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Presentation, tumour and treatment features in immigrant women from Arabic-speaking countries treated for breast cancer in Australia

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Abstract

Background: Australia has a large population of immigrant women from Arabic-speaking countries. The aim of this study was to examine breast cancer tumour and surgical treatment features for women born in Arabic-speaking countries and compare them to women born in Australia and other countries. Another aim was to consider how this information can inform clinical care for this multicultural population.

Methods: This is a retrospective audit of an institutional breast cancer database. Demographic, tumour and surgical treatment data were extracted for the Arab women and compared to Australian-born women (comparison 1) and to women born in all other countries (comparison 2); chi-squared analysis was performed to test for differences between groups.

Results: A total of 2086 cases with country of birth information were identified, of whom 139 women (6.7%) were born in Arabic-speaking countries, 894 (42.8%) were born in Australia and 1053 (50.4%) were born in other countries (71 nations). Arab women tended to be younger ($P = 0.013$), more disadvantaged ($P < 0.001$), were more likely to have symptomatic rather than screen-detected breast cancer ($P < 0.001$), had a higher rate of high grade ($P = 0.021$), HER2-positive ($P = 0.025$) breast cancer compared to Australian-born women or others. There was no difference in tumour (pT) stage, rate of breast conservation versus mastectomy, re-excision and contralateral prophylactic mastectomy between groups. Australian-born women were more likely to undergo breast reconstruction after mastectomy ($P < 0.001$); reconstruction rate was >29% in all groups.

Conclusion: Women born in Arabic-speaking countries were younger, more disadvantaged and showed more aggressive tumour features. This has implications for supportive care during treatment and survivorship.

Introduction

Breast cancer is the most common female cancer in most countries around the world, including Australia and Arab countries.[1,2] While there exists a large amount of data on breast cancer trends in the Australian population overall, there is less information available about immigrant women. Participation in the national screening programme is lower among the immigrant population in Australia compared to Australian-born women.[3–5] One of the major barriers to screening identified in the Arab-Australian population is the paradigm in which one must be sick to consult a health professional, so attending for preventive health reasons is not viewed as important.[5]

Western Sydney has the highest immigrant population in Australia, and it is increasing. Between 2011 and 2016, the overall percentage of Western Sydney residents born in non-English-speaking countries increased by 21.3%. Currently, 40.4% of the population of Western Sydney was born overseas. Forty-five percent speak a language other than English at home, a rate double the New South Wales state average.[6]

Immigration from Arab countries is increasing around the world. It is important to understand illness in this population in order to support women and their families in a culturally appropriate manner.

The aim of this study was to describe breast cancer presentation, tumour and treatment characteristics in women treated in Western Sydney and born in Arab countries, and to compare these to women born in Australia or in other (non-Arab) countries.

Methods

This was a retrospective audit of the prospectively maintained institutional database. The database was searched to identify cases who met the eligibility criteria: female, aged over 18 years, treated for ductal carcinoma in situ (DCIS) or invasive breast cancer and born in a country with Arabic as a national language (Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, United Arab Emirates and Yemen). Cases were excluded when key pathological factors such as tumour type, size and grade were missing.

Data were extracted for patient demographics (including age, country of birth, religion, marital status and postcode of residence), tumour factors (including method of detection, histological type, size, grade and receptor status) and surgical treatment factors (including breast conservation versus mastectomy, re-excision, breast reconstruction and contralateral prophylactic surgery). The same data were collected for women born in Australia (first comparison group, referred to as 'Australian-born') or born outside Australia in non-Arab countries (second comparison group, referred to as 'other') and treated during the same time period.

Area of disadvantage decile was determined using Australian government postcode tables based on census data.[7]

Analysis was conducted using SPSS Statistics Version 24 (IBM Corp., Armonk, NY, USA). Descriptive statistics were used to summarize each factor in each of the three groups. Chi-squared analysis was used to evaluate differences between groups. A *P*-value of ≤0.05 was considered significant. Institutional ethics approval was obtained (Western Sydney HREC, 2019/ETH10761).

Results

The search of the database resulted in 2086 eligible cases (breast malignancy, with country of birth information available). These were treated between 2011 and 2017. There were 2084 cases of unilateral breast cancer (99.8%) and two bilateral cases (0.2%). In addition, there was information about three benign contralateral breast procedures performed on patients with unilateral cancer.

Country of birth is shown in Table S1. One hundred and thirty-nine women (6.7%) were born in Arabic-speaking countries, 894 (42.8%) were born in Australia and 1053 (50.4%) were born in other countries. Among women born in other countries, 71 different nations were represented.

