beyond seeking regular breast cancer screenings, we know little about how a family history of breast cancer affects other behaviors, such as retirement preparations.

Research by Gaugler and his colleagues demonstrates the spillover from primary to secondary stressors for cancer caregivers (Gaugler et al. 2008). This research provides confirmation for a stress process model (Pearlin et al. 1990) whereby the primary emotional stressors associated with caregiving responsibilities (e.g., feelings of role overload from caregiving) are hypothesized to create secondary stressors in family relationships, time use, and finances. Secondary financial stressors are measured in terms of perception difficulty in paying for care, financial strain on the family, and the need to stop working in order to provide care. The stronger a person's perceptions of role overload, the higher their reported level of financial stress.

The findings of Gaugler et al., with respect to the economic effects of caregiving are consistent with those from other studies (Baldwin 2012; Bradley et al. 2008; Hanly et al. 2013; Young and Newman 2003). According to one review, one or more caregivers give up a job to provide end-of-life cancer care in 10-40 percent of cases (Hanratty et al. 2007). Whereas studies of the economic effects of a cancer family diagnosis have focused on caregivers, there is reason to believe that these financial impacts extend, at least in part, to non-caregivers. In fact, to the extent that some family members donate time

while others donate money to a cancer sufferer, the financial impacts may be greater for non-caregivers.

Whereas the model employed by Gaugler et al. acknowledges the potential existence of secondary consequences of a family cancer diagnosis, it conceptualizes these stressors in a limited, short-term way. The researchers find that feelings of role overload (a primary stressor) are associated with multiple secondary stressors: perceptions of a forced change in a caregiver's daily schedule, feelings of abandonment by other family members, and financial stress. Moreover, each of these secondary stressors reinforces each other.

As important as the findings of Gaugler et al. are, the authors fail to follow the implication of their findings, namely, that short-term secondary stressors (especially changes in time allocation) can have long-term effects. For example, changes in time allocation due to a mother's or sister's cancer diagnosis could result in less time being devoted to maintaining a healthy relationship with one's spouse or children. The long-term result could be increased risk of marital problems and divorce. Similarly, more time devoted to interacting with a mother or sister with a cancer diagnosis – or just more time devoted to worrying them – could mean less time available to prepare nutritious meals. This could have the long-term result of increasing the incidence of overweight or obesity within one's family. In the current paper, we seek to better understand a longer-term secondary stressor that is financial nature – less attention devoted to retirement preparation.

METHODS

Using the stress process model, we generate four hypotheses that we will test. First, we posit that a family history of breast cancer will generate secondary stressors for women that will be manifested in less active planning for retirement when compared to women who have no family cancer history. Second, we posit that the gendered nature of breast cancer coupled with the genetic risk

component will combine to create more secondary stressors for women in affected families than do other types of family cancer histories. Third, we will test the proposition that secondary stress responses will be a function of the woman's genetic and psycho-social distance from her affected relative. For instance, a woman whose grandmother has had a breast cancer diagnosis will be less likely to be drawn into caregiving activities than an otherwise similar woman whose mother has been diagnosed with breast cancer. Similarly, the former woman is also less likely than the latter woman to worry about her own increased cancer risk and what it implies for her future health. As a consequence, we hypothesize that a history of breast cancer in second-degree relatives will have less impact on retirement planning than will a history of breast cancer among first-degree relatives. Finally, we posit that the time since diagnosis will also be linked to the presence/absence of retirement planning activities. With time, both primary and secondary stressors should subside. This suggests that women with an affected relative who has been recently diagnosed should be more remiss in attending to retirement planning activities than an otherwise similar woman whose relative was diagnosed with breast cancer years earlier.

Unique data from two sources are linked to test the hypotheses posed in the current study. Information on retirement planning comes from [UNIVERSITY] Retirement Planning Survey (URPS). The URPS was designed to assess [UNIVERSITY] employees' retirement planning knowledge, priorities, perceptions, and behaviors in the aftermath of the economic recession of 2008-09. All [UNIVERSITY] benefits-eligible employees with valid email addresses (N=9,747) were invited to participate online in the URPS during October 2009. Publicity efforts and participation incentives resulted in 3,000 people submitting completed surveys for an overall cooperation rate of 32.1%. Sixty-five percent of the 3,000 URPS respondents are female and the median respondent age is 44 years. As a point of comparison, as of October 2009, 58% of all university employees were female and the median employee age was

approximately 42. Thus, the survey respondents generally reflect the larger population of university benefits-eligible employees in terms of gender and age.

