

Willingness to Stop Screening Mammograms Among Older Women in the United States: Results From a National Survey



J Gen Intern Med 38(4):1091–3
DOI: 10.1007/s11606-022-07819-4
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INTRODUCTION

National guidelines recommend against routine breast cancer screening when the potential harms outweigh benefits, using criteria based on older age (e.g., 75+ years) and/or limited life expectancy (e.g., <10-year life expectancy).¹ However, many older women who meet these criteria continue to receive screening.²

Although studies have explored factors associated with older women's decisions to be screened,^{3,4} few have specifically asked about willingness to stop screening. Since behavior change is preceded by stages of contemplation and preparation,⁵ this study assessed the extent to which older women have considered stopping screening mammography and the timeframe within which they may stop. These data are needed to design interventions and communication approaches to reduce over-screening.

METHODS

We conducted a cross-sectional survey in January 2022 using a nationally representative online panel (KnowledgePanel). KnowledgePanel members are recruited using probability-based sampling and are provided access to Internet and hardware if needed (Appendix). We included women 65+ years old without history of breast cancer and over-sampled Black women to ensure representation. After describing the purpose of screening mammograms, we asked: "Have you thought about whether you may stop getting mammograms at some point?" The response categories were "I have already stopped"; "I may stop at some point"; "I do not think I will stop"; and "I have not thought about this." Among those who answered that they may stop, we asked about the likely timeline (next 1–2 years, 3–5 years, 6–10 years, or not sure when). We collected information on demographics, prior screening, family history, cancer worry, health literacy, and health/

functional status, which we used to estimate 10-year mortality risk.

We summarized results descriptively and used multinomial logistic regression to examine associations between willingness to stop screening and covariates. We applied survey weights to adjust for non-response and oversampling.

RESULTS

Of 1303 women 65+ years who were invited to participate, 880 (68%) responded; of these, 789 were eligible. Nearly all (97.2%) had previously been screened for breast cancer, including 74.6% who were screened within 2 years.

Overall, 17.2% of participants had already stopped screening, 19.8% planned to stop at some point, 38.7% would not stop, and 24.4% have not thought about stopping screening (Fig. 1). Almost a third (32.5%) of women 75+ years old and 27.0% of women with <10-year life expectancy did not think that they would stop screening (Table 1).

In multinomial logistic regression with "I do not think I will stop" as the reference, participants who were older and participants who had <10-year life expectancies were more likely to have stopped screening. Those who were moderately or extremely worried about breast cancer were less likely to choose each of the other responses compared to "I do not think I will stop." Black participants, compared to White, were less likely to have already stopped screening and less likely to choose "may stop" versus "I do not think I will stop" (Appendix). Life expectancy, education, health literacy, and income, but not family history, were associated with differences in willingness to stop screening in unadjusted comparisons (Table 1); the associations were no longer significant in the adjusted model.

DISCUSSION

This is the first national study to describe older women's considerations and timing of stopping breast cancer screening. Our findings extend the literature on older women's cancer screening decision-making by characterizing what could be considered earlier stages of change (contemplation and preparation). We found that one-quarter of participants have not thought about stopping breast cancer screening, highlighting the need to better inform older women that stopping screening may be an option even before women meet guideline criteria

Prior Presentations: None.

Received May 24, 2022

Accepted September 15, 2022

Published online September 29, 2022

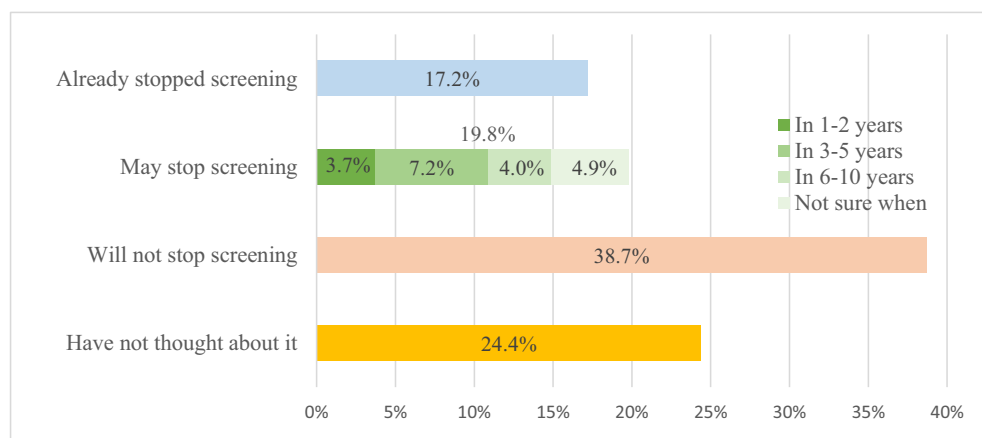


Figure 1 Distribution of willingness to stop screening and timing for doing so among study participants.

for stopping, which can occur through clinician counseling and public health messaging.

