Fatalism and Mammography in a Multicultural Population

Orna Baron-Epel, PhD, MPH, Nurit Friedman, PhD, and Omri Lernau, MD

Cancer fatalism has been suggested to be a major barrier to early-detection behaviors and cancer care. Cancer fatalism has been defined as "the belief that death is inevitable when cancer is present" (Powe & Finnie, 2003, p. 454) or a belief that health is beyond an individual's control because it is a matter of fate or luck (Straughan & Seow, 2000). Fatalistic beliefs may affect the ability to prevent cancer. If people believe that contracting a disease is in the hands of God or that it is a matter of luck and unpreventable, they will not adopt early-detection behaviors (Straughan & Seow). Fatalism also may be involved in survivorship. People with cancer may believe that nothing can be done to prevent death. Both types of fatalism may prevent people from seeking early diagnosis and treatment. Most quantitative studies have not differentiated between the two types of fatalism and have assumed that both types represent the same concept and that both are barriers to prevention behaviors (Mayo, Ureda, & Parker, 2001; Powe, 1995). The Powe Fatalism Inventory (PFI) and the revised PFI refer to fear, predetermination, pessimism, and inevitability, and they measure the inevitability of death and predetermination as one concept (Mayo et al.; Powe, 1995). Straughan and Seow used a measure of fatalism that included mainly fatalistic beliefs about cancer prevention. Abraido-Lanza et al. (2007) pointed out that little consensus exists on what fatalism is and how to measure it; for example, some studies included items referring to fear and fatalism in the same scale (Harmon, Castro, & Coe, 1996; Suarez, Roche, Nichols, & Simpson, 1997). In addition, Abraido-Lanza et al. suggested that the precise definition of cancer fatalism for different populations may not be the same.

Many studies have examined the degree to which perceptions of fatalism influence cancer screening, with conflicting results. Most of the studies found that individuals with higher levels of fatalistic beliefs obtained fewer early-detection tests, such as breast cancer screening (Liang et al., 2008; Mayo et al., 2001; Spurlock & Cullins, 2006; Straughan & Seow, 2000) and early detection

Purpose/Objectives: To assess levels of fatalistic beliefs and their association with mammography use in four population groups in Israel.

Design: Telephone survey.

Setting: Maccabi Healthcare Services in Israel.

Sample: A random sample of 1,550 Arabic and Jewish women.

Methods: A random telephone survey was performed during May and June 2007. Women's fatalistic beliefs were measured. Information from claims records regarding mammography use was obtained for each woman.

Main Research Variables: Levels of fatalistic beliefs and mammography use.

Findings: Fatalistic beliefs included general beliefs that God or fate (external force) was the cause of cancer and related to cancer survivorship. The higher-educated women reported less fatalistic beliefs. Arab women reported more fatalistic beliefs compared to the other women. Mammography use was associated with fatalistic beliefs that external forces were the cause of cancer among Arab and immigrant women but not among veteran Jewish and ultraorthodox women. Fatalistic beliefs about cancer survivorship were not associated with mammography in any of the population groups. Levels of fatalism and education may explain the difference in rates of mammography among Arab and Jewish women.

Conclusions: High levels of fatalism may inhibit women from having a mammogram, particularly Arab and immigrant women in Israel. However, this is not a generalizable result for all population groups and all types of fatalism.

Implications for Nursing: Interventions to decrease fatalism in Arabs and immigrants may increase compliance with mammography. Nurses may achieve this by developing tailored messages for women who believe that external forces are the cause of cancer.

of colon cancer (Gorin, 2005; Liang et al., 2008; Powe, 1995). In some studies, the association was evident in a crude analysis. However, in a multivariable regression analysis, fatalism was not associated with breast cancer screening (Mayo et al.). Other studies did not find the association between fatalism and early-detection behaviors after controlling for additional factors (Farmer,

Reddick, D'Agostino, & Jackson, 2007; Russell, Perkins, Zollinger, & Champion, 2006). Evidence supporting fatalism as a barrier to early detection is inconclusive (Abraido-Lanza et al., 2007).

In most studies, higher levels of fatalistic beliefs have been associated with low income or lower levels of education (Mayo et al., 2001; Niederdeppe & Levy, 2007; Powe, 1995; Russell et al., 2006; Vetter, Lewis, & Charny, 1991). Ethnicity also has been suggested in association with levels of fatalism and referred to as a cultural belief by many researchers. African Americans and Latinos have been shown to have higher levels of fatalistic beliefs compared to Caucasians (Facione, Miaskowski, Dodd, & Paul, 2002; Russell et al.). Generally, researchers have suggested that fatalism can be viewed as an inter-relationship among race, poverty, and cancer (Freeman, 1989). Abraido-Lanza et al. (2007) challenged the assumption that fatalism is a cultural belief and called for a more thorough examination of the different concepts included in fatalism.

