

Immigrant Women's Cancer Screening Behaviors

By: L. Louise Ivanov; Jie Hu; Ashley Leak

Ivanov L. L., Hu, J., & Leak, A. (2010). Immigrant women's cancer screening behaviors. *Journal of Community Health Nursing*, 27(1), 32-35. DOI: [10.1080/07370010903466163](https://doi.org/10.1080/07370010903466163)

Made available courtesy of Taylor and Francis (Routledge):

<http://www.informaworld.com/openurl?genre=journal&issn=0737-0016>

*****Reprinted with permission. No further reproduction is authorized without written permission from Taylor and Francis (Routledge). This version of the document is not the version of record. Figures and/or pictures may be missing from this format of the document.*****

Abstract:

Objectives: Investigate the relationship between the dependent variable health outcome (perceived health status) and the independent variables population characteristics, (predisposing, which includes age, acculturation, months in the United States; enabling, which includes availability of medical insurance) and health behavior (personal health practices, which includes engaging in cancer screening of mammography, Pap smear, and breast self-exam) among immigrant women from the former Soviet Union.

Design: Descriptive correlational design was used with Andersen's Behavioral Model as the conceptual framework.

Sample: Convenience sample of 99 women, 18 years of age and older, was obtained from a community center.

Measures: Demographic Information for Immigrants from the Former Soviet Union Survey (DIFSU) and Language, Identity, and Behavior Acculturation Survey (LIB) were used to collect data.

Results: Younger women were more likely to have a Pap smear and consider their health status as good or excellent; those with better English language skills were more likely to conduct breast self-exam but considered their health status as poor or fair; having insurance was positively correlated with having a Pap smear; the longer women were in the United States, the more likely they were to receive a mammogram. The model indicated that age and language acculturation significantly predicted health status.

Conclusion: Given the incidence of breast cancer in the United States, the results highlight women in need of interventions to help them understand the value of cancer screening behaviors.

Article:

Introduction

Breast cancer is the second leading cause of cancer deaths in women today. According to the American Cancer Society, about 1.3 million women will be diagnosed with breast cancer annually worldwide, and about 465,000 will die from the disease (Women's Health Resource, 2008). About 77% of women with breast cancer are over age 50 at the time of diagnosis. The incidence rate for women of all races in the US developing breast cancer is 127.8 per 100,000 women. According to the Healthy People baseline for 1998, 79% of women 18 years and older received a Pap smear within the last 3 years, and 59% of women 40 years of age and older in 1994 received a mammogram within 2 years (US Department of Health and Human Services, 2000). The Healthy People 2010 objectives have set the target of 90% of women 18 years and older receiving a Pap smear within 3 years and 70% of all women 40 years and older receiving a mammogram within 2 years (US Department of Health and Human Services, 2000).

With the collapse of the Soviet Union in 1989, the numbers of refugees and immigrants to the United States (US) from the former Soviet Union (FSU) increased dramatically. From 1990 to 1997, a total of 734,000 individuals from the FSU immigrated to the US, exceeding the number from other countries (Schmidley & Gibson, 1999; US Department of Commerce, 1999). However, few studies have examined the health behaviors related to cancer screening of this group. The studies that have been conducted found that women from the FSU did not access preventive health care services such as high blood pressure and cholesterol screening, Pap smears, mammography, or breast self-exam (Duncan & Simmons, 1996; Ivanov & Buck, 2002; Lipson, Weinstein, Gladstone, & Sarnoff, 2003). When asked, women indicated that they did not practice self breast exam, receive Pap smears, or mammograms because they were not instructed to do so. Differences in health care use may in part be dependent on how the FSU citizens expect the health care system in the US to operate. Smith (1996) and Duncan and Simmons (1996) suggested that the former Soviet health care system fostered overdependent behavior of its citizens on their physicians making it difficult for them to make decisions about self-management of health behaviors and employ healthy lifestyles once they came to the US. For these immigrants, their model of health care was to rely on health care providers to make them feel better without their input. In the US system of health care, this translates into unhealthy practices and untimely use of health care services. The challenge to US nurses and physicians is to better understand the health care needs and behaviors of this culture to encourage timely use of preventive services such as cancer screening. The purpose of this study is to investigate the relationships among population characteristics, personal health behaviors of mammography, Pap smear, and breast self-exam, and health outcomes to better understand factors that influence their cancer screening behaviors.

