

## Ethnic Differences in Preventive Medicine: the Example of Jewish Ethiopian Women in Israel

Howard Tandeter MD<sup>1,2</sup>, Iana Masandilov MD<sup>1,2</sup>, Irena Kemerly MD<sup>1,2</sup> and Aya Biderman MD<sup>1,2</sup>

<sup>1</sup>Department of Family Medicine, Siaal Research Center for Family Medicine and Primary Care, Faculty of Health Sciences, Ben-Gurion University of the Negev, Beer Sheva, Israel

<sup>2</sup>Clalit Health Services – Southern District, Beer Sheva, Israel

**Key words:** preventive medicine, Ethiopians, mammography, minority, screening

### Abstract

**Background:** Studies have found ethno-cultural disparities in health care delivery in different countries. Minority populations may receive lower standards of care.

**Objectives:** To test a hypothesis that Jewish Ethiopian women may be receiving fewer preventive recommendations than other women in Israel.

**Methods:** A telephone survey was conducted using a structured questionnaire designed specifically for this study in Hebrew, Russian and Amharic (Semitic language of Ethiopia). The study group included 51 post-menopausal women of Ethiopian origin, aged 50–75. The control group included 226 non-Ethiopians matched for age, some of whom were immigrants from the former Soviet Union. The questionnaire dealt with osteoporosis and breast cancer screening and prevention.

**Results:** All the parameters measured showed that the general population received more preventive recommendations and treatment than did Jewish Ethiopian women, including manual breast examination, mammography, osteoporosis prevention, bone density scans, and recommendations for a calcium-rich diet, calcium supplementation, hormone replacement therapy, biphosphonates and raloxifen. On a logistic regression model the level of knowledge of the Hebrew language, age, ethnicity and not visiting the gynecologist were significantly related to not having received any preventive medicine recommendations.

**Conclusions:** Differences in cultural backgrounds and language between physicians and their patients may obstruct the performance of screening and preventive medicine. Recognizing this potential for inequity and using methods to overcome these barriers may prevent it in the future.

*IMAJ 2007;9:452–456*

may be receiving fewer preventive recommendations than other women in Israel – in areas such as postmenopausal osteoporosis, HRT and early detection of breast cancer.

### Subjects and Methods

A telephone survey was performed using a structured questionnaire designed specifically for this study and written in three languages: Hebrew, Russian and Amharic. The interviews were performed in the patient's preferred language. The initial sample included all 121 post-menopausal women of Ethiopian origin, aged 50–75, listed in three large primary care clinics of Clalit Health Services – Southern District in the city of Beer Sheva (Clalit is the major health management organization in Israel). The control group included a random sample of 296 non-Ethiopian post-menopausal women of the same age group from the same clinics, including a large group of immigrants from the former Soviet Union, reflecting the characteristics of the local population. The questionnaire evaluated demographic characteristics, education, level of Hebrew knowledge, and employment status. Specific questions dealt with osteoporosis and breast cancer screening and prevention. Patients were asked whether their physicians had ever discussed these two issues with them, whether they were referred any time in the past for a mammography (when, and how often) and bone density scans, and whether calcium supplements, hormone replacement, or medications to prevent and treat osteoporosis were recommended.

### Statistical analysis

Analysis of the results included descriptive statistics of the variables using chi-square tests, whereby  $P < 0.05$  was considered statistically significant. A logistic regression model was constructed to evaluate the predicting variables determining why women would not be offered any recommendation for preventive screening. This variable was composed as a score of all preventive recommendations to women, whereby 1 indicated not receiving any recommendation and 0 as receiving at least one recommendation for preventive screening. The preventive screening recommendations included in the score were: milk products and diet rich in calcium, calcium treatment, mammography screening, osteoporosis consultation, HRT, alendronate treatment, raloxifen treatment, bone density test.

Inequalities in health care are of major concern among health organizations. One of the areas of inequality in many countries is ethno-cultural disparities in health care. Among women, racial differences were found in breast cancer screening by mammography and in the use of hormone replacement treatment. These differences may be related to language barriers, lack of knowledge, and differences in attitudes, but the result is that ethnic minority populations may receive lower standards of care, leading to lower health status and even to higher mortality among migrant groups than the local population [1-9].

The present study was designed to test a hypothesis, generated by observation in primary care, that Jewish Ethiopian women

HRT = hormone replacement therapy

## Results

The initial sample included 121 women of Ethiopian origin and 296 non-Ethiopian women. The refusal rate in both groups was 12%. However, the final group included only 50 women of Ethiopian origin for various reasons: incorrect age recorded (not unusual for this immigration group) – 21%, could not be located (wrong phone number, address, etc.) – 20%, and inability to comprehend the questionnaire despite translation – 5%.