Most of the research on fatalism has been performed in the United States and mainly among minorities such as African Americans (Powe & Adderley-Kelly, 2005; Powe, 1994, 1995, 1996, 2001, 2002; Powe, Finnie, & Ko, 2006; Powe, Hamilton, & Brooks, 2006; Shankar, Selvin, & Alberg, 2002), Chinese Americans (Liang et al., 2008; Liang, Yuan, Mandelblatt, & Pasick, 2004), and Latinos (Abraido-Lanza et al., 2007; Gorin, 2005; Powe & Finnie, 2003). Chinese women also have been studied in Australia (Kwok & Sullivan, 2006a, 2006b), as well as Asian women in Singapore (Straughan & Seow, 2000). Few studies have included white Americans in comparison with American minorities (Magai, Considine, Conway, Neugut, & Culver, 2004; Niederdeppe & Levy, 2007; Russell et al., 2006). Remennick (2003), in a qualitative study of immigrants from the former Soviet Union in Israel, reported that general fatalistic attitudes existed and were a barrier to mammography in those women. More studies are needed in other population groups with diverse ethnic and cultural backgrounds to assess the importance of fatalism as a barrier to early detection of cancer.

Breast cancer is the most common cancer among women in Israel (Israel National Cancer Registry, 2008a, 2008b). The rates of breast cancer in Jewish women are similar to those among women in the United States and other Western countries such as the Netherlands and Canada (Freedman et al., 2003; Ifrah, 1999). The incidence rates of breast cancer among Arab women in Israel are lower than rates among Jewish women and similar to those found in neighboring countries such as Jordan (Freedman et al.). Among Arab and Jewish Israeli women, incidence rates have been increasing in the past decade. The increase is especially notable among Arab women (Tarabeia et al., 2007). In addition, Arab women are diagnosed more frequently with advanced stages of breast cancer compared to Jewish women (Tarabeia et al.).

In Israel, biennial mammograms are provided free to all women aged 50–74 years as part of the national health insurance plan. However, despite guidelines for early detection, only 68% of women aged 50–74 years in the general population reported having a mammography during the previous two years (Israel Center for Disease Control, 2006). In addition, only 53% of women ever had a Pap test (Israel Center for Disease Control). Fewer than 10% of individuals older than 50 years had undergone colon cancer early-detection tests (Shvartzman, Rivkind, Neville, Friger, & Sperber, 2000).

Four culturally distinct populations live in Israel: (a) veteran Jewish women (nonimmigrants, nonultraorthodox)—the majority of women in Israel, (b) ultraorthodox Jewish women, distinguished by re-

gional isolation and specific characteristics such as high fertility—estimated to be about 6%–8% of the Israeli female Jewish population, (c) immigrant Jewish women, arrived in Israel from the former Soviet Union since 1992 with their distinct cultural background and language—about 17% of the female population in Israel, and (d) Arab woman, having their distinct religion, culture, and language—19% of the population in Israel. The aim of this article is to assess the levels of fatalistic beliefs and the association between fatalism and mammography in the four population groups.

Methods

Population Sample

The Maccabi Healthcare Service (MHS) is a large health maintenance organization that provides services to about 1.7 million members, 25% of the Israeli population. Women having had at least one mammogram up to two years prior to the date of the interview, as registered in the claims database, were categorized as having had a mammogram according to claims records. The exact dates of the mammograms were extracted from the claims database. According to an internal MHS survey, only 1% of women aged 50–75 years obtained a mammogram privately; therefore, those mammograms were not registered in the claims records.

Four random samples of women aged 52–74 years were obtained from MHS's computerized list of members. The specific age group was chosen so as to ensure that the women were entitled to have a mammogram during the previous two years, as recommended. The four groups consisted of Jewish women who had lived in Israel since before 1989 (veteran Jewish women), women defined as ultraorthodox by MHS for the purpose of planning culturally sensitive services, immigrant women arriving in Israel after 1989 from the former Soviet Union, and Arab women living in Arab villages and towns. The list included the women's names and home phone numbers. Women who reported being diagnosed with breast cancer were not included. The study was approved by the MHS Ethics Committee. At the start of the telephone interviews, the women were notified that if they agreed to answer the questionnaire they were free to stop the interview at any point and that the information was anonymous.

The four population groups were defined by the data from MHS and reassessed based on answers to questions regarding religiosity, ethnic background, and year of immigration. Almost 20 women in the ultraorthodox group defined themselves as secular and were transferred to the veteran Jewish group (nonimmigrants, nonultraorthodox). The response rate was 72%; 1,550 women were interviewed, and 619 refused to be interviewed. Fourteen women did not finish the entire questionnaire.