BACKGROUND

Most health-related studies conducted with refugees and immigrants from the FSU have focused on the psychological crisis faced by these immigrants, rather than their health behaviors (Aroian, Khatutsky, Tran, & Balsam, 2001; Aroian, Patsdaughter, & Tran, 1998; Aroian, Spitzer, & Bell, 1996; Miller & Chandler, 2002; Miller, Chandler, Wilbur, & Sorokin, 2004; Miller, Sorokin, Wilbur, & Chandler, 2004; Rumbaut, 1977a; Tsytarev & Krichmar, 2000; Tran, Khatutsky, Aroian, Balsam, & Conway, 2000). Among the studies that examined the use of health care services and barriers to health care for FSU immigrants, few looked at the relationship between acculturation and health behaviors. Studies with other immigrants have found a correlation between acculturation, specifically English proficiency, and going for Pap smears and mammography (Suarez, 1994). For example, Suarez found that Mexican immigrants with poor English language skills went for Pap smears and mammography less often than women proficient in English. Harmon, Castro, and Coe (1996) found similar results for Hispanic women and cervical cancer screening. Among older immigrants, acculturation had a significant effect on health insurance; those who were more acculturated to the American lifestyle were also more likely to have health insurance and more likely to access health care services (Lum, 2004). However, other studies have found that acculturation levels were not consistent predictors of engaging in health promotion or health seeking behaviors (Meleis, Lipson, Muecke & Smith, 1998; Shin, Song, Kim, & Probst, 2005). Regardless of their acculturation status, immigrant women in previous studies were more likely to use culturally based health care such as herbs and teas, and to postpone using formal health care services until they had exhausted all other customary practices

The health behaviors of immigrants from the FSU may, in part, depend on how they expect a health care system to operate and their experiences with the Soviet health care system. Many scholars (Duncan & Simmons, 1996; Smith, 1996) suggested that the former Soviet health care system fostered the dependence of its citizens on physicians, making it difficult for them to make decisions about self-management of health and employ healthy lifestyles once they were in the US. Lipson, Weinstein, Gladstone, and Sarnoff (2003) found similar results, and referred to a “culture clash” (p. 869) between FSU immigrants view of individual responsibility for health and their experience of a government system that took care of them.

Studies of immigrant women from the FSU have found that these women engaged in health behaviors related to screening activities less than nonimmigrants. Duncan and Simmons (1996), for example, found that women from the FSU did not engage in blood pressure and cholesterol screening, Pap smears, or mammography, or perform self-breast exam. Ivanov and Buck (2002), who investigated the use of preventive health care services among women from Russia, Ukraine, and Belarus, found that these women tended to rely on their physicians to refer them for health screening and provide health education. The women did not practice breast self-examination or receive Pap smears or mammograms because they were not instructed to do so. When ill, they used massage, teas, and herbal remedies for minor illnesses before seeking health care services. Other studies (Lipson, Weinstein, Gladstone, & Sarnoff, 2003) have found similar results. The Slavic Community Health Survey conducted by the Spokane Regional Health District (2005) found that only 29% of women from the FSU reported ever having had a Pap smear. Other studies found that immigrants from the FSU were interested in their health but lacked the knowledge to achieve good health (Aroian, Khatuskyy, Tran & Balsam, 2001; Benisovich & King, 2003; Lipson et al., 2003). Benisovich and King (2003) found that immigrants from the FSU defined health status as the absence of illness, rather than a state of wellness, which might explain their minimal engagement in health behaviors such as mammography, Pap smear, and self breast exam.

Remenick (2003) found that Russian immigrants in Israel did not obtain breast cancer screening although mammography screening was free of charge every 2 years. Barriers included low priority for preventive health behaviors, lack of referral from a primary care provider, fear of a cancer diagnosis, apprehension about irradiation and pain associated with mammography, mistrust of cancer therapy, and a general fatalistic attitude toward health and illness. Elderly Russian immigrants believed that breast cancer affected only younger women and were ashamed to have gynecological checkups that included Pap smears.