Detailed family health histories come from the [STATE] Population Database (PDB). The PDB is a shared research resource located at the [UNIVERSITY]. For 35 years, researchers have used this resource to study health issues within a family context. The central component of PDB is an extensive set of [STATE] family histories, in which family members are linked to demographic (i.e., birth, death, marriage, and divorce records) and medical information. Central to the current investigation, the PDB includes state-wide medical information on cancer diagnoses and causes of death. Most families living in [STATE] are represented in the PDB, and individuals in the same family pedigrees are linked to one another with their familial relationship identified.

[STATE] death certificates (1904-2009) and the U.S. Social Security Death Index are linked to the PDB and provide the needed information on age and cause of death (if the death occurred in [STATE]) for the first- and second-degree relatives of the URPS respondents. In addition, diagnoses of cancer for both living and deceased URPS family members come from the [STATE] Cancer Registry (1966-2009) that has been linked to PDB.

In accordance with the University's Institutional Review Board, consent for linkage was requested of the 2,795 respondents who provided contact information when completing the URPS survey. Of those, 81 declined. Of the 2,714 who agreed to be part of the study, 2,669 respondents linked to one or more data sources in the PDB, for a linkage rate of 98.3%. Linkage of the URPS survey data to PDB records was done by the Pedigree and Population Resource (PPR) staff at the [NAME] Cancer Institute and a de-identified file was returned to the researchers for analysis. For the purposes of the current analyses, the sample is further restricted to those URPS respondents who: (1) link to both a biological mother and father in PDB, (N=1,009), (2) are female (N=677), age 30-61 (N=485), have never had a cancer diagnosis (N=469), and who have no missing data on the variables in question (N=467). Age restrictions are placed

on the sample in order to focus on those women who are in the age range where they should be actively planning for retirement. Respondents who have had a cancer diagnosis are excluded so that we can assess family cancer history effects separate from a respondent's own cancer diagnosis.

RESULTS

The typical female in our study is 45 years old, attended college, is married, and has two children. She is currently employed and her total household income in 2009 (the year of the survey) was \$78,000. She thinks there is a good chance (i.e., 67% chance) that she will live to age 85 or older, but she is not a financial risk taker, and would prefer receiving a hypothetical prize of \$1,000 today rather than waiting one year to claim a prize of \$1,100. She is not planning to support anyone other than herself and her husband during retirement and her primary retirement plan is a defined contribution plan. Approximately 11% of these women have lost one parent before the parent had reached age 60 and for 17% of the respondents, both parents were deceased at the time of the survey. All in all, the typical profile of these female survey respondents is one where you would anticipate a large fraction would be actively engaged in retirement planning. That is, they are middle aged, well-educated, relatively affluent, with a defined contribution retirement plan, and the expectation that they will live long lives.

Table 1 provides descriptive information on the five retirement preparation measures that we use as indicators of secondary financial stressors associated with a family history of breast cancer. Previous research has shown that all of these factors are important in predicting the quality of retirement planning (Ervin, Faulk and Smolira 2009; Kramer 2012; Lusardi and Mitchell 2007a, 2011; Marsden, Zick and Mayer 2011; Mayer, Zick and Marsden 2011). In absolute terms, it would appear that these women have not done many of the recommended retirement preparation activities nor do they view themselves as being financially knowledgeable or being confident that they will have sufficient funds to live comfortably during retirement – despite the fact that they are employed, generally well educated,

and live in households with upper middle-class incomes. Yet, in relative terms, these women do not look that different from the larger population in terms of these questions. Specifically, 50% of these women are very or somewhat confident of having enough money to live comfortably during retirement while a 2009 nationally representative poll of men and women using the same question found 54% were very or somewhat confident.(EBRI 2009) In that same national survey, 44% of (male and female) respondents reported having ever calculated their financial needs for retirement and 25% reported having seen a financial advisor in the past year (while our question asked about the past two years). This sample of women rate their own financial knowledge lower than what was reported on another 2009 national survey that asked the same question (39.61% versus 58% reporting a grade of A or B) (Harris Interactive 2009) of both men and women, which is not surprising given that women are typically less financially knowledgeable than their male counterparts.