Data Collection and Questionnaire

The questionnaire was administered over the telephone by trained interviewers from the corresponding population group for each language: Hebrew, Arabic, and Russian. The survey was performed in May and June 2007. The questionnaire included items regarding mammography, attitudes toward breast cancer and mammography, and socioeconomic status. The questionnaire was translated into Arabic and Russian and translated back into Hebrew to ensure correct translation. In addition, Arab and immigrant public health professionals went over the corresponding translations and validated that the meaning of the questions in the two languages was identical to the meaning of the Hebrew version of the questionnaire. A pilot test was performed with 50 women before the full-scale survey occurred.

Women eligible for mammography have the option of receiving it from the MHS radiology clinics or from participating providers. In all cases in which mammography service is reimbursed by MHS, regardless of provider, the MHS automated claims system captures the service. The dates of mammography performance for each woman answering the survey were added to the survey data. All mammograms performed from 2002 to the time of the interviews were recorded.

Instruments

Participants' self-reported socioeconomic status was calculated with a scale from Adler, Epel, Castellazzo, and Ickovics (2000), which contains 10 levels (0 is the lowest socioeconomic status and 10 is the highest level).

The Powe Fatalism Inventory (Powe, 1995) was translated into Hebrew and pretested on a sample of 50 women. The Cronbach alpha was lower than 0.5, and many women were reluctant to express their agreement or disagreement with the items in the questionnaire. Therefore, only four items were used in the large-scale survey. Those items were chosen because women agreed to answer them and they represented the main context of fatalism. The items use a five-point Likert scale from 1 (do not agree at all) to 5 (totally agree). A mean score was calculated for the two items depicting fatalistic beliefs in external causes of cancer (God and fate), and a mean score was calculated for the two items depicting fatalistic beliefs about cancer survivorship.

Statistical Analysis

Bivariate analysis was applied to determine the association between mammography and the socioeconomic factors with χ^2 analyses. Spearman correlation coefficients were calculated to measure the association between the fatalistic items. The fatalistic attitudes did not have a normal distribution. Mann-Whitney tests were used to assess the difference between the mean scores of the attitudes and having had a mammogram. A multivariable logistic

regression analysis was performed to assess the factors associated with fatalism, and fatalism was divided into two categories: low (1–2.5) and high (2.6–5). Socioeconomic variables associated with fatalism with a p value of less than 0.1 in the crude analysis were added to the model. To assess variables associated with mammography use, mammography was the dependant variable and fatalism (as the continuous variable) was the independent variable. Statistical significance was set at a p value of less than 0.05. SPSS® version 14.0 software (SPSS Inc.) was used for the analysis.

Results

Study Population

The sample had a mean age of 60.1 years (SD = 6.1); the Arab women were younger (59.7), and the immigrants were older (61.8). About half of the Jewish women worked outside the home; among Arab women, only 11% work outside the home. Education varied among groups: The immigrants reported having an academic education (67%) most frequently, the Arab women less frequently (12%); 35% of veteran Jewish women reported having an academic degree. The mean socioeconomic status (on a scale of 1–10) was almost six for Arab, veteran Jewish, and ultraorthodox women, and only 4.1 for immigrants.

Seventy-one percent of women had a mammogram during the prior two years according to the MHS claims database (see Table 1). The difference between the Jewish groups (veteran, ultraorthodox, and immigrants) was not significant, but fewer Arab women compared to Jewish women had obtained mammograms during the

prior two years (p = 0.013, not presented). Older women obtained mammography more often during the prior two years (p = 0.017). A different pattern of association between mammography and education emerged in the ultraorthodox women compared to the other groups. In all groups except the ultraorthodox, women with 12 or fewer years of schooling obtained mammography less frequently during the prior two years. This was statistically significant only among Arabs (p = 0.05). Among the ultraorthodox women, the rates of mammography were higher among less-educated women. Employment, income, marital status, and socioeconomic status were not associated with mammography use in any of the population groups.

Fatalistic Beliefs About Cancer Prevention and Survivorship

Four items measured fatalistic attitudes toward breast cancer. Cronbach alpha was not high for the four items and differed among the groups (0.55, 0.26, 0.45, and 0.43 for veteran Jewish women, ultraorthodox, immigrant, and Arab women, respectively). The correlations between each of the items in each population group are presented in Table 2. The two items referring to God and fate as the causes of the disease (fatalistic beliefs in external forces) were significantly associated with each other (0.54–0.5) but to a much lesser extent with the other two items (< 0.16). Among the ultraorthodox women, the correlation coefficient of the association between the two items describing fatalistic beliefs in external forces was low (0.12) compared to the association among the three other groups (0.5–0.54). The two items referring to survivorship also were associated with each other and less