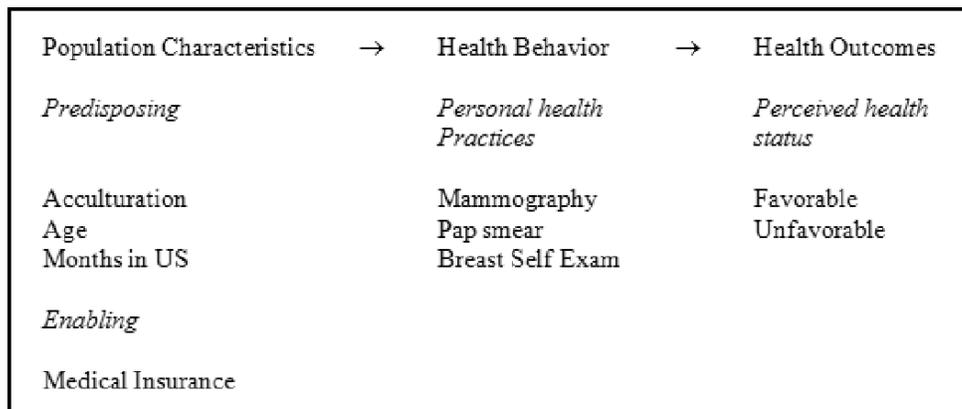
Lack of finances and insurance also influence immigrants from the FSU accessing health care services and engaging in health behaviors such as cancer screening. Carrasquillo, Carrasquillo, and Shea (2000) found that immigrants were much less likely to have employer-sponsored health insurance or government insurance and were more likely to be uninsured than US citizens. The Slavic Community Health Survey conducted by Spokane Regional Health District (2005) found that not having health insurance (58%) and the high cost of insurance (44%) were the reasons cited most often for not accessing health care. Studies conducted with immigrants from various countries have consistently found lack of health insurance to be a barrier to accessing health care services, including cancer screening (Choi, 2006; Documet & Sharma, 2004; Hosung, Howin, Kim, & Probst, 2005; Huang, Yu, & Ledsky, 2006; Pol, Adidam & Pol, 2002; Shin et al., 2005). Among older immigrants, health insurance was significantly related to their use of health services; those who had insurance accessed health care services more than those who did not (Birman, 1994). Healthy People 2010 has set the goals of a mammogram every 2 years for women 40 years of age and older and a Pap smear every 3 years for women 18 years and older (US Department of Health and Human Services, 2000). In addition, the Healthy People 2010 goal includes a target percentage of 97% for women receiving Pap smears and 70% for women receiving a mammogram by 2010. Given the lack of research conducted with immigrant women from the FSU and the low frequencies of their receiving Pap smears and mammograms, there is a need for more research to better understand factors that influence their engaging in cancer screening activities to provide them with culturally appropriate services and interventions.

THEORETICAL MODEL

The Behavioral Model of Health Services Use (Andersen, 1995) guided this research (Figure 1). The constructs in the original model are environment, population characteristics, health behaviors, and health outcomes. For purposes of this study, the constructs tested are population characteristics, health behaviors, and health outcomes. The model proposes that people's use of health services and health outcomes are related to factors (population characteristics and health behavior) that enable or impede their need for health care and their health outcomes (Andersen, 1995). Population characteristics are predisposing, enabling, and need characteristics. Predisposing characteristics are demographic characteristics (acculturation, length of time in US, and age).

Enabling characteristics are the resources or means available to individuals that influence their accessing health services (type of medical insurance). Health behavior refers to various personal health practices (mammography, Pap smear, breast self-exam). Health outcomes are the result of population characteristics and health behaviors and can be operationalized as perceived health status (by the individual). In this study, health outcomes were measured as perceived health status by the individual (favorable or unfavorable). Personal health practices defined in the Healthy People 2010 Objectives were used to measure health behaviors (mammograms and Pap smears; US Department of Health and Human Services, 2000). The American Cancer Society has changed the recommendation for breast self-exam to occasionally or not at all (American Cancer Society, 2003). However, in this study, breast self-exam was measured as monthly. The purpose of this study is to investigate the relationships among age, acculturation, availability of medical insurance, engaging in personal health practices of mammography, Pap smear, and breast self-exam and perceived health status among immigrant women from the FSU. The research questions for this study include:

1. What are the population characteristics (acculturation, age, months in the US and type of medical insurance), health behaviors (mammogram, Pap smear, and breast self-exam), and health outcomes (perceived health status of favorable or unfavorable) of immigrant women from the FSU?
2. Do population characteristics (acculturation, age, months in the US, and type of medical insurance) and health behaviors of immigrant women from the FSU (health practices of mammography, Pap smear, and breast self-exam) predict health outcomes (perceived health status of favorable or unfavorable)?



[Enlarge Image]

FIGURE 1 Adapted Behavioral Model of Health Services Use. Adapted from Andersen (1995).

METHODS

Design and Sample

The study used a descriptive correlational design. A power analysis with alpha at .05, medium effect size at .30 and a power of .80 was used to determine the sample size. Using the nQuery power analysis program (Nquery, 2006), an adequate sample size was determined to be 90. Previous research with this population achieved a 50% response rate (Miller & Cahndler, 2002; Miller, Chandler, Wilbur, & Sorokin, 2004; Miller, Sorokin, et al., 2004). Based on the minimum number of required respondents ($N = 90$) and expected response rate, a target number of 180 contacts were established.

The sample was a convenience sample of FSU immigrant women, 18 years and older, solicited from a community center for refugees and immigrants. The Center provides assistance to refugees and immigrants from various countries in locating housing, jobs, and grocery stores, etc. At the time of data collection, there were approximately 400 male and female refugees and immigrants from the FSU registered at the Center. Names and addresses of potential participants meeting the age criteria were obtained from the Center. From this

list, every second person was sent a letter inviting her to participate in the study. One hundred eighty letters were sent out to maximize the number of study participants. The letter contained details of the study and asked recipients to call the Center to set up an appointment. Data was collected at the Center over a period of four days. Human participants' protection was assured through International Review Board (IRB) approval at the University of North Carolina at Greensboro. The total sample was 99 participants, and all provided written consent.