Table 1 presents the demographic characteristics of the study population. Both groups were of the same average age (59–61 years). Ethiopian women were of lower educational and socio-economic status and had a poorer knowledge of the Hebrew

language. All Ethiopian women had less than 12 years of education ( $P < 0.001$ ) compared to only 35% in the control group. The majority of Ethiopian women noted that their level of Hebrew was very poor – 89% compared to 26% in the control group ( $P < 0.001$ ). Nearly 70% in both groups were married although more Ethiopian women were divorced (20% vs. 6%,  $P < 0.005$ ) and fewer were widowed (11% vs. 21%,  $P < 0.005$ ). They were also of lower economic status, with more Ethiopian women noting below-average income for the family (100% vs. 63%,  $P < 0.001$ ), and more were receiving unemployment benefits (96% vs. 17%,  $P < 0.001$ ) or other National Insurance payments (98 vs. 76%,  $P < 0.005$ ).

Table 2 presents the women's perceptions of their relation-

**Table 1.** Sociodemographic characteristics of the study population

	Ethiopian		Non-Ethiopian		Total		<i>P</i>
	N	%	N	%	N	%	
<b>Age (yrs)</b>							
Range	50–72		51–74		50–74		NS
Average $\pm$ SD	59.8 $\pm$ 6.43		61.33 $\pm$ 6.23		61.08 $\pm$ 6.28		(mis=2)
<b>Education (yrs)</b>							
< 12	50	100%	78	35%	128	47%	
12–15 years	0	0%	114	51%	114	42%	
> 16	0	0%	31	14%	31	11%	< 0.001
Total	50		223		273		(mis=4)
<b>Country of birth</b>							
Israel	0	0%	6	3%	6	2%	
Ethiopia	51	100%	0	0%	51	18%	
East Europe + Russia	0	0%	111	49%	111	40%	
Other	0	0%	108	48%	108	39%	< 0.001
Total	51		225		276		(mis=1)
<b>No. of years in Israel</b>							
< 10	2	0%	30	14%	32	12%	
> 10	49	100%	188	86%	237	88%	< 0.05
Total	51		218		269		(mis=8)
<b>Marital status</b>							
Married	32	68%	160	72%	192	70%	
Divorced	12	20%	13	6%	25	9%	
Widowed	7	11%	47	21%	54	20%	
Single	0	0%	3	1%	3	1%	< 0.005
Total	51		223		274		(mis=3)
<b>Religiousness</b>							
Traditional	16	34%	114	52%	130	48%	
Secular	0	0%	70	32%	70	26%	
Religious + ultra-Orthodox	35	66%	34	16%	69	26%	< 0.001
Total	51		218		269		(mis=8)
<b>Average income</b>							
Below average	51	100%	136	63%	187	69%	
Around average	0	0%	63	29%	63	24%	
Above average	0	0%	17	8%	17	7%	< 0.001
Total	51		216		267		(mis=10)

NS = not significant

**Table 2.** Relationship with the family physician

	Ethiopian		Non-Ethiopian		Total		<i>P</i>
	N	%	N	%	N	%	
<b>How long have you been with your current family physician?</b>							
Less than one year	2	0%	20	9%	22	8%	
A year to two	5	11%	14	6%	19	7%	
Two years and more	44	86%	192	85%	236	85%	NS
Total	51		226		277		(mis=0)
<b>Does your family physician speak your mother tongue?</b>							
Yes	0	0%	122	54%	122	46%	
No	51	100%	104	46%	155	54%	< 0.001
Total	51		226		277		(mis=0)
<b>How much of the doctor's explanations do you understand? (with the help of a translator)</b>							
Do not understand	0	0%	2	2%	2	1%	
Understand little	9	18%	6	6%	15	10%	
Understand well	36	70%	43	43%	79	53%	
Understand very well	6	12%	48	48%	54	36%	< 0.001
Total	51		99		150		(mis=127)
<b>How much of your complaints and condition does the doctor understand?</b>							
Does not understand	2	4%	2	1%	4	2%	
Understands little	2	4%	6	3%	8	4%	
Understands well	27	53%	59	34%	86	38%	
Understands very well	20	39%	108	62%	128	57%	NS
Total	51		175		226		(mis=51)
<b>Do you have a gynecologist?</b>							
Yes	18	35%	102	45%	120	43%	
No	33	65%	124	55%	157	57%	NS
Total	51		226		277		(mis=0)
<b>Do you have prescheduled visits with your gynecologist or upon demand?</b>							
Only when needed	15	29%	83	37%	98	35%	
Also have preplanned visits	3	6%	75	33%	78	28%	
Do not visit at all	33	65%	68	30%	101	36%	< 0.001
Total	51		226		277		(mis=0)