Table 1. Frequency of Mammography Use

Variable	Veteran Jewish Women		Ultraorthodox Jewish Women		Immigrant Jewish Women		Arab Women		Total	
	n	%	n	%	n	%	n	%	n	%
Total	305	74	269	74	273	71	262	67	1,109	71
Age (years)										
50–64	227	72	210	74	156	69	189	65*	782	70*
65–75	72	81*	53	77	112	74	63	72	300	76
Subjective socioeconomic status										
Low	20	63	10	67	102	72	260	67	158	69
Average	123	77	119	75	128	71	8	66	456	72
High	146	75	97	74	30	73	78	64	351	74
Education										
Less than high school diploma	83	68	93	84**	9	64*	177	63	362	69
High school or higher	114	79	109	67	82	73	45	79*	350	73
College degree	106	75	64	76	181	71	34	71	385	73
Employment										
Unemployed	159	76	142	75	152	72	229	66	682	71
Employed	144	73	122	72	120	70	30	68	416	72

Note. N values vary because participants declined to provide specific answers to some questions.

* p ≤ 0.05; ** p < 0.01

Table 2. Fatalistic Belief Items Among Women, by Population Group

Fatalistic Belief	External Forces						Survivorship					
	Fate			God's Will			Many Treatments Will Not Change the Situation			Breast Cancer Kills Most of the Women Who Get It		
	X̄	SD	r_s	X̄	SD	r_s	X̄	SD	r_s	X̄	SD	r_s
Veteran Jewish women	2.56	1.61	–	2.38	1.69	–	1.8	1.25	–	2.16	1.23	–
Fate	–	–	–	–	–	–	–	–	–	–	–	–
God's will	–	–	0.54**	–	–	–	–	–	–	–	–	–
Many treatments will not change the situation.	–	–	0.14**	–	–	0.16**	–	–	–	–	–	–
Breast cancer kills most of the women who get it.	–	–	0.08	–	–	0.09	–	–	0.37**	–	–	–
Ultraorthodox Jewish women	2.82	1.76	–	4.49	1.12	–	1.95	1.33	–	2.17	1.3	–
Fate	–	–	–	–	–	–	–	–	–	–	–	–
God's will	–	–	0.12*	–	–	–	–	–	–	–	–	–
Many treatments will not change the situation.	–	–	0.08	–	–	–	–	–	–	–	–	–
Breast cancer kills most of the women who get it.	–	–	0.04	–	–	–0.02	–	–	0.22**	–	–	–
Immigrant Jewish women	2.66	1.68	–	2.67	1.69	–	2.34	1.5	–	3.28	1.5	–
Fate	–	–	–	–	–	–	–	–	–	–	–	–
God's will	–	–	0.5**	–	–	–	–	–	–	–	–	–
Many treatments will not change the situation.	–	–	0.1	–	–	0.03	–			–	–	–
Breast cancer kills most of the women who get it.	–	–	0.11	–	–	0.16**	–	–	0.23**	–	–	–
Arab women	4.43	1.15	–	4.65	1.03	–	2.97	1.71	–	2.32	1.57	–
Fate	–	–	–	–	–	–	–	–	–	–	–	–
God's will	–	–	0.5**	–	–	–	–	–	–	–	–	–
Many treatments will not change the situation.	–	–	0.02	–	–	0.04	–	–	–	–	–	–
Breast cancer kills most of the women who get it.	–	–	0.11	–	–	0.03	–	–	0.29**	–	–	–

* $p < 0.05$; ** $p < 0.0001$
r_s—Spearman correlation coefficient
Note. Items were rated on a fatalism scale of 1 (low) to 5 (high).

so to the items of fatalistic beliefs in external forces. Table 2 also presents the mean scores for each item. Among Arab women, the agreement with the two statements representing fatalistic beliefs in external forces was high (4.43 and 4.65, respectively) compared to veteran Jewish women (2.56 and 2.38, respectively) (p < 0.0001). Among the ultraorthodox women, the item referring to fate received a low score but the item referring to God received a high score (2.82 and 4.49, respectively) (p < 0.0001). Among immigrants, the item referring to fatalistic beliefs about cancer survivorship received the highest score compared to the other groups (3.28 in immigrants, 2.16 among veteran Jewish women) (p < 0.0001).

Fatalism and Mammography Performance

The mean values of the two types of fatalistic beliefs by mammography use are presented in Table 3 for each population group. Among Arabs and immigrants, those not receiving mammography reported higher fatalistic beliefs in external forces; among immigrants,

the significance was borderline. Because the items referring to God and fate were not highly correlated among ultra-religious, both items were analyzed separately to assess associations with mammography; no association was observed. No association was observed between mammography use and fatalistic beliefs about cancer survivorship in any of the population groups.