Data Collection

The women were asked to complete both the Demographic Information for Immigrants from the Former Soviet Union Survey (DIFSU) and Language, Identity, and Behavior Acculturation Measure (LIB; Birman & Trickett, 2001). Because the literacy rate for this population is 95%, the surveys were self-administered. It took about 30 min to complete both surveys. Each participant received a \$10 gift card from Wal-Mart.

Measures

Because Russian was the major spoken and written language in all of the former Soviet Republics, all surveys were in Russian.

Demographic Information for Immigrants from the Former Soviet Union Survey

The Demographic Information for Immigrants from the Former Soviet Union Survey (DIFSU), developed for this study, collected basic demographic information from participants. It was first translated into Russian, and then back translated into English; conceptual agreement was obtained by two individuals fluent in both English and Russian. The DIFSU has 37 items and was used to collect data on cancer screening behaviors (mammography, Pap smear, BSE) and health outcomes (perceived health status).

LIB Acculturation Measure (Birman & Trickett, 2001)

Acculturation is a multidimensional and complex construct that has been measured in several ways including duration of residence in the US, ethnic identification, US language, speaking a native language, and preparing and consuming native foods (Ma et al., 2004; Roux et al., 2008). The LIB Acculturation Measure, developed by Birman (Birman & Trickett, 2001) was used in this study because it has been translated into Russian and tested with a Russian population. It measures acculturation as language (ability to communicate in new language), identity (extent of identity and membership with new culture), and behavior (degree to which the respondent engages in behaviors of the new culture). The LIB contains three major domains with six subscales that measure acculturation in terms of English language proficiency (Speak English with 5 items and Understand English with 4 items), American and Russian identity (American Identity with 4 items and Russian Identity with 4 items), and American and Russian behavior (Behave American with 11 items and Behave Russian with 11 items). Responses for the subscales range from 1 (*not at all*) to 4 (*very well*). Items on the scale include “I think of myself as being American; I think of myself as being Russian;” “How would you rate your ability to speak Russian?; How would you rate your ability to speak English?;” and “How much do you attend American concerts, exhibits, etc?; How much do you attend Russian concerts, exhibits, etc?” Mean scores for each subscale were used in the analysis, with higher scores indicating greater acculturation. Cronbach's alpha coefficients ranging from .77 to .85 were obtained for the Behavior subscale, .90 to .95 for Language, and .67 to .90 for Identity were achieved when testing for reliability (Birman, 2005; Birman & Trickett, 2001). In this study, Cronbach's alpha for the six subscales ranged from .62 to .97. The independent variables, cancer screening behaviors, were measured as engaging in these activities in accordance with the Healthy People 2010

and the American Cancer Society guidelines for various age groups of women (US Department of Health and Human Services, 2000). For women 40 years of age and older, receiving mammograms within 2 years; for women 18 years and older, Pap smears within 3 years, and conducting breast self-exam monthly was used in this study. The American Cancer Society has changed the recommendation for breast self-exam to occasionally or not at all (American Cancer Society, 2003). However, in this study, breast self-exam was measured as monthly. The dependent variable health outcome (perceived health status) was measured as favorable health (excellent and good) and unfavorable health (fair and poor) and was self reported.

Analytic Strategies

Descriptive statistics were conducted to describe characteristics of the sample, health behaviors and health outcomes in research question one. Pearson's correlation was used to examine correlations between variables and logistic regression analysis was used for research question two. The dependent variable, health outcome (perceived health status with 1 = *excellent and good*, and 0 = *fair and poor*) was regressed on two blocks of predictors (population characteristics and health behaviors). The population characteristics were entered in the first step of the regression model to control for covariance followed by health behavior. The independent variables to be associated with health outcomes were the population characteristics and health behaviors. The population characteristics measured as acculturation (LIB survey), age, number of months in the US and type of insurance (having no insurance; government insurance, i.e., Medicare or Medicaid; and private insurance), were entered at step one in the regression analysis. Health behaviors (personal health practices of engaging in mammography, Pap smear, and breast self-exam) were entered at step two in the model. All analyses were conducted using SPSS 15.0 (SPSS).