[Insert Table 1 Here]

As noted earlier, the sample of women used in the analysis is restricted to those women where both parents are in the PDB. On average, each woman has 5 first-degree relatives who link to her in PDB with the number ranging from 2-15. The average number of second-degree relatives who link to the respondents is 9, and the range was 0-27. (Three individuals had both a biological mother and father in PDB but no second-degree relatives in the database.)

While the sample has been restricted to exclude any women who have had a cancer diagnosis, Table 2 reveals that many of these women have one or more family members identified in PDB who have had cancer. Slightly more than 10 percent have had a mother and/or sister who have had breast cancer. In addition, 19 percent have at least one grandmother or aunt who has had a breast cancer diagnosis. Not surprisingly, when we sum all other cancer diagnoses, we find that approximately one-quarter of the sample has had at least one first-degree relative diagnosed with cancer while the corresponding percentage for second-degree relatives is significantly higher at approximately 45%.

[Insert Table 2 Here]

Cross-tabulations of the cancer history variables (not shown in Table 2) reveal that 150 of the women have no first or second degree relatives who have had a cancer diagnosis, 136 women have one or more first and/or second-degree relatives who have had breast cancer and 276 have one or more first- and/or second-degree relatives who have had a cancer diagnosis other than breast cancer. There are 41 women who have a family history of breast cancer with no other cancer diagnoses among first- or second-degree family members, and 191 women who have family members who have had other cancer diagnoses but no first- or second-degree relative who has had a breast cancer diagnosis. Finally, 85 of the women have a family history of both breast cancer and other cancers. In sum, the sample of 467 women represents a diverse group in terms of affected relatives.

There are a variety of ways that a family cancer history can be measured. We estimated our multivariate logistic regression models using several alternatives: (1) percentages of first-degree and second degree relatives who have had breast (other) cancer diagnoses, (2) relative-specific dummy variables that measure if a mother, father, grandparent, or sibling has had a breast (other) cancer diagnosis, and (3) counts of first-degree and second-degree relatives who have had a breast (other) cancer diagnosis while also controlling for number of relatives in the models. In the latter case, we use a dummy variable when measuring first-degree affected relatives (1=one or more first degree relatives, 0=none) because of the small number of respondents who have had more than one parent or sibling who had a cancer diagnosis (see Table 2). The results do not vary across these alternative specifications. We elect to present the results that make use of counts while controlling for number of relatives because of the ease of interpretation associated with the estimated odds ratios. Results for the alternative specifications are available from the authors upon request. All diagnoses and death record

information are limited to cancer events reported through September 2009, the month before the URPS survey was administered.

Breast cancer, basal squamous carcinoma, and cervical cancer in situ are excluded from the counts of other cancers. We exclude breast cancer because we count it separately. Basal squamous carcinoma and cervical cancer in situ are excluded because they are not reported to the [STATE] Cancer Registry. We group together other cancers because of their relatively low site-specific incidence rates for family members of the women included in our empirical work.

Table 3 shows the estimated odds ratios for the family history variables obtained from multivariate logistic regressions estimated with PROC LOGISTIC in SAS 9.3. Collinearity diagnostics reveal no signs of multicollinearity among the independent variables as measured by condition indices and proportion of variation explained. As noted in the table, these estimates are obtained controlling for the socioeconomic, demographic, and attitudinal variables used in more standard retirement preparation research (Hershey and Mowen 2000; Jacobs-Lawson and Hershey 2005; Lusardi and Mitchell 2005, 2007b; Mayer et al. 2011; Noone et al. 2010).