In a logistic regression model, the researchers attempted to identify characteristics of women with high and low fatalistic beliefs (see Table 4). Lower levels of education were associated with higher fatalistic beliefs of both types. In addition, low socioeconomic status was associated with fatalistic beliefs that external forces were the cause of cancer but was not associated with belief about survivorship. Age, marital status, and employment were not associated with either type of fatalism. The differences in the level of fatalism expressed by the women differed significantly among the population groups. Arab women had higher rates of both types of fatalistic beliefs compared to the other three population

Table 3. Fatalistic Beliefs About Mammography Use by Population Group

Mammography	Veteran Jewish Women				Ultraorthodox Jewish Women				Immigrant Jewish Women				Arab Women			
	External Forces		Survivorship		External Forces		Survivorship		External Forces		Survivorship		External Forces*		Survivorship	
	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD
Total Mammography	2.45	1.47	1.98	1.05	3.73	1.22	2.08	1.11	2.68	1.49	2.77	1.29	4.54	0.97	2.67	1.42
Yes	2.43	1.43	2.00	1.07	3.73	1.19	2.08	1.10	2.57	1.42	2.74	1.28	4.45	1.05	2.63	1.38
No	2.55	1.55	1.90	1.01	3.72	1.32	2.07	1.15	2.94	1.63	2.84	1.32	4.73	0.75	2.73	1.5

* $p \leq 0.05$

groups, and immigrants had higher levels of fatalistic beliefs about survivorship than Arabs.

To identify whether fatalism was associated with mammography after controlling for age and education as possible confounders, a multivariable logistic regression analysis was conducted to calculate the association between fatalism and mammography use (see Table 5). Among immigrant and Arab women, women with higher levels of fatalistic beliefs in external forces had a lower chance of obtaining mammography. Fatalistic beliefs regarding survivorship were not associated with mammography in the basic analysis. Therefore, the researchers did not perform a multivariable analysis.

Because the rate of mammography among veteran Jewish women was higher than among Arab women, the researchers examined whether fatalism and education could explain the difference between the two population groups. Model 1 in Table 6 shows that the chances of Arab women having a mammogram were lower compared to veteran Jewish women (odds ratio = 0.72, confidence interval = 0.53, 0.97). However, if fatalism (model 2) or education (model 3) was added to the model, the difference in rates of mammography use between Arab and veteran Jewish women disappeared. When both education and fatalism were added to the regression model, fatalism was associated with mammography use. Therefore, the difference in mammography use between Arabs and Jews may be attributed to the difference in the levels of education or fatalistic beliefs. In addition, fatalistic beliefs in external forces may be predictive of mammography use.

Discussion

The original purpose of the research was to validate the Powe Fatalism Inventory for use in the Israeli context. However, the questionnaire was not acceptable to Israeli women and could not be used as a straightforward translation. Therefore, further adaptation was performed and four items depicting the basic ideas of fatalism were used. However, Cronbach alpha was not high for the four fatalistic items used in this study; therefore, those items do not seem to represent one type of fatalistic belief. Abraido-Lanza et al. (2007) identified methodologic problems with the measurement of fatalism, implying a high degree of conceptual confusion. They proposed that "different concepts are cloaked under the notion of fatalism" (p. 156). The current study identified two types of fatalistic beliefs: fatalistic beliefs in external forces and in survivorship within the previously used measure of fatalism.

Women with high fatalistic beliefs in external forces may perceive that preventing cancer is impossible and that there is no point in adopting any active behaviors such as mammography. That type of fatalism is similar to the concept of external locus of control (Rotter, 1966). Fatalism frequently is referred to as a cultural belief; this may be attributed to basic values of specific communities that are reflected in the concept of external locus of control. Among ultraorthodox women, the item referring to fate was not highly associated with the item referring to God because their religious beliefs do not refer to fate as a part of their belief system, but more to God as the external force. In the other population groups, God and fate were believed to have some control over cancer. Among Arab and ultrareligious women, fatalistic beliefs in external forces were comparatively high compared to veteran and immigrant Jewish women. This may be explained by higher levels of education among veteran and immigrant Jewish women. Nuances in belief systems in various ethnic groups may contribute to behavioral differences and effectiveness of interventions.

The women with high fatalistic beliefs in external forces did not necessarily have high fatalistic beliefs regarding survivorship. Getting cancer could be inevitable, but treatments could be effective. Therefore, the four items, although they all represent fatalism, cannot be presented as one measure. Fatalistic beliefs about cancer survivorship were higher among immigrants and Arabs and lower among veteran Jewish women and ultraorthodox