RESULTS

Characteristics of the Sample

The age range of participants was 18 to 83 years, 50% of the participants were 40 years of age and older (Table 1). The range for the number of years or months in the US was from 1 month to 16 years, with about 50% living in the US 5 years or less. The majority identified themselves as Russian, Ukrainian, or Belarusian; 33% were Jewish; 29% Russian Orthodox; and 19% Baptist, Pentecostal, or Catholic; and the remaining 17% identified themselves as having no religion. The majority of participants (87%) had either vocational, college, or institute education and were married (83%). Only about 52% worked either full-time or part-time. Total household income was low, with 57% reporting income of \$19,999 or less. Sixty-one percent of the participants perceived their health as either excellent or good. The leading medical problem was hypertension, followed by arthritis and heart disease. Fifteen percent of the participants had no health insurance, 28% indicated Medicare or Medicaid as their main source of medical insurance, and 51% indicated they had private insurance. Over half (56%) of the women said that they did not perform monthly breast self-exams. Fifty-seven percent of those 40 years of age and older had a mammogram within the last 2 years, and 57 % of those 18 years of age and older had a Pap smear within 3 years.

LIB Survey

The mean scores for the 6 subscales, as seen in Table 2, indicate the levels of acculturation. Higher mean scores indicate higher levels of acculturation. As expected, Russian language had the highest mean score.

Pearson's Correlations Between Variables

As seen in Table 3, the longer women were in the US the more likely they were to receive a mammogram ($p < .01$) and consider themselves as behaving American ($p < .05$). Older women were more likely to be insured ($p < .05$) and receive a mammogram ($p < .05$). Younger women were more likely to receive a Pap smear ($p < .01$) and consider their health status as good or excellent ($p < .01$). Women who had insurance were more likely to have a Pap smear ($p < .05$). The only acculturation measure that was significantly related to behaviors and outcomes was English language. Women who spoke and understood English better were more likely to perform breast self-exam ($p < .05$) but they considered their health status as poor or fair ($p < .01$). They also tended to be older ($p < .05$).

TABLE 1 Characteristics of the Sample

	<i>N</i>	%
Age		
Less than 40	50	50.5
40 +	49	49.5
Education		
Less than 12	13	13.3
Vocational	24	24.5
College/Institute	61	62.2
Marital status		
Single	11	11.2
Married	81	82.7
Widow/Widower	5	5.1
Other	1	1.0
Work status		
Full-time	34	35.8
Part-time	15	15.8
Not working	46	48.4
Income level		
Less than \$19,999	43	57.3
\$19,999 +	32	42.7
Health status		
Good/excellent	60	60.6
Fair/poor	39	39.4
Illnesses		
Arthritis	12	12.1
Hypertension	14	14.1
Heart disease	6	6.1
Health insurance		
Private	50	50.5
Medicare/Medicaid	34	34.3
None	15	15.2
Mammograms—Within 2 years		
Yes	28	57.1
No	21	42.9

TABLE 1 Characteristics of the Sample

	<i>N</i>	<i>%</i>
Pap smear—Within 3 years		
Yes	56	57.1
No	42	42.9
Breast self-exam—Monthly		
Yes	42	44.2
No	53	55.8

TABLE 2 Mean Scores for Acculturation Variables

<i>Acculturation Variable</i>	<i>M</i>	<i>SD</i>
English/American		
Language	2.83	.93
Identity	2.42	.73
Behavior	3.03	.68
Russian		
Language	3.86	.34
Identity	2.66	.82
Behavior	2.33	.57

Logistic Regression

The overall model of 11 variables was statistically significant in predicting health outcomes (-2 Log Likelihood = 61.515; $\chi^2(3) = 9.56, p < .05$). The model correctly classified 63.8% of the cases. The logistic regression (Table 4) indicates that age ($p < .05$) and having mastered the English language significantly ($p = .038$) predicted health status. The odds ratio for age ($e^B = .908$) and Language American ($e^B = .192$) were both below 1, indicating that as age and American language skills increased by 1, the odds of being classified as in good or excellent health decreased by the respective ratio. Younger women and those with less English language skills were more likely to perceive themselves having good or excellent health status.

DISCUSSION

The results of this study are consistent with the findings of other studies conducted with immigrant women that found minimal engagement in health promotion and cancer screening behaviors and the need for early interventions to assist immigrants in achieving positive health outcomes. The findings also reflect the FSU health care system, which has been described as one that fosters dependence of citizens on their physicians (Duncan & Simmons, 1996) and creates a “culture clash” (p. 869) between their past experiences and individual responsibility for health (Lipson et al., 2003). For example, working women in the FSU are mandated to receive yearly Pap smears by their places of employment (S. Zorina, personal communication, April 20, 2006). However, breast self-exam is not taught, and mammography is reserved for diagnostic purposes, rather than screening. In addition, few health-related written materials are available for patients. This may account for the finding that younger immigrant women were more likely to go for a Pap smear, as this was a familiar practice for them when in the FSU. However, because they were not familiar with mammography for screening purposes, they were less likely to receive a timely mammogram. Rather, older women and those in the US longer were more likely to receive a mammogram, indicating growing understanding of the importance of mammography for screening purposes. Healthy People 2010 has set the target of 70% of women aged 40 years and older receive a mammogram within two years (US Department of Health and Human Services, 2000). As

