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An Investigation of Unmet Socio-economic Needs among Arab American Breast Cancer Patients Compared with other Immigrant and Migrant Patients

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BACKGROUND

It is estimated that over one million immigrants in the U.S., 2.5% of the nation's 41.3 million immigrants, hail from the Middle East and North Africa [1]. Since 1980, the number of New Yorkers who identify as Arab has more than doubled to a current population of 449,187, among the fastest growing Arab populations in the country [1]. Among the foreign born in both the United States (U.S.) and NYC, Latinos constitute the largest percentage (53.8% and 51.7% respectively) [2]. The Caribbean-born population in the United States has increased more than 17-fold over the past 50 years to approximately 3,465,890, accounting for 9% of the country's immigrant population [3].

Studies have shown high cancer incidence and mortality among Arab Americans, particularly for breast cancer [4, 5, 6]. The majority of Arab American cancer incidence and practices data is out of Michigan, home to the second largest Arab American community in

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CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest.

the U.S., where the Michigan Public Health Institute reported that the leading cause of death for Arab women was breast cancer [6]. Arab Americans are commonly diagnosed with breast cancer at an earlier age and with more aggressive disease when compared with the U.S. born population [6,7].

Latinos and Caribbean immigrants of African descent (CIAD) also have high breast cancer incidence and/or mortality. Approximately 91.7 per 100,000 Latina women will be diagnosed with breast cancer in 2017[8]. A study conducted among CIAD reported an estimated breast cancer rate of 75 per 100,000 women [9].

Prior research has revealed considerable socioeconomic needs among populations of Latino and CIAD cancer patients, including for medication costs, child care, transportation, food, and housing [10,11]. Immigrants may also experience more limited social support, and language and legal barriers to treatment adherence [11]. Socioeconomic factors can significantly impact access to cancer treatment [10, 12] and have been shown to significantly affect survival among immigrants. Low socioeconomic status is a risk factor for all cause mortality after a diagnosis of cancer, largely due to a later stage at diagnosis and to less aggressive treatment [13]. Arabs, Latinos, and CIAD are at socioeconomic risk for poor cancer outcomes.

A health assessment conducted in Southwest Brooklyn, the largest Arab American area in New York City (NYC), showed that over 50% of Arab households lived below the poverty level and nearly 30% had no health insurance [14]. Over 27% of the Arab population in NYC does not speak English at home [15]. In 2015, in NYC, 29% of people born in the Caribbean and 27% of people born in Latin America lived in poverty [16]. Almost 23% of the entire NYC population speaks Spanish at home [15].

Arabs are a hidden minority when compared to larger, more studied groups like Latinos and CIAD. Arabs, despite their growing numbers, receive little attention in health research [4, 5]. To our knowledge, there are no data documenting unmet socioeconomic needs of Arabs undergoing a breast cancer diagnosis. This study compares the socioeconomic needs among Arabs, Latinos and CIAD undergoing breast cancer treatment.

METHODS

The Integrated Cancer Care Access Network (ICCAN) provides case management to low-income cancer patients in 11 hospital-based cancer clinics in NYC. It uses a multilingual multidisciplinary team to specifically target a broad range of social and economic determinants related to cancer treatment adherence and quality of life [11]. This is a comparative study of a nested cohort of Arab, Latino and CIAD breast cancer patients in the ICCAN program and their areas of needed assistance. The project received Memorial Sloan Kettering Cancer Center Institutional Review Board exemption. A waiver for HIPAA authorization and informed consent was granted.

At the core of the ICCAN intervention is the trained, bilingual ICCAN Access Facilitator who assesses needs and synchronizes an individualized set of trans-disciplinary services for the patients [11]. The ICCAN project employs three full-time and three part-time bilingual

ICCAN Service Access Facilitators. ICCAN recruits participants from 11 community cancer clinics in New York City. Access Facilitators also receive referrals from community-based organizations (CBO).

Participants

Participants were cancer patients from the 11 participating ICCAN clinical sites where they were receiving treatment, or cancer patients referred from Arab American CBOs, which provide social services to the Arab population. They were invited to participate in ICCAN between July 2010 and May 2015. Eligible patients for this analysis included all adults who identified as an Arab, Latino, and/or CIAD with a breast cancer diagnosis undergoing treatment at any of the 11 sites, or referred through a CBO and enrolled in ICCAN.