Table 4. Factors Associated With Fatalism

Variables in Model	Fatalistic Beliefs in External Forces as the Cause of Cancer (N = 1,299)			Fatalistic Beliefs About Cancer Survivorship (N = 1,287)		
	Odds Ratio	Confidence Interval	p	Odds Ratio	Confidence Interval	p
Age	0.99	0.97, 1.02	0.6	1.01	0.99, 1.03	0.48
Education	0.57	0.47, 0.69	< 0.0001	0.69	0.58, 0.83	< 0.0001
Marital status	0.86	0.64, 1.16	0.32	0.85	0.65, 1.12	0.26
Employment	0.92	0.68, 1.24	0.57	0.94	0.71, 1.24	0.67
Socioeconomic status	0.91	0.85, 0.97	0.006	0.99	0.94, 1.05	0.80
• Population group[a]						
• Veteran Jewish women	0.06	0.04, 1.11	< 0.0001	0.68	0.47, 0.97	0.03
• Ultraorthodox Jewish women	0.53	0.29, 0.97	0.04	0.65	0.45, 0.95	0.03
• Immigrant Jewish women	0.1	0.06, 0.19	< 0.0001	2.54	1.65, 3.89	< 0.0001

[a] Arab women as reference group
Note. The analysis was a logistic regression model.

women. However, the differences were not as large as for the fatalistic beliefs in external forces. This type of fatalism may be less dependent on cultural differences and may be more highly associated with general knowledge and knowledge of the healthcare system.

In this study, the less educated women reported higher levels of both types of fatalism. This result is consistent with other studies (Mayo et al., 2001; Powe, 1995; Russell et al., 2006). Women with higher levels of education may have a feeling of control over life in general. Low levels of education may leave women with feelings of powerlessness; therefore, they may attribute the onset of disease to God or fate. In addition, women with higher levels of education may have higher levels of knowledge about survival from cancer and, therefore, report lower levels of fatalistic beliefs about cancer survivorship. Whether fatalism is a characteristic of poverty is not clear (Freeman, 1989), but it may be more dependant on culture and education.

The study of fatalism stems from the hypothesis that attitudes and beliefs predict behavior. However, as described in the introduction, the data are not consistent

regarding the association between fatalistic beliefs and mammography. The fact that only one of the fatalistic beliefs was associated with mammography use in two of the population groups may explain the inconsistencies in the literature. Fatalism may not predict mammography use as hypothesized in all populations because other factors may be more influential in prompting individuals to have a mammogram. Such factors may be different for each population. In some populations, such as Arabs and immigrants, fatalism may be important in the decision to have a mammogram, whereas other beliefs or environmental and social factors may be more influential in other population groups.

The lower rates of mammography in the Arab population are a source of concern in the healthcare system in Israel because breast cancer incidence is increasing among Arab women (Tarabeia et al., 2007). Furthermore, no economic barrier exists for mammography use among the lower socioeconomic groups because mammography is free of charge for women older than 50 years. MHS has put much effort in the past few years into increasing mammography among Arab women.

Table 5. Mammography Use and Fatalistic Beliefs in External Forces as the Cause of Cancer

Variable	Jewish Women (N = 399)			Ultraorthodox Jewish Women (N = 349)			Jewish Immigrant Women (N = 366)			Arab Women (N = 376)		
	OR	CI	p	OR	CI	p	OR	CI	p	OR	CI	p
Fatalistic beliefs in external force	0.92	0.79, 1.08	0.32	0.97	0.79, 1.19	0.75	0.84[a]	0.72, 0.98	0.024	0.71[a]	0.53, 0.94	0.017
Age	1.03	0.99, 1.07	0.17	0.98	0.94, 1.03	0.46	1.01	0.98, 1.04	0.63	1.01	0.97, 1.04	0.74
Education	1.16	0.87, 1.55	0.31	0.77	0.55, 1.09	0.14	1.01	0.67, 1.52	0.95	1.18	0.85, 1.66	0.32

[a] Mammography use as the dependent variable in a logistic regression model
CI—confidence interval; OR—odds ratio

Table 6. Association of Mammography Use With Fatalistic Beliefs in External Forces, Age, and Education Among Arab and Veteran Jewish Women

Variable	Model 1			Model 2			Model 3			Model 4		
	OR	CI	p	OR	CI	P	OR	CI	p	OR	CI	p
Jews versus Arabs	0.72	0.53, 0.97	0.03	0.99	0.67, 1.47	0.97	0.80	0.57, 1.12	0.20	1.03	0.69, 1.54	0.89
Age	1.01	0.99, 1.04	0.29	1.02	0.99, 1.04	0.26	1.02	0.99, 1.04	0.27	1.02	0.99, 1.04	0.26
Fatalistic beliefs in external forces	–	–	–	0.85	0.75, 0.96	0.01	–	–	–	0.86	0.76, 0.99	0.03
Education	–	–	–	–	–	–	1.25	1.02, 1.54	0.035	1.18	0.95, 1.47	0.13

N = 780

CI—confidence interval; OR—odds ratio

Note. The analysis was a logistic regression model.