found in this study, only 57% of immigrant women received a timely mammogram, highlighting a group of women that needs assistance in understanding the importance of a mammogram. Having health insurance was a significant factor in receiving a Pap smear. Because the income level of these immigrants tended to be low, it is understandable that paying for a Pap smear was not a priority. Healthy People 2010 target is for women over 18 years of age receiving a Pap smear within three years is 90% (U.S. Department of Health and Human Services, 2000). In this study, only 57% of women received a timely Pap smear, once again highlighting a group of women in need of assistance in understanding the importance of a Pap smear. Women with better English language skills were more likely to conduct breast self-exam, but tended to have lower perceived health status. Their increased ability to read English provided them with opportunities to read about breast self-exam and engage in this health promotion behavior. Although the majority of participants were educated above the 12th grade, their understanding of the importance of cancer screening behaviors other than receiving a Pap smear reflects the health care practice in the FSU. Because mammography and breast self-exam were not routinely performed or taught in the FSU, the only way women can learn about them once in the US is when their English language skills increase to enable them to read health care information and speak with their health care providers.

TABLE 3 Correlations Matrix for Variables in the Model

<i>Variables</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>13</i>
* <i>p</i> < .05.													
** <i>p</i> < .01.													
1. Months in United States	—	.31**	.10	.16	.09	.21*	.15	.06	.05	.38**	.10	.03	-.12
2. Age		—	.20*	.21*	.01	.21*	.11	.16	.11	.22*	.02	-.26**	-.55**
3. Insurance			—	-.16	-.07	-.15	.02	.09	.12	.16	.01	.20*	-.05
4. Language: English				—	.44**	.80**	.10	-.03	-.04	.19	.21*	.04	-.27**
5. Identity: American					—	.50**	-.03	-.40**	-.12	.07	-.05	-.03	-.10
6. Behavior: American						—	.20*	-.04	-.18	.17	.16	.002	-.13
7. Language: Russian							—	.23*	.13	.03	-.02	-.09	-.01
8. Identity: Russian								—	.23*	.13	.10	.04	-.10
9. Behavior: Russian									—	-.03	.08	.03	.06
10. Mammogram										—	.39**	.40**	-.11
11. Breast self-exam											—	.43**	-.01
12. Pap smear												—	.18
13. Health status													—

TABLE 4 Logistic Regression Coefficients for Full Model (N = 99)

<i>Variables</i>	<i>Odds Ratio</i>	<i>95% CI</i>	<i>p</i>
* <i>p</i> < .05.			
** <i>p</i> < .01.			
Mammogram	.123	.01-2.03	.143
Pap smear	1.25	.11-14.12	.855
Breast self-exam	.20	.02-1.60	.130
Age	.91	.82- .99	.047*
Months in United States	.10	.97-1.01	.83
Language: English	.19	.04-.91	.038*
Identity: American	.19	.02- 1.22	.08
Behavior: American	16.39	.82- 328.07	.07

TABLE 4 Logistic Regression Coefficients for Full Model (N = 99)

<i>Variables</i>	<i>Odds Ratio</i>	<i>95% CI</i>	<i>p</i>
Language: Russian	32.29	.29-3500.34	.15
Identity: Russian	.19	.03-1.07	.061
Behavior: Russian	1.42	.21-9.38	.71
Constant	.02		.62

Surprisingly, the strongest predictors of self-reported positive health outcomes (good or excellent health status) were being younger and having less English language proficiency. It may be that the health of the younger immigrant population was better than that of the older population. It may also reflect findings from other studies that indicate as acculturation in the US culture increases, perceived and actual health status decreases (Ma et al., 2004; Roux et al., 2005).

LIMITATIONS

The major limitations in this study are a convenience sample and a sample from one location. Although every second name on the residential list was contacted in selection of participants, a randomized sample drawn from various parts of the US would provide a clearer understanding of the health behaviors of women from the FSU. The majority of participants in this study were educated above the 12th grade. Obtaining a sample more diverse in education may indicate different findings. Last, studying younger and older immigrant women populations separately would provide important information on how best to assist each group in learning about health promotion and cancer screening behaviors. In spite of these limitations, this study is one of the first studies that investigates immigrant women from the FSU and their cancer screening behaviors related to obtaining mammography and Pap smears, and practicing breast self-exam.