[Insert Table 3 Here]

The results across the five different estimating equations are very consistent and reveal support for our hypotheses. Specifically, we observe that for four of the five equations, women with one or more first-degree relatives who have had a breast cancer diagnosis are significantly less likely to have engaged in the recommended retirement preparation activities than otherwise similar women whose mothers and/or sisters have not had a breast cancer diagnosis. The one exception is the retirement confidence equation where the estimated odds ratio is consistent with the hypothesis but where it does not reach the conventional level of statistical significance ($p=.066$). Statistically significant odds ratios in

the other four equations suggest that women whose mothers and/or sisters who have had cancer are 59% less likely to have seen a financial advisor in the past two years, 57% less likely to regularly consult more than one financial resource, 61% less likely to grade her own financial knowledge as an “A” or “B,” and 69% less likely to have calculated her retirement needs, compared to otherwise similar women whose mothers and/or sisters have not had such a diagnosis. All of these findings affirm our first hypothesis that a family history of breast cancer will generate secondary stressors that will be manifest in less active retirement planning.

We do not observe a similar effect for women who have one or more first-degree relatives who have been diagnosed with a type of cancer other than breast cancer. This suggests that the gendered nature of breast cancer coupled with its widely known genetic risk may be leading to unique secondary stressor effects for women. In addition, we do not observe any statistically significant odds ratios for the two variables that capture the number of second-degree relatives who have had a breast cancer diagnosis and the number of second-degree relatives who have had some other type of cancer diagnosis. These two null findings are also consistent with our second and third hypotheses. Specifically, we posited that a family history of breast cancer would lead women to experience more secondary stressors than a family history of other cancers because of its gendered nature and the widespread knowledge of the genetic component to breast cancer risk. We also hypothesized that the secondary stress responses would be a function of a woman’s genetic and psycho-social distance to the affected relative. Both hypotheses are confirmed by the results shown in Table 3.

The estimates presented in Table 3 do not speak to our last hypothesis – that the timing of a first-degree relative’s breast cancer diagnosis relative to when the survey questions were asked matters. Presumably, the secondary stressor effects dissipate with time as the mother or sister recovers or dies and the stress level for the respondent subsides. Testing this proposition is difficult with our data as we only have 47 respondents with one or more affected first-degree relatives. Nevertheless, we attempt to

investigate the timing issue by replacing the single dummy variable that captures if one or more first-degree female relatives who have had a breast cancer diagnosis with the following sequence of dummy variables. These dummies capture whether a mother's breast cancer diagnosis was at least 10 years ago (N=18) or whether it took place less than 10 years prior to the survey (N=28). We cannot distinguish the timing of a sister's diagnosis effectively as the sample size is very small (N=13) and virtually all of the sisters were diagnosed within the past 10 years. Thus, a third dummy variable is included in these regressions that simply measures if a respondent's sister ever had breast cancer.

The estimated odds ratios for the timing variables appear in Table 4. Women whose mothers had a breast cancer diagnosis fewer than 10 years ago were 68% less likely to consult more than one resource when making financial decisions, 83% less likely to give themselves an "A" or "B" grade for their financial knowledge, and 90% less likely to have calculated their retirement needs, compared to an otherwise similar women whose mothers had never had a breast cancer diagnosis. In contrast, the retirement planning behaviors of women whose mothers were diagnosed 10+ years earlier were no different than women whose mothers never had a breast cancer diagnosis. Likewise, having a sister with breast cancer appears neither to increase nor decrease the odds of preparing for retirement relative to a woman who does not have a sister who had breast cancer. The small the number of affected individuals in this analysis suggests that these results should be viewed as preliminary. They are consistent, however, with our hypothesis that the recency of the diagnosis matters.

[Insert Table 4 Here]

DISCUSSION AND CONCLUSIONS

We find consistent evidence that women who have a mother and/or sister who had a recent breast cancer diagnosis are significantly less likely to engage in retirement preparation activities than are

their counterparts who have no such breast cancer history. Moreover, the same effect is not observed when a first-degree relative has had a different cancer diagnosis or when the cancer diagnosis has occurred in the distant past or if it was a second-degree relative who was diagnosed with cancer (regardless of the cancer site). These findings suggest that the secondary stressors experienced by close female relatives of breast cancer victims may be manifesting themselves in behaviors and attitudes that have long-run consequences for their quality of life.