Even so, the rates still are lower among Arab women compared to Jewish women. Therefore, a need exists to identify the reasons for the low level of compliance with recommendations and ways to increase compliance. This study presents data that can explain the difference between Jews and Arabs and may help tailor interventions to increase levels of compliance with mammography recommendations. The lower levels of education and the higher levels of fatalistic beliefs in external forces among Arabs may explain the difference between the two groups regarding mammography use. Theoretically, low levels of education may be the cause of fatalistic beliefs and not the opposite. Therefore, decreasing fatalistic beliefs may increase compliance with mammography recommendations. From these results, fatalistic beliefs in external forces seem to be more strongly associated with mammography than education.

The strength of this study is in the objective measurement of mammography use. Most other studies have used self-reported mammography data. Because agreement between actual performance of mammography and self-reported performance is different in different population groups, results may be biased when researchers use self-report measures (Baron-Epel, Friedman, & Lernau, 2008). In addition, fatalism has not been studied before in these four population groups residing in Israel, where economic constraints are not involved in the decision to have a mammogram.

Limitations

The study also has some limitations. The sample is not representative of Israeli society because only women receiving their care from MHS took part in the study. However, this should not influence the association between fatalism and mammography. Another limitation is the use of the Powe Fatalism Inventory to measure fatalism. Only two items were used to measure each fatalistic belief. However, to achieve higher levels of compliance with an interviewee during a telephone survey, keeping the number of items to a minimum was important. Additional research is needed to develop better measures of the two different types of fatalism and to further conceptualize the meaning of fatalistic beliefs on the cancer treatment continuum.

Implications for Nursing

Tailoring interventions to Arab and immigrant women with the message that early detection can be effective even if cancer is an act of God or fate should increase mammography use. In addition, messages that decrease levels of fatalism also may have positive effects on mammography use in these groups. Clinical nurses should assess the two types of fatalistic beliefs held by patients when counseling them regarding early detection of cancer and when counseling women who have been diagnosed with cancer. More research is needed to evaluate the association between fatalistic beliefs and compliance with oncology treatments to assess the importance of such beliefs regarding treatment behaviors.

References

Abraido-Lanza, A.E., Viladrich, A., Florez, K.R., Cespedes, A., Aguirre, A.N., & De La Cruz, A.A. (2007). Commentary: Fatalismo reconsidered: A cautionary note for health-related research and practice with Latino populations. *Ethnicity and Disease, 17*(1), 153–158.

Adler, N.E., Epel, E.S., Castellazzo, G., & Ickovics, J.R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy white women. *Health Psychology, 19*(6), 586–592.

Baron-Epel, O., Friedman, N., & Lernau, O. (2008). Validity of self-reported mammography in a multicultural population in Israel. *Preventive Medicine, 46*(6), 489–491.

Facione, N.C., Miaskowski, C., Dodd, M.J., & Paul, S.M. (2002). The self-reported likelihood of patient delay in breast cancer: New thoughts for early detection. *Preventive Medicine, 34*(4), 397–407.

Farmer, D., Reddick, B., D'Agostino, R., & Jackson, S.A. (2007). Psychosocial correlates of mammography screening in older African American women. *Oncology Nursing Forum, 34*(1), 117–123.

Freedman, L.S., Barchana, M., Al-Kayed, S., Qasem, M.B., Young, J.L., Edwards, B.K., et al. (2003). A comparison of population-based cancer incidence rates in Israel and Jordan. *European Journal of Cancer Prevention, 12*(5), 359–365.

Freeman, H.P. (1989). Cancer in the socioeconomically disadvantaged. *CA: A Cancer Journal for Clinicians, 39*(5), 266–288.

Gorin, S.S. (2005). Correlates of colorectal cancer screening compliance among urban Hispanics. *Journal of Behavioral Medicine, 28*(2), 125–137.

Harmon, M.P., Castro, F.G., & Coe, K. (1996). Acculturation and cervical cancer: Knowledge, beliefs, and behaviors of Hispanic women. *Women and Health, 24*(3), 37–57.

Ifrah, A. (1999). *Women's health in Israel: A data book.* Tel Hashomer, Israel: Hadassah, the Women's Zionist Organization of America, Inc., and Israel Women's Network.

Israel Center for Disease Control. (2006). *Israeli national health interview survey* [INHIS-1, 2003-4, Publication 249]. Tel Hashomer, Israel: Israel Center for Disease Control, Ministry of Health.

Israel National Cancer Registry. (2008a). *Breast cancer 2002.* Retrieved June 24, 2008, from http://www.health.gov.il/Download/pages/breast_oct_2002.pdf

Israel National Cancer Registry. (2008b). Breast cancer rates 1980–2002. Retrived June 24, 2008, from http://www.health.gov.il/download/sartan/trends/Breast.xls

Kwok, C., & Sullivan, G. (2006a). Chinese-Australian women's beliefs about cancer: Implications for health promotion. *Cancer Nursing, 29*(5), E14–E21.

Kwok, C., & Sullivan, G. (2006b). Influence of traditional Chinese beliefs on cancer screening behaviour among Chinese-Australian women. *Journal of Advanced Nursing, 54*(6), 691–699.