Data Collection

ICCAN Access Facilitators either approached all patients in the waiting room before provider visits or set up appointments with them if they were referred through CBOs. ICCAN Access Facilitators administered an intake needs assessment survey in the patient's preferred language (English, Spanish or Arabic).

Measures

The survey included questions on sociodemographic characteristics, health and treatment history, and needs for assistance. The sociodemographic characteristics queried included: sex, age, marital status, family size, household members, place of birth, place of last residence, income amount and source of income before and after cancer diagnosis, employment status, and occupation before and after cancer diagnosis. In addition, it asked questions related to immigration/acclulturation (e.g. time in the US, preferred language, spoken English proficiency, and job in home country). Questions related to cancer diagnosis included: type of cancer diagnosis, stage, date of diagnosis; treatment start date; type(s) of treatment; oral medications; total scheduled and total missed appointments; missed medications.

The needs section included questions on needed (1) financial support, (2) food, (3) transportation, (4) housing, (5) psycho-social support, (6) health insurance, and (7) legal issues. The total time for survey administration was approximately 45–60 minutes. Once patient needs were identified, ICCAN Access Facilitators provided immediate and on-going assistance in the identified areas of need.

Analysis

Statistical analyses were performed using IBM SPSS software, version 20 (IBM North America, New York, NY, USA). Means, frequencies and percentages, were used to describe the sociodemographic characteristics and areas of needed assistance. Descriptive statistics were used to characterize the sample by ethnic group (Arabs, Latinos and CIAD). The areas of unmet needs were assessed for the full sample and for the three groups. T-test and X^2 analyses were used to evaluate differences between groups in the demographic characteristics. We used a two-sided significance level of $\alpha = 0.05$. All analyses were restricted to available cases.

Binary logistic regressions were conducted to determine the bivariate associations between ethnic groups (Arab, Latino, and CIAD) and areas of unmet needs. A binomial variable was created to measure high unmet needs. Patients who reported having four or more unmet needs were classified as having high needs. In the adjusted logistic regression models, we adjusted for relevant variables (age, marital status, educational level, monthly income, employment status, insurance status) and compared the rates of unmet needs across the different ethnic groups. The Arab group was selected as the reference group to better understand their needs in comparison to the other immigrant and migrant groups, given the dearth of available data on Arab Americans. Unadjusted odds ratios (ORs) and 95 % confidence intervals were calculated to assess the relationship of ethnicity/race and unmet needs. A two-sided *p* significant level of less than .05 was considered statistically significant.

RESULTS

Three hundred and nine breast cancer patients were included in our analysis. The sample was comprised of 36 Arabs, 128 CIAD (i.e. Haiti, Jamaica and Virgin Islands) and 145 Latinos. Characteristics of the patients are shown in Table 1. Arab patients' mean age was 47 years. CIAD and Latino patients had a higher mean age (57 and 55 respectively). The majority of Arabs were married (85%) had completed a high school degree or more (70%), were unemployed (97%), and had no monthly income (58%). In contrast, approximately 30% of CIAD and Latino patients were married. A similar percentage of CIAD (68%) as Arabs had completed a high school degree or more, in comparison to 52% of Latinos. Both CIAD and Latinos showed high rates of unemployment (79%, 67% respectively). The majority of CIAD had no monthly income (60%), while 48% of Latinos had a monthly income of \$1-\$900. About 40% of the Arab sample reported being uninsured (20%) or having Emergency Medicaid (20%). Approximately one-third of CIAD and Latinos had Emergency Medicaid (34%, 30% respectively), with the majority of these groups having other insurance (CIAD 53%, Latinos 64%). The majority of Arabs' preferred language was Arabic (83%). The majority of CIAD preferred language was English (91%), while the majority of Latinos preferred Spanish (81%). More than two-thirds of Arabs (67%) were unaware of their cancer stage and 62% had been diagnosed for 6 months or more while only 26% of CIAD and 34% of Latinos were unaware of their cancer stage.

The most frequent unmet needs, shown in Table 2 were financial (87%), transportation (73%), and food assistance (85%). A similar percentage of Arabs, Latinos, and CIAD reported needing assistance with financial issues (86%, 85%, and 85%, respectively) and with transportation issues (70%, 71%, and 72%, respectively). Two thirds of Arab (65%), 92% of CIAD, and 85% of Latinos reported needing assistance with food. Further, 53% of Arab, 36% of Latino, and 44% of CIAD reported needing assistance in four or more socio-economic areas.