Demographics

Demographic data are shown in Tables 1 and S2. Most of the variables examined showed highly statistically significant differences between the three groups. The mean age of the population overall was 58.6 years (median 58.5; range 20–94) and there was no statistically significant difference in the mean or median age between

Table 1 Demographic data for women born in Arab countries, Australia and other countries (*n* = 2086)

	Arab country (*n* = 139)		Australia (*n* = 894)		Other non-Arab country (*n* = 1053)		Total		χ^2 value	*P*-value
	n	%	*n*	%	*n*	%	*n*	%		
Age, years										
Median	57.4		58.9		58.4		58.5			0.069
Mean (SD)	56.7 (10.32)		59.1 (12.45)		58.4 (11.76)		58.6 (11.93)			0.069
Age group										
20–35	2	1.4	30	3.4	22	2.1	54	2.6		
36–50	39	28.1	195	21.8	250	23.7	484	23.2		
51–65	70	50.4	380	42.5	487	46.2	934	44.9		
66–80	27	19.4	247	26.7	263	25.0	537	25.7		
>80	1	0.7	42	4.7	32	3.0	75	3.6		
Total	139	100.0	894	100.0	1054	100.0	2087	100.0	19.300	0.013
Preferred language										
Arabic	57	41.0	5	0.6	0	0.0	62	3.0		
English	72	51.8	886	99.1	702	66.7	1660	79.6		
Other	8	5.8	3	0.3	337	32.0	348	16.7		
Unknown	2	1.4	0	0.0	14	1.3	16	0.8		
Total	139	100.0	894	100.0	1053	100.0	2074	100.0	1117.078	<0.001
Area of disadvantage decile†										
1–2	68	48.9	178	19.9	231	22.9	477	22.9		
3–4	17	13.8	124	13.8	141	13.4	282	13.6		
5–6	14	10.1	177	19.8	161	15.3	352	16.9		
7–8	22	15.8	213	23.9	249	23.7	484	23.2		
9–10	18	12.9	200	22.4	271	25.7	489	23.4		
Unknown	0	0.0	2	0.2	0	0.0	2	0.1		
Total	139	100.0	894	100.0	1053	100.0	2086	100.0	82.531	<0.001
Menopausal status										
Pre-menopausal	37	26.6	179	20.0	224	22.2	440	22.1		
Peri-menopausal	19	13.7	85	9.5	77	7.3	181	8.7		
Post-menopausal	74	53.2	591	66.1	706	67.0	1371	65.7		
Unknown	9	6.5	39	4.4	47	4.5	95	4.6		
Total	139	100.0	894	100.0	1053	100.0	2086	100.0	12.996	0.012

†Area of disadvantage determined by residential postcode. A lower number indicates higher disadvantage.

groups. However, when age analysis was conducted by age group, a higher proportion of women born in Arabic-speaking countries were in the younger age brackets than women in the other groups. Nearly 80% of Arab women were under the age of 65 years compared to 68% of Australian-born and 72% of others ($P = 0.013$). Arab women were less likely to be post-menopausal than women in the other groups ($P = 0.012$).

Women born in Arabic-speaking countries were significantly more likely to report Arabic to be their preferred language ($P < 0.001$). Of note, one-third of non-Arab, non-Australian women also reported having a preferred language other than English. Arab women were more likely to report having a religion (more than 96%) compared to the other groups where 'no religion' or 'atheist' or 'agnostic' were reported (Australian-born women 14% and other women 16%). Most Arab women were Christian (72%), predominately composed of the large Christian population born in Lebanon. Twenty-four percent of Arab women were Muslim. Arab women were significantly more likely than others to be married ($P < 0.001$).

Arab women were significantly more likely to live in a disadvantaged area ($P < 0.001$), with nearly half having a residential postcode in the lower two deciles (1–2) compared to 20% of Australian-born and 22% of other women. The top two deciles (9–10) contained 13% of Arab women compared to 22% of Australian-born women and 26% of others.

Arab women were more likely to be obese ($P < 0.001$) and less likely to have ever used the oral contraceptive pill ($P < 0.001$). They were less likely than Australian-born women to report a family history of breast cancer (37% versus 48%) but more likely than others (33.4%, $P < 0.001$).

Tumour characteristics

Tumour features are shown in Table 2. Australian-born women were significantly more likely to have their cancer detected by screening than Arab or other women ($P < 0.001$). There was no difference in tumour palpability at first treatment assessment.

Arab women were more likely to have DCIS than invasive cancer compared to the other two groups (19% versus 12% and 15%, $P = 0.048$). There was no significant difference in size or grade of DCIS. For invasive cancer, however, Arabic women were significantly more likely to have higher grade tumours ($P = 0.021$) than Australian-born and other women, and tumours were more likely to be larger although this result did not quite reach statistical significance ($P = 0.053$). There was no difference in oestrogen (ER) or progesterone (PR) receptor expression; however, Arab women were more likely than the other two groups to have a tumour that was human epidermal growth factor receptor 2 (HER2)-positive ($P = 0.025$).

Surgical treatment factors

Treatment factors are shown in Table 3. There was no difference between rates of breast conservation versus mastectomy ($P = 0.080$) or in re-excision rates ($P = 0.391$). When mastectomy was performed, Australian-born women