Drawing on previous research, we can speculate on the psycho-social and/or economic considerations that may underlie these observed relationships. Prior caregiving experiences may be shaping these women's relatively greater inattention to retirement preparations. As we noted earlier, past research has linked such caregiving to psychological and financial distress (Baldwin 2012; Bradley et al. 2008; Hanly et al. 2013; Kim and Given 2008; Stenberg et al. 2010; Teschendorf et al. 2007; Young and Newman 2003). The primary stresses of caregiving may well spill over in to other domains that may not present immediately pressing needs, such as retirement planning. Yet, we do not know with certainty that these women served as caregivers for their mothers/sisters. Regardless of caregiver status, it may be that the gendered nature of breast cancer coupled with the known familial risk serve to precipitate psychological distress and/or an exaggerated perception of risk that translates in delaying/ignoring long-range planning activities.

It is important to note that these relationships were estimated holding constant the respondent's subjective assessment of her chances of living to age 85 or older (see Tables 3 and 4, footnote a), and therefore they do not reflect a difference in expectations regarding longevity by family breast cancer status. Indeed, at the bivariate level, the difference in the mean chance of living to age 85+ by first-degree female relatives' breast cancer status was insignificant ($t=-.61$). Thus, family breast cancer history is not operating through decreased life expectancy to affect retirement preparations.

It is also important to note that the analyses presented here are based on a sample of women who are generally highly educated and live in relatively affluent households. In addition, they all work at a single institution that offers relatively generous defined contribution and defined benefit retirement plans. The findings may, in part, reflect these unique aspects of our sample. In addition, the sample size was such that we are unable to disaggregate other specific types of family cancer histories. It may be that individuals who have close family members who have been diagnosed with cancers that have a familial/genetic component but significantly lower five-year survival rates than breast cancer (e.g., colorectal cancer), make different retirement preparation decisions than women with a family history of breast cancer. Investigation of such differences must await larger samples however because their numbers are too small in the current data set.

That said, the results presented here are an important first step in understanding the secondary stressor effects of a family breast cancer diagnosis. Our findings suggest that women whose mothers and/or sisters have had a breast cancer diagnosis are more likely to ignore retirement preparation recommendations and as a consequence, their ability to someday have sufficient retirement savings is at risk. The findings also raise the question as to whether there are other recommended long-run behaviors that these women are also less likely to do. For instance, do the secondary stressors lead them to be relatively less likely to engage in recommended health behaviors that have long-run benefits (e.g., regular exercise, healthy eating, annual physical examination)? Or, do these secondary stressors create strains in marital relationships that left unattended, in some cases eventually precipitate divorce?

As our understanding grows of how genetics and other family factors affect the intergenerational transmission of cancers, it is likely that the link between family cancer histories and the psycho-social and economic stressors they impose on unaffected family members will also intensify. Future work should to focus on three things. First, work needs to be done to identify the processes that underlie such observed relationships. Such research might begin by gathering qualitative data via focus

groups or in-depth interviews to gain a better understanding of the factors that lead these women to be less likely to take important retirement planning steps. Second, research needs to be done to ascertain if secondary stressor responses are cancer site-specific. The genetic/familial link varies markedly across cancer sites as does the incidence rate, recommended treatment regimen, and prognosis for survival. It may be that secondary stressor responses for unaffected family members also vary along these dimensions. Finally, it is important that we examine the extent to which secondary stressor responses are manifest in other domains. Do unaffected family members have a tendency to neglect or discount the importance of attending to activities that have little impact in the short run, but which may have significant long term, negative consequences, and do their behaviors vary by gender? Research on the above issues will be vital if we are to target high risk groups for education and support that might allow them to avoid these long term, negative consequences.

Table 1. Respondents Answers to the Retirement Preparation Questions (N=467)

The respondent reports she...	Percentage Yes	Percentage No
Has met with a financial advisor in the past two years	36.40	63.60
Consults one or more of the following when getting information about investments and retirement planning: prospectuses, materials from retirement vendors, materials from her employer's benefits office, newspapers, internet sites, financial magazines, books about financial planning, financial television shows, other.	53.75	46.25
On a scale from A to F (where A means excellent and F means poor), assesses her own knowledge of personal finance to be an A or B	39.61	60.39
With or without the help of a financial advisor, has tried to figure out how much money she will need to have saved by the time she retires to live comfortably in retirement	35.33	64.67
Overall, is either very confident or somewhat confident that she will have enough money to live comfortably throughout her retirement years	50.53	49.47