Arabs were found to have similar financial, transportation, health law, housing, and supportive care needs when compared to CIAD and Latinos. In adjusted analyses (as shown in Table 3), Arabs were more likely to have unmet needs related to health insurance than CIAD (OR=0.20, CI=0.06–0.66) and Latinos (OR=.20, CI=.06-.67). Arabs were also more

likely to need legal assistance (OR=.25, CI=.08-.80) than Latino patients, but as likely as CIAD patients (OR=.36, CI=.12–1.10). Arabs were less likely to report a need for food assistance than CIAD (OR=10.20, CI=2.63–39.56) and Latinos (OR=5.01, CI=1.40–17.91). Further, Arab patients were less likely to report having informational needs than Latino patients (OR=4.14, CI=1.01–16.87), but as likely as CIAD patients (OR=3.20, CI=.80–13.03).

DISCUSSION

In this cohort of 309 medically underserved Arabs, Latinos, and CIAD with breast cancer, most patients reported financial, social, and logistical support barriers during cancer care and treatment. Although many studies have shown that ethnic minority and immigrant patients experience numerous barriers to accessing optimal cancer treatment [12, 17], this is the first study to examine areas of unmet needs during cancer treatment with a sample of Arab, CIAD and Latino breast cancer patients.

All three groups had unmet needs during their breast cancer treatment. Financial need was reported as the highest area of need for all three groups, unsurprising given that almost a third of each group lives under the poverty line. Arabs showed the highest unemployment rate among the three ethnic groups, despite two thirds having completed high school or more. Furthermore, Arabs also had the highest rates of health insurance needs, putting them at increased risk for health care access barriers, which may lead to poor treatment adherence and adverse health outcomes [18]. Arab women have cited cost and lack of health insurance as structural barriers to proper cancer care [19, 20]. Similarly, rates of health insurance coverage are low among the Latino population.

Arabs were similar to Latinos in their preference for a language other than English for their health care. Limited English proficiency, the unfavorable likelihood of employers offering employee healthcare, and the high out of pocket cost for are some of the structural barriers that limit Latino access to healthcare [21]. CIAD, especially young adults, were found to know the least about cancer amongst a cohort of ethnic minority focus groups [22]. Incorporating bilingual and/or multicultural navigators into cancer clinics with significant numbers of Arab, Latino, and CIAD patients, to provide linkages to CBOs that offer financial assistance to cancer patients could help to decrease financial barriers. Additionally, organizations that focus on healthcare access with multilingual health insurance enrollers on staff and community health workers could serve as important partners to increase access to cancer care services for these populations.

Arabs had a substantially higher need for legal services in comparison to Latino and CIAD patients. Many Arabs and Muslims have expressed feeling unsafe in public accommodations such as schools, medical facilities and restaurants because of their experiences with verbal and physical harassment related to their ethnicity and religion [23]. The prevalent fear of discrimination, especially for women wearing the Islamic head scarf, may hinder patients' willingness to seek out assistance, both medical and legal [4, 14,19]. The multiple experiences of discrimination have led to tremendous fear and anxiety in the Arab community, which in turn has led to them reacting as individuals instead of looking for

collective support. CIAD and Latinos also experienced and reported perceived racial discrimination in healthcare settings, which negatively impacts willingness to seek medical treatment [24, 25, 26, 27, 28]. This avoidance can make it very difficult for CBOs and service providers to reach out to these populations and address the issues they faced [14, 20, 23, 25, 27]. Groups that offer legal assistance should be educated about these feelings of isolation and fear within these communities and in turn, bring their services out into the community through Arabic, Spanish and English language workshops and targeted educational materials in the neighborhoods of the target populations.

Arabs reported significantly lower food needs compared to CIAD and Latino patients, despite Arabs having a higher unemployment rate. It has been noted that Arabs have higher rates of utilization of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) benefits than Latinos and non-Arab/non-Latinos in Detroit [29,30]. Arabs, like their Latino counterparts, also place a large importance on food and consumption of food [31], which could create a sense of shame if not enough food is being put on the table or offered to their children, leading adults to not ask for help. Building trust, through collaborations with CBOs, religious institutions, and community leaders could reduce the stigma and fear around food insecurity, therefore, encouraging more Arabs to ask for assistance.