CONCLUSION

Given the high incidence of breast cancer in the US, the results of this study highlight a group of women in need of interventions to help them understand the value of cancer screening behaviors. The results also highlight the need to understand the health care systems from which ethnic populations migrate to decrease their barriers to engaging in cancer screening behaviors once in the US. For immigrant women from the FSU, minimal interventions such as providing health promotion and cancer screening literature at physicians' offices and clinics in the Russian language are needed. This is especially true for older women who have more difficulty in learning a new language and in taking responsibility for their health. Physicians' offices could strive to have translators available who understand medical terminology. This would decrease the chance of misunderstanding between patient and health care practitioner. It would also discourage the practice of immigrants bringing their young children as translators to physicians' offices. A reminder for obtaining a mammogram written in the Russian language and sent to them from the physician's office is also a useful intervention. Health related literature in the Russian language needs to be available during their initial physical screenings in the US. The literature should include information on maneuvering through the health care system and taking individual responsibility for health. Health care providers need to be versed in the cultures of their patients and the health care systems they have experienced. This will enable them to individualize the care they provide to ethnic groups. Health behaviors including cancer screening behaviors are learned behaviors that can be changed when appropriate interventions are in place to minimize barriers and assist immigrants to understand the life saving value of these activities.

REFERENCES

- 1. http://www.cancer.org/docroot/NWS/content/NWS_1_1x_Updated_Breast_Cancer_Screening_Guidelines_Released.asp — American Cancer Society. (2003). Updated breast cancer screening guidelines released. Retrieved November 17, 2008 from
- 2. Andersen, R. (1995) Revisiting the behavioral model and access to medical care: Does it matter?. *Journal of Health and Social Behavior* 36 , pp. 1-10.
- 3. Aroian, K. , Khatuisky, G. , Tran, T. and Balsam, A. (2001) Health and social service utilization among elderly immigrants from the former Soviet Union. *Journal of Nursing Scholarship* 33 , pp. 265-271.
- 4. Aroian, K. , Patsdaughter, C. and Tran, T. (1998) Predicting psychological distress among former Soviet immigrants. *International Journal of Social Psychiatry* 44 , pp. 284-294.
- 5. Aroian, K. , Spitzer, A. and Bell, M. (1996) Family stress and support among former Soviet immigrants. *Western Journal of Nursing research* 18 , pp. 655-674.
- 6. Benisovich, S. and King, A. (2003) Meaning and knowledge of health among older adult immigrants from Russia: A phenomenological study. *Health Education Research* 18 , pp. 135-144.
- 7. Birman, D. Trickett, E. , Trickett, R. , Watts, R. and Birman, D. (eds) (1994) Acculturation and human diversity in a multicultural society. *Human diversity: Perspectives on people in context* pp. 261-284. Jossey Bass , San Francisco
- 8. Birman, D. and Trickett, E. (2001) Cultural transitions in first-generation immigrants: Acculturation of Soviet Jewish refugee adolescents and parents. *Journal of Cross-Cultural Psychology* 32 , pp. 456-477.
- 9. Birman, D. , Trickett, E. and Buchanan, R. (2005) A tale of two cities: Replication of a study on the acculturation and adaptation of immigrants adolescents from the former Soviet Union in a different community context. *American Journal of Community Psychology* 35 , pp. 83-101.
- 10. Birman, D. and Trickett, E. (2001) Cultural transitions in first-generation immigrants: Acculturation of Soviet Jewish refugee adolescents and parents. *Journal of Cross-Cultural Psychology* 32 , pp. 456-477.
- 11. Carrasquillo, O. , Carasquillo, A. and Shea, S. (2000) Health insurance coverage of immigrants living in the United States: Differences by citizenship status and country of origin. *American Journal of Public Health* 90 , pp. 917-923.
- 12. Choi, S. (2006) Insurance status and health service utilization among newly-arrived older immigrants. *Journal of Immigrant and Minority Health* 8 , pp. 149-160.
- 13. Documet, P. and Sharma, R. (2004) Latino's health care access: Financial and cultural barriers. *Journal of Immigrant Health* 6 , pp. 5-13.
- 14. Duncan, L. and Simmons, M. (1996) [Health practice among Russian and Ukrainian immigrants.](#) *Journal of Community Health Nursing* 13 , pp. 129-137.
- 15. Harmon, M. , Castro, F. and Coe, K. (1996) Knowledge, beliefs, and behaviors of Hispanic women. *Women's Health* 24 , pp. 37-57.
- 16. Hosung, S. , Howin, S. , Kim, J. and Probst, J. (2005) Insurance, acculturation, and health service utilization among Korean-Americans. *Journal of Immigrant Health* 7 , pp. 65-74.
- 17. Huang, Z. , Yu, S. and Ledsky, R. (2006) Health status and health service access and use among children in US immigrant families. *American Journal of Public Health* 96:4 , pp. 634-640.
- 18. Ivanov, L. and Buck, K. (2002) Health care utilization patterns of Russian-speaking immigrant women across age groups. *Journal of Immigrant Health* 4 , pp. 17-27.
- 19. Lipson, J. , Weinstein, H. , Gladstone, E. and Sarnoff, R. (2003) Bosnian and Soviet refugees' experiences with health care. *Western Journal of Nursing Research* 25 , pp. 854-871.
- 20. Lum, T. (2004) Health disparities among immigrant and non-immigrant old people: The effects of acculturation and human capital. *Gerontologist* 44 , pp. 391-392.
- 21. Ma, G. S. , Tan, Y. , Toubbeh, J. I. , Su, X. , Shive, S. E. and Lan, Y. (2004) Acculturation and smoking behavior in Asian-American populations. *Health Education Research* 19 , pp. 615-621.