Table 2. Percentage of Survey Respondents with Family Cancer Histories

Number of Affected Relatives	First-Degree Female Relatives Who Have Had Breast Cancer	Second-Degree Female Relatives Who Have Had Breast Cancer	First-Degree Female and Male Relatives Who Have Had Other Cancers^a	Second-Degree Female and Male Relatives Who Have Had Other Cancers^a
0	89.94	80.94	74.95	55.46
1	8.99	15.42	20.99	26.98
2	.86	3.00	3.21	10.49
3	.21	.64	.64	4.28
4			.21	2.36
5+				.43

^a Excludes relatives who have only had one or more of the following: breast cancer, cervical cancer in situ, and/or basal squamous carcinoma.

Table 3. Multivariate Odds Ratios (95% confidence intervals in parentheses)^a

The Respondent Reports She Has...	Seen Financial Advisor in the Past 2 Years	Consults More than One Financial Resource	Self-Assessed Financial Knowledge Grade is "A" or "B"	Calculated Retirement Needs	Very or Somewhat Confident about Retirement
One or More First Degree Female Relative Has Had Breast Cancer	.41** (.19-.86)	.43** (.22-.85)	.39** (.19-.82)	.31** (.14-.67)	.52 (.26-1.04)
Number of Second Degree Female Relatives Who Have Had Breast Cancer	1.00 (.67-1.49)	1.11 (.75-1.65)	.85 (.57-1.26)	1.02 (.68-1.52)	1.04 (.69-1.56)
One or More First Degree Relatives Who Have Had Other Cancers ^b	.92 (.57-1.51)	.83 (.52-1.33)	.82 (.50-1.32)	1.11 (.68-1.81)	.92 (.56-1.49)
Number of Second Degree Relatives Who Have Had Other Cancers ^b	1.07 (.86-1.32)	.89 (.71-1.10)	1.04 (.84-1.29)	1.00 (.80-1.24)	1.02 (.82-1.27)

^aAll logistic regressions control for age, education, marital status, number of children, income, if the respondent plans to support other dependents during retirement, financial risk tolerance, future orientation, subjective chances of living to age 85, type of employer-provided retirement plan, whether one or both parents died before age 60, whether both parents were dead at the time of the survey, total number of first-degree relatives, and total number of second-degree relatives. The complete set of estimates is available from the authors upon request.

^bExcludes relatives who have only had one or more of the following: breast cancer, cervical cancer in situ, and/or basal squamous carcinoma.

Table 4. Multivariate Odds Ratios (95% confidence intervals in parentheses)^a

The Respondent Reports She Has...	Seen Financial Advisor in the Past 2 Years	Consults More than One Financial Resource	Self-Assessed Financial Knowledge Grade is "A" or "B"	Calculated Retirement Needs	Very or Somewhat Confident about Retirement
Mother diagnosed with breast cancer < 10 years ago (1=yes) ^b	.41 (.13-1.30)	.32** (.11-.93)	.17** (.05-.61)	.10** (.02-.47)	.68 (.24-1.92)
Mother diagnosed with breast cancer ≥ 10 year ago (1=yes) ^b	.60 (.20-1.79)	.40 (.14-1.15)	.62 (.21-1.87)	.49 (.16-1.47)	.78 (.27-2.22)
Sister ever diagnosed with breast cancer (1=yes)	.45 (.07-2.83)	2.06 (.47-8.99)	2.65 (.52-13.59)	3.05 (.53-17.62)	.28 (.06-1.43)

^aAll logistic regressions control for number of second-degree female relatives who have had breast cancer, if one or more second-degree relative had a cancer diagnosis excluding breast cancer, number of second-degree relatives who have had a cancer diagnosis excluding breast cancer, age, education, marital status, number of children, income, if the respondent plans to support other dependents during retirement, financial risk tolerance, future orientation, subjective chances of living to age 85, type of employer-provided retirement plan, whether one or both parents died before age 60, whether both parents were dead at the time of the survey, total number of first-degree relatives, and total number of second-degree relatives. The complete set of estimates is available from the authors upon request.

^bThe omitted group in this sequence of dummy variables are those women whose mother had never been diagnosed with breast cancer.

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