Arabs had the highest proportion of breast cancer patients unaware of their cancer stage compared to CIAD and Latinos. Despite their lack of cancer stage awareness, they reported similar information needs as CIAD, and lower information needs than Latinos. A study conducted with Latino cancer patients showed that considerably low levels of stage awareness might adversely impact treatment decisions and disease management due to a higher preference for a passive decision making approach or a family-centered model [32]. A similar finding was noted in a study conducted with Arab cancer patients in Saudi Arabia [33]. Given the large number of Arab patients that preferred Arabic for their treatment, ensuring that there are interpreters available when they are undergoing breast cancer treatment could help these patients to be more involved in their decision making process.

Our study has some limitations. The data may be subjected to recall accuracy because the medical information consists of retrospective self-reports. The ideal assessment of medical information (i.e. cancer site and stage) is through medical record abstraction as the primary collection method. However, abstracting data from medical records from hundreds of patients for a multisite program such as this, presents logistic challenges due to inconsistencies in medical records and different formats (paper vs. electronic). Also, information about socioeconomic needs is based on a quick and short assessment. Future studies with immigrant populations should include more detailed information about socioeconomic and practical needs of patients, including a description of the type of needs (i.e. financial-unable to pay rent, co-payments etc.). Another major limitation of the study is the sample size for Arab immigrants. In comparison to the larger samples of CIAD and Latinos, this sample was smaller which might limit the-generalizability of the results for the Arab population. Also, the comparison groups were typically disadvantaged and underserved patients. Future studies should include comparisons to non-disadvantaged

groups (i.e. US born, non-Hispanic whites) to document the extent of unmet needs of immigrant patients.

NEW CONTRIBUTIONS TO THE LITERATURE

The use of a multidisciplinary approach to address financial, social, and cultural barriers to cancer treatment in immigrant and medically underserved populations has received minimal attention yet may be essential to improving the current level of disparities in cancer outcomes and in improving the quality of life for immigrant and minority cancer survivors. Arabs are a growing immigrant group in the United States and few studies have documented the needs of Arab patients. This is the first study that focuses on the unmet logistic, practical and economic issues that Arab patients experience after a diagnosis of breast cancer. Additional multidisciplinary interventions should be implemented and evaluated to address social, cultural and economic determinants in cancer care for this population. Furthermore, culturally tailored resources should be developed and partnerships with community based and religious institutions forged to facilitate trust with this potentially hard to reach population to help facilitate access to available services. Future research should look at interventions addressing unmet socioeconomic needs with an Arab population.

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Table 1

Breast cancer patients' sociodemographic characteristics by ethnicity (n=309)

	Arabs (n=36)	CIAD(n=128)	Latinos (n=145)	Chi Square
	n (%)	n (%)	n (%)	X(p)
Age ¹	47 (9.09)	57 (11.22)	55 (13.55)	6.29 **
Marital Status				
Married/Partnered	28 (85)	37 (33)	36 (31)	34.01 ***
Unmarried ¹	5 (15)	76 (67)	80 (69)	
Education				
High School or more	25 (70)	89 (68)	70 (52)	12.20 *
None to 5 th grade	8 (22)	31 (24)	38 (28)	
6 th to 11 th grade	3 (8)	11 (8)	28 (21)	
Monthly Income				
More than \$900	10 (28)	18 (14)	21 (15)	25.24 ***
\$0	21 (58)	80 (60)	52 (37)	
\$1-\$900	5 (14)	35 (26)	66 (48)	
Employment				
Employed	0 (0)	7 (6)	17 (15)	16.14 **
Unemployed	34 (97)	88 (79)	76 (67)	
Retired	1 (3)	17 (15)	21 (18)	
Insurance Status				
Other insurance ²	21 (60)	70 (53)	86 (64)	8.51
Uninsured	7 (20)	17 (13)	9 (7)	
Emergency Medicaid	7 (20)	45 (34)	40 (30)	
Stage				
I or II	6 (17)	51 (41)	67 (50)	30.21 **
III or IV	6 (17)	42 (33)	21 (16)	
Unknown	24 (67)	33 (26)	47 (35)	
Time since Diagnosis				
Less than 6 months	12 (39)	58 (48)	76 (60)	14.50 **
6 to 12 months	8 (26)	41 (34)	39 (31)	
1 year or more	11 (36)	21 (18)	12 (9)	
Cancer				
Recurrence	1 (10)	17 (53)	14 (40)	6.01
Metastatic	9 (90)	15 (47)	21 (60)	
Preferred Language				
Arabic	30 (83)	0 (0)	0 (0)	453.07 ***
English	6 (17)	119 (91)	26 (19)	
Spanish	0 (0)	0 (0)	111 (81)	