Almost one-third of older women who met guideline criteria for stopping screening had no intention of doing so. In a multivariable regression model, considering stopping screening was not associated with age or life expectancy but was associated with cancer worry, which has been reported as an important factor in screening decision making.² Notably, Black

women were less likely to consider stopping. Others have attributed this finding to a lack of trust in the medical system.⁶

Limitations of the study include non-response bias and social desirability bias. We mitigated these by achieving a high response rate and using survey weights to adjust for non-response.

Identifying differences in older women's willingness to consider stopping screening can help inform clinical

Table 1 Bivariate Comparisons between Participant Characteristics and their Willingness to Stop Breast Cancer Screening (N=789)

Participant characteristics	N	Willingness to stop screening mammograms*				P-value [†]
		Have stopped (N=96)	May stop (N=152)	Will not stop (N=338)	Have not considered (N=203)	
Age						
65 to <75	569	34 (7.6%)	108 (20.0%)	264 (42.8%)	163 (29.6%)	<0.001
75+	220	62 (31.7%)	44 (19.4%)	74 (32.5%)	40 (16.4%)	
Life expectancy [‡]						
10+ years	653	62 (13.2%)	132 (20.9%)	287 (41.1%)	172 (24.8%)	<0.001
<10 years	106	31 (36.6%)	17 (15.9%)	36 (27.0%)	22 (20.6%)	
Race						
White	475	70 (18.0%)	110 (21.8%)	194 (38.7%)	101 (21.6%)	0.02
Black	237	15 (8.8%)	29 (11.8%)	118 (49.8%)	75 (29.7%)	
Other	77	11 (18.6%)	13 (15.1%)	26 (32.1%)	27 (34.2%)	
Cancer worry						
Somewhat, a little or not at all worried	663	91 (19.1%)	139 (21.1%)	257 (34.8%)	176 (25.0%)	<0.001
Moderately or extremely worried	122	5 (6.1%)	13 (12.3%)	78 (61.5%)	26 (20.2%)	
Family history of breast cancer						
Negative	561	72 (18.1%)	108 (20.0%)	238 (38.5%)	143 (23.4%)	0.56
Positive	189	17 (12.8%)	40 (21.7%)	85 (41.6%)	47 (24.0%)	
Education						
High school or less	298	49 (21.9%)	50 (16.8%)	115 (35.6%)	84 (25.6%)	0.03
College or more	491	47 (13.4%)	102 (22.1%)	223 (41.2%)	119 (23.4%)	
Health literacy [§]						
Normal	708	82 (16.7%)	139 (19.9%)	313 (40.5%)	174 (22.9%)	0.04
Low	76	14 (21.9%)	13 (19.7%)	22 (22.4%)	27 (36.1%)	
Household income per year						
<\$50,000	298	48 (21.8%)	40 (15.3%)	123 (35.0%)	87 (28.0%)	0.003
\$50,000 to \$100,000	282	25 (11.8%)	63 (25.9%)	121 (42.3%)	73 (20.0%)	
>\$100,000	209	23 (13.9%)	49 (22.0%)	94 (42.2%)	43 (21.9%)	

*Percentages indicate percentages within each row (i.e., for each characteristic category). All percentages incorporated survey weights, which adjusted for non-response and oversampling; the study population was benchmarked against national data for race/ethnicity, age, education, household income, census region, and metropolitan status using the 2021 March Supplement of the Current Population Survey

[†]Comparisons are made using chi-square test

[‡]Life expectancy was estimated using the Schonberg mortality index (Schonberg et al. *J Am Geriatr Soc.* 2017;65(6):1310-1315.). Scores for participants ranged from 0 to 19. Scores ≥ 10 are associated with $>50\%$ chance of 10-year mortality. Thus, women who score ≥ 10 are estimated to have <10 -year life expectancy

[§]Health literacy was assessed in a single validated question—"How confident are you filling out medical forms?" Responses of "not at all," a little bit," "somewhat" confident were categorized as low health literacy; responses of "quite a bit" and "extremely" confident were categorized as normal health literacy (Chew et al. *J Gen Intern Med.* 2008;23(5):561-6.)

discussions and interventions aimed at reducing over-screening. Clinician recommendations are an important influence on patients' decisions to stop cancer screening. Interventions that leverage clinicians to better inform older women that stopping screening may be an option and to address patients' cancer-related worries hold promise for optimizing breast cancer screening in older women.

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Author Contribution Dr. Schoenborn had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Schoenborn, Nagler, Schonberg, Pollack, Boyd, Xue, Gollust

Data analysis and interpretation: Schoenborn, Nagler, Schonberg, Pollack, Boyd, Xue, Gollust

Preparation and review of the manuscript: Nagler, Schonberg, Pollack, Boyd, Xue, Gollust

Funding This project was supported by NIA R01AG066741, Dr. Schoenborn was also supported by a career development award from the National Institute on Aging (K76AG059984). Dr. Boyd was supported by 1K24AG056578 from the National Institute on Aging.

Declarations:

Disclaimer: The funding sources had no role in the design, methods, subject recruitment, data collections, analysis, and preparation of paper.

Conflict of Interest: No author had any conflict of interest.

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