ship with their physician. In both groups, most women had been with the same physician for more than 2 years. None of the physicians spoke Amharic (Semitic language of Ethiopia), whereas 54% of the physicians spoke the patient's mother tongue – Russian, Spanish, or other languages. Although both groups felt that their physician understood their condition well or very well, their own understanding of the doctors' explanations was not as good: among Ethiopian women 18% understood only a little of the physician's explanations, even with the help of a translator, compared to 8% among the non-Ethiopian women ( $P < 0.001$ ). Regarding the women's relationship with a gynecologist, there were no differences between the groups in the number of women who declared they had a gynecologist; however, 65% of Ethiopian women had never visited a gynecologist, compared to 30% of the non-Ethiopian women ( $P < 0.001$ ).

**Table 3.** Recommendations for treatment by the family physician

	Ethiopian		Non-Ethiopian		Total		<i>P</i>
	N	%	N	%	N	%	
<b>Has the physician talked with you about osteoporosis</b>							
Yes	6	14%	112	50%	118	7%	
No	43	88%	114	50%	157	57%	< 0.001
Total	49		226		275		(mis=2)
<b>Have you received a recommendation for HRT?</b>							
Yes	1	2%	66	29%	67	24%	
No	50	98%	159	71%	209	76%	< 0.001
Total	51		225		276		(mis=1)
<b>Did you receive a recommendation for alendronate treatment?</b>							
Yes	0	0%	22	10%	22	8%	
No	51	100%	203	90%	254	92%	< 0.05
Total	51		225		276		(mis=1)
<b>Did you receive a recommendation for Evista® treatment?</b>							
Yes	0	0%	17	8%	17	6%	
No	51	100%	208	92%	259	94%	< 0.05
Total	51		225		276		(mis=1)
<b>Have you undergone a breast examination by your physician?</b>							
Yes	8	16%	121	54%	129	47%	
No	43	84%	105	46%	148	53%	< 0.001
Total	51		226		277		(mis=0)
<b>Have you received a recommendation or performed a bone density test?</b>							
Yes	4	8%	106	48%	110	40%	
No	46	92%	116	52%	162	60%	< 0.001
Total	50		222		272		(mis=5)

Tables 3 and 4 summarize the differences in preventive medicine recommendations and performance in the two groups. Ethiopian women reported significantly fewer interventions in all preventive measures, both in the educational and the screening tests recommended (mammography, bone density). None of the Ethiopian women were recommended medications for osteoporosis (alendronate or raloxifen). Of those women who did receive preventive advice, most complied – whether it was a mammogram, a calcium supplement or calcium-rich diet, or a bone density test.

Due to the large differences in sociodemographic characteristics between the two groups, a logistic regression model was developed for predicting the significant variables of women

**Table 4.** Recommendation vs. compliance

	Ethiopian		Non-Ethiopian		Total		<i>P</i>
	N	%	N	%	N	%	
<b>Have you received a recommendation from a physician for a diet rich in calcium and milk products?</b>							
Yes	9	18%	80	35%	89	32%	
No	42	82%	146	65%	188	68%	< 0.05
Total	51		226		277		(mis=0)
<b>Did you follow these recommendations? (of those who received them)</b>							
Yes	8	89%	75	95%	83	94%	
No	1	11%	4	5%	5	6%	NS
Total	9		79		88		(mis=1)
<b>Have you received a recommendation from a physician for calcium treatment?</b>							
Yes	1	2%	90	40%	91	33%	
No	50	98%	135	60%	185	67%	< 0.001
Total	51		225		276		(mis=1)
<b>Did you follow these recommendations? (of those who received them)</b>							
Yes	1	100%	76	88%	77	89%	
No	0	0%	10	12%	10	11%	NS
Total	1		86		87		(mis=4)
<b>Have you received a recommendation for mammography?</b>							
Yes	23	45%	200	88%	223	81%	
No	28	55%	26	12%	54	19%	< 0.001
Total	51		226		277		(mis=0)
<b>Did you receive a referral letter for mammography?</b>							
Yes	26	52%	125	56%	151	55%	
No	24	48%	98	44%	122	45%	NS
Total	50		223		273		(mis=4)
<b>Did you have a mammography?</b>							
Yes	22	81%	190	89%	212	88%	
No	5	19%	23	21%	28	12%	NS
Total	27		213		240		(mis=37)