- 22. Meleis, A. , Lipson, J. , Muecke, M. and Smith, G. (1998) *Immigrant women and their health: An olive paper* Sigma Theta Tau International Center Nursing Press , Indianapolis, IN
- 23. Miller, A. and Chandler, P. (2002) Acculturation, resilience, and depression in midlife women from the former Soviet Union. *Nursing Research* 51 , pp. 26-32.
- 24. Miller, A. , Chandler, P. , Wilbur, J. and Sorokin, O. (2004) Acculturation and cardiovascular disease risk in midlife immigrant women from the former Soviet Union. *Progress in Cardiovascular Nursing* 19:2 , pp. 47-55.
- 25. Miller, A. , Sorokin, O. , Wilbur, J. and Chandler, P. (2004) Demographic characteristics, menopausal status, and depression in midlife immigrant women. *Women's Health Issues* 14 , pp. 227-234.
- 26. <http://www.statsol.ie/nquery/nquery.htm> — Nquery. (2006). Nquery Advisor Release 6.10. Retrieved May 16, 2009, from
- 27. Persky, I. and Birman, D. (2005) Ethnic identity in acculturation research; A study of multiple identities of Jewish refugees from the former Soviet Union. *Journal of Cross-Cultural Psychology* 36 , pp. 557-572.
- 28. Pol, L. , Adidam, P. and Pol, J. (2002) Health insurance status of the adult, nonelderly foreign born population. *Journal of Immigrant Health* 4 , pp. 103-110.
- 29. 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 , pp. 153-163.
- 30. Roux, D. , Detrano, R. , Jackson, S. , Jacobs, D. R. , Schreiner, P. J. and Shea, S. (2005) Acculturation and Socioeconomic position as predictors of coronary calcification in a multiethnic sample. *Circulation* 112 , pp. 1557-1565.
- 31. Rumbaut, R. (1997a) Assimilation and its discontents: Between rhetoric and reality. *International Migration Review* 31 , pp. 923-960.
- 32. Rumbaut, R. (1997b) Paradoxes (and orthodoxyes) of assimilation. *Social Perspective* 40 , pp. 483-511.
- 33. Schmidley, A. and Gibson, C. (1999) *Profile of the foreign-born population in the States: 1997* pp. 23-195. US Government Printing Office , Washinton, DC — Report No. Series P
- 34. Shin, H. , Song, H. , Kim, J. and Probst, J. (2005) Insurance, acculturation, and health service utilization among Korean-Americans. *Journal of Immigrant Health* 7:2 , pp. 65-74.
- 35. Simich, L. , Beiser, M. and Mawani, F. (2003) Social support and the significance of shared experience in refugee migration and resettlement. *Western Journal of Nursing Research* 25 , pp. 872-891.
- 36. Smith, L. (1996) New Russian immigrants: Health problems, practices, and values. *Journal of Cultural Diversity* 3:3 , pp. 68-73.
- 37. <http://www.srhd.org/documents/PublicHealthData/SlavicCommunityReport.pdf> — Spokane Regional Health District: Slavic Health Survey. (2005). Retrieved August 25, 2007 from
- 38. Suarez, L. (1994) Pap smear and mammogram screening in Mexican-American women: The effects of acculturation. *American Journal of Public Health* 17 , pp. 742-746.
- 39. Tran, T. , Khatutsky, G. , Aroian, K. , Balsam, A. and Conway, K. (2000) [Living arrangements, depression, and self-esteem in elderly Russian-speaking immigrants.](#) *Journal of Gerontological Social Work* 33:2 , pp. 63-77.
- 40. Tsytsarev, S. and Krichmar, L. (2000) Relationship of perceived culture shock, length of stay in the US, depression, and self-esteem in elderly Russian-speaking immigrants. *Journal of Social Distress and the Homeless* 9 , pp. 35-49.
- 41. www.imaginis.com/breasthealth/statistics.asp#1 — Women's Health Resource. (2008). Breast cancer: Statistics on incidence, survival and screening. Retrieved November 14, 2008 from
- 42. US Department of Commerce (1999) *Statistical abstract of the United States* , 119 ed. . Government Printing Office , Washington, DC
- 43. US Department of Health and Human Services (2000) Cancer. *Healthy People 2010* , Volume I . US Department of Health and Human Services , Washington, DC — Conference Edition,; pp. 3-3-3-34