Liang, W., Wang, J.H., Chen, M.Y., Feng, S., Lee, M., Schwartz, M.D., et al. (2008). Developing and validating a measure of Chinese cultural views of health and cancer. *Health Education and Behavior, 35*(3), 361–375.

Liang, W., Yuan, E., Mandelblatt, J.S., & Pasick, R.J. (2004). How do older Chinese women view health and cancer screening? Results from focus groups and implications for interventions. *Ethnicity and Health, 9*(3), 283–304.

Magai, C., Consedine, N., Conway, F., Neugut, A., & Culver, C. (2004). Diversity matters: Unique populations of women and breast cancer screening. *Cancer, 100*(11), 2300–2307.

Mayo, R.M., Ureda, J.R., & Parker, V.G. (2001). Importance of fatalism in understanding mammography screening in rural elderly women. *Journal of Women and Aging, 13*(1), 57–72.

Niederdeppe, J., & Levy, A.G. (2007). Fatalistic beliefs about cancer prevention and three prevention behaviors. *Cancer Epidemiology, Biomarkers and Prevention, 16*(5), 998–1003.

Powe, B., & Adderley-Kelly, B. (2005). Colorectal cancer in African Americans: Addressing the need for further research and research utilization. *Journal of the National Black Nurses Association, 16*(2), 48–54.

Powe, B.D. (1994). Perceptions of cancer fatalism among African Americans: The influence of education, income, and cancer knowledge. *Journal of the National Black Nurses Association, 7*(2), 41–48.

Powe, B.D. (1995). Cancer fatalism among elderly Caucasians and African Americans. *Oncology Nursing Forum, 22*(9), 1355–1359.

Powe, B.D. (1996). Cancer fatalism among African-Americans: A review of the literature. *Nursing Outlook, 44*(1), 18–21.

Powe, B.D. (2001). Cancer fatalism among elderly African American women: Predictors of the intensity of the perceptions. *Journal of Psychosocial Oncology, 19*(3–4), 85–95.

Powe, B.D. (2002). Promoting fecal occult blood testing in rural African American women. *Cancer Practice, 10*(3), 139–146.

Powe, B.D., & Finnie, R. (2003). Cancer fatalism: The state of the science. *Cancer Nursing, 26*(6), 454–465.

Powe, B.D., Finnie, R., & Ko, J. (2006). Enhancing knowledge of colorectal cancer among African Americans: Why are we waiting until age 50? *Gastroenterology Nursing, 29*(1), 42–49.

Powe, B.D., Hamilton, J., & Brooks, P. (2006). Perceptions of cancer fatalism and cancer knowledge: A comparison of older and younger African American women. *Journal of Psychosocial Oncology, 24*(4), 1–13.

Remennick, L. (2003). "I have no time for potential troubles": Russian immigrant women and breast cancer screening in Israel. *Journal of Immigrant Health, 5*(4), 153–163.

Rotter, J. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs, 80*(1), 1–28.

Russell, K.M., Perkins, S.M., Zollinger, T.W., & Champion, V.L. (2006). Sociocultural context of mammography screening use. *Oncology Nursing Forum, 33*(1), 105–112.

Shankar, S., Selvin, E., & Alberg, A.J. (2002). Perceptions of cancer in an African-American community: A focus group report. *Ethnicity and Disease, 12*(2), 276–283.

Shvartzman, P., Rivkind, E., Neville, A., Friger, M., & Sperber, A.D. (2000). Screening intention and practice among first-degree relatives of colorectal cancer patients in southern Israel. *Israel Medical Association Journal, 2*(9), 675–678.

Spurlock, W.R., & Cullins, L.S. (2006). Cancer fatalism and breast cancer screening in African American women. *ABNF Journal, 17*(11), 38–43.

Straughan, P.T., & Seow, A. (2000). Attitudes as barriers in breast screening: A prospective study among Singapore women. *Social Science and Medicine, 51*(11), 1695–1703.

Suarez, L., Roche, R.A., Nichols, D., & Simpson, D.M. (1997). Knowledge, behavior, and fears concerning breast and cervical cancer among older low-income Mexican-American women. *American Journal of Preventive Medicine, 13*(2), 137–142.

Tarabeia, J., Baron-Epel, O., Barchana, M., Liphshitz, I., Ifrah, A., Fishler, Y., et al. (2007). A comparison of trends in incidence and mortality rates of breast cancer, incidence to mortality ratio and stage at diagnosis between Arab and Jewish women in Israel, 1979–2002. *European Journal of Cancer Prevention, 16*(1), 36–42.

Vetter, N.J., Lewis, P.A., & Charny, M. (1991). Health, fatalism and age in relation to lifestyle. *Health Visit, 64*(6), 191–194.