who are not likely to receive any preventive recommendation. Knowledge of the Hebrew language was found to be significant, with poorer knowledge relating to an increased likelihood of not having received a recommendation (odds ratio 8.49, 95% confidence interval 2.64–27.33); the likelihood of receiving a recommendation was found to increase with age (0.915, 0.85–0.98), and women of Ethiopian descent were also less likely to receive a recommendation for preventive medicine (2.77, 1.03–7.46). Among the variables associated with the women's relationship with her physician, the only significant finding was that women who visited a gynecologist (whether preplanned or on an as-needed basis) had a higher chance of receiving a preventive recommendation, compared to those who never visited a gynecologist ( $P < 0.05$ ).

## Discussion

The results of this study show a clear difference between the two groups studied. Women of Ethiopian origin receive fewer postmenopausal preventive medicine recommendations and treatment (prevention and treatment of osteoporosis and early detection of breast cancer) than non-Ethiopian women in Israel.

Previous reports suggest that the use of preventive measures differs by ethnicity: in the area of HRT, Brown et al. [1] found that physicians from general internal medicine, family medicine, and gynecology practices in an academic medical center in the United States were more likely to prescribe HRT for white women than for African-American, Asian, Latin, or Soviet immigrants. Schneider and colleagues [2] found that compared with white women, the African-American women studied were less likely to discuss HRT with their physicians. Marsh et al. [3] reported that the percentage of visits by black women aged 45–64 to hospital outpatient departments and office-based physicians where prescriptions for HRT were reported (4.5%) was roughly half that of white women (9.7%). In the UK, Lydakis and team [4] found that ethnicity, age, and educational level have an impact on women's awareness of and attitudes towards HRT. In a report from Israel [5], 50% of the Arab women interviewed had never received information or been counseled about menopause and HRT, compared to 18% of the Jewish women. About 40% of Jewish women used HRT as compared to 24% of the Arab women. It should be noted that these studies were performed prior to the Women's Health Initiative Study of hormone substitution that led to discontinuation of combination HRT therapy by physicians [6]. Therefore, their relevance to the present study remains in that they demonstrate differences in care provided to immigrant versus non-immigrant women according to the recommendations at the time the study was performed.

In the area of breast cancer screening, Coleman and O'Sullivan [7] found that after Medicare funding for screening of mammography in the U.S., the percent reporting a mammogram increased for white women but not for black women. Physicians recommended mammography more often if women were white, married, educated beyond high school, and had an annual income greater than \$20,000. Gwyn et al. [8] also found racial differences in diagnosis, treatment, and clinical delays in a population-based study of patients with newly diagnosed breast carcinoma. Compared

with white women, African-American women were more likely to experience delays in diagnosis and treatment. Access to care and the poverty index partially accounted for these differences in delay time; however, racial differences in terms of delayed treatment and diagnosis remained even after adjustment for contributing factors. Black women in the U.S. are less likely than white women to be aware of and undergo breast cancer screening tests. Women with low educational attainment, low cancer knowledge, and no usual source of care are less likely to be compliant to clinical breast examinations or mammograms [9]. According to Qureshi and associates [10], ethnicity apparently does not influence a woman's likelihood of obtaining mammography screening, but access to health care and insurance and engaging in other healthy behaviors do.

The reasons that might explain our findings are multifactorial, and probably reflect a failure to initiate a discussion on these subjects on the part of patients, physicians, or both. Differences in the demographic characteristics of both groups may explain, in part, a different approach of physicians to both groups. Many of the controls were new immigrants from the former USSR, so immigration status cannot explain the differences found. The language barrier is clearly part of the explanation, as noted by the findings of the logistic regression, since from all the demographic variables studied only the level of knowledge of the Hebrew language was significantly related to not having received any recommendation (odds ratio 8.49). Many of the former USSR immigrants in Israel overcome this barrier by choosing a Russian-speaking physician (easily available). This option is not available to the Ethiopian immigrants.