	Arabs (n=36)	CIAD(n=128)	Latinos (n=145)	Chi Square
	n (%)	n (%)	n (%)	X(p)
Other ³	0 (0)	12 (9)	0 (0)	
English Proficiency				
None	6 (18)	4 (3)	44 (32)	111.50 ***
Limited	14 (42)	7 (5)	52 (37)	
Well/Fluent	13 (40)	122 (92)	43 (31)	
Years in USA				
> 20 years	4 (13)	40 (38)	66 (51.2)	19.31 ***
6–20 years	18 (56)	39 (37)	46 (36)	
< 5 years	10 (31)	27 (26)	17 (13)	
US-born	0 (0)	0 (0)	9 (6)	

Note.

¹ Single, divorced, separated, widowed

² Other included Medicaid, Medicare, and private health insurances

³ Other languages included French/Creole

* p<.05

** p<.01

*** p<.001

Table 2

Frequency of patients' unmet needs (n=309)

	Arabs (n=36)		CIAD(n=128)		Latinos (n=145)	
	n	(%)	n	(%)	n	(%)
Unmet Needs						
Financial	31	(86)	112	(85)	125	(85)
Transportation	25	(70)	95	(72)	105	(71)
Food	19	(65)	120	(92)	125	(85)
Health Insurance	12	(34)	13	(10)	15	(10)
Health Law	3	(10)	10	(8)	14	(10)
Legal	11	(33)	23	(18)	18	(12)
Housing	9	(26)	17	(13)	23	(16)
Supportive Services	16	(47)	46	(35)	45	(32)
High Needs ¹	19	(53)	58	(44)	54	(36)

Note:

¹High Needs: Four or more needs.

Table 3

Odds ratios (OR) and 95% confidence intervals (CI) race/ethnicity predicting unmet needs in a multiethnic sample of cancer patients

Unmet Needs	Arabs		Adjusted	
	OR	CI	OR	CI
Financial				
Arab	1.00		1.00	
CIAD	0.90	0.31–2.60	0.88	0.22–3.60
Latino	1.02	0.35–2.94	0.98	0.24–4.10
Transportation				
Arab	1.00		1.00	
CIAD	1.20	0.52–2.60	1.14	0.40–3.23
Latino	1.12	0.50–2.49	1.60	0.53–4.62
Food				
Arab	1.00		1.00	
CIAD	5.74 ^{***}	2.15–15.40	10.20 ^{***}	2.63–39.60
Latino	3.30 ^{**}	1.33–8.20	5.01 ^{**}	1.40–17.91
Health Insurance				
Arab	1.00		1.00	
CIAD	0.21 ^{***}	0.09–.53	0.20 ^{**}	0.06–.66
Latino	0.23 ^{***}	0.10–.56	0.20 ^{**}	0.06–.67
Health Law				
Arab	1.00		1.00	
CIAD	0.80	0.20–3.00	0.53	0.10–3.00
Latino	1.01	0.30–4.00	0.70	0.12–3.60
Legal				
Arab	1.00		1.00	
CIAD	0.43	0.20–1.00	0.36	0.12–1.10
Latino	0.28 ^{**}	0.12–.70	0.25 [*]	0.10–.80
Housing				
Arab	1.00		1.00	
CIAD	0.41	0.17–1.04	0.50	0.20–1.60
Latino	0.50	0.20–1.20	0.32	0.10–1.10
SupportiveCare Services				
Arab	1.00		1.00	
CIAD	0.62	0.30–1.32	0.78	0.30–2.00
Latino	0.50	0.23–1.10	0.70	0.25–1.71
High Needs^I				
Arab	1.00		1.00	
CIAD	0.63	0.28–1.44	0.72	0.26–2.00

Unmet Needs	Arabs			
	Univariate		Adjusted	
	OR	CI	OR	CI
Latino	0.74	0.33–1.70	0.70	0.25–2.00
Information Needs				
Arab	1.00		1.00	
CIAD	1.94	0.63–6.00	3.20	0.80–13.03
Latino	2.86	0.94–8.70	4.14*	1.01–16.87

Note.

¹ High Needs: Four or more needs. Adjusted for: Age, marital status, educational level, monthly income, employment status, and insurance status

*
p < .05

**
p < .01

p < .001