Previous studies have shown the existence of differences in the health status and mortality patterns of migrant groups as compared to the indigenous population. Most of the differences disfavor the migrant group. Possible determinants of these differences are evident in sociocultural, genetic and socioeconomic factors [11]. Also, a gap in health status among racial/ethnic groups has been shown, and physicians should be aware of the health implications of discrimination [12]. Racial or ethnic variations in health status primarily result from variations among races in exposure or vulnerability to behavioral, psychosocial, material, and environmental risk factors and resources. Socioeconomic status is a central determinant of health status, and although it may overlap the concept of race it is not equivalent to race [13]. Since different primary care physicians conduct preventive activities to different extents, the differences in the performance of these activities may be based on personal and organizational characteristics [14]. This may explain how differences in cultural backgrounds and language between physicians and their patients may become barriers in the performance of screening and preventive medicine.

The main limitations of our study are the relatively small sample size of Ethiopian women and the fact that these women were of very low socioeconomic/demographic status (the only status existing in the study group), thus we could not control for this variable in the data analysis.

One of the definitions of the word bias is: "A preference or

an inclination, especially one that inhibits impartial judgment" [15]. Inclinations do not always include or imply intentionality or awareness. Therefore, although we cannot arrive at a definitive diagnosis of the causes that lead to the described differences, and we do not hint at any intentionality on the part of the medical system, we do hope that our findings will help physicians identify this inequity in order to prevent it from happening in the future. Future research is encouraged to validate our findings and determine the possible causes of the findings described.

---

## References

1. Brown AF, Perez-Stable EJ, Whitaker EE, et al. Ethnic differences in hormone replacement prescribing patterns. *J Gen Intern Med* 1999;14:663–9.
2. Schneider AE, Davis RB, Phillips RS. Discussion of hormone replacement therapy between physicians and their patients. *Am J Med Qual* 2000;15:143–7.
3. Marsh JV, Brett KM, Miller LC. Racial differences in hormone replacement therapy prescriptions. *Obstet Gynecol* 1999;93:999–1003.
4. Lydakis C, Kerr H, Hutchings K, Lip GY. Women's awareness of, and attitudes towards, hormone replacement therapy: ethnic differences and effects of age and education. *Int J Clin Pract* 1998;52:7–12.
5. Nir-Caein R, Nahum R, Yogev Y, Rosenfeld J, Fisher M, Kaplan B. Ethnicity and attitude toward menopause and hormone replacement therapy in northern Israel. *Clin Exp Obstet Gynecol* 2002;29:91–4.
6. Roumie CL, Grogan EL, Falbe W, et al. A three-part intervention to change the use of hormone replacement therapy in response to new evidence. *Ann Intern Med* 2004;141:118–25.
7. Coleman EA, O'Sullivan P. Racial differences in breast cancer screening among women from 65 to 74 years of age: trends from 1987-1993 and barriers to screening. *J Women Aging* 2001;13:23–39.
8. Gwyn K, Bondy ML, Cohen DS, et al. Racial differences in diagnosis, treatment, and clinical delays in a population-based study of patients with newly diagnosed breast carcinoma. *Cancer* 2004; 100:1595–604.
9. Harris DM, Miller JE, Davis DM. Racial differences in breast cancer screening, knowledge and compliance. *J Natl Med Assoc* 2003; 95:693–701.
10. Qureshi M, Thacker HL, Litaker DG, Kippes C. Differences in breast cancer screening rates: an issue of ethnicity or socioeconomic? *J Womens Health Gend Based Med* 2000;9:1025–31.
11. Uniken Venema HP, Garretsen HF, van der Maas PJ. Health of migrants and migrant health policy, The Netherlands as an example. *Soc Sci Med* 1995;41:809–18.
12. Ren XS, Amick BC, Williams DR. Racial/ethnic disparities in health: the interplay between discrimination and socioeconomic status. *Ethn Dis* 1999;9:151–65.
13. Williams DR, Lavizzo-Mourey R, Warren RC. The concept of race and health status in America. *Public Health Rep* 1994;109:26–41.
14. Tabenkin H, Yaphe Y, Gross R. Preventive medicine in primary care in Israel: findings from a national survey. *Public Health Rev* 1996;24:19–35.
15. Dictionary.com <http://dictionary.reference.com/>

---

**Correspondence:** Dr. H. Tandeter, Dept. of Family Medicine, Siall Research Center for Family Medicine and Primary Care, Ben-Gurion University of the Negev, P.O. Box 653, Beer Sheva 84105, Israel.  
Phone: (972-8) 647-7436  
Fax: (972-8) 647-7636  
email: [howard@bgu.ac.il](mailto:howard@bgu.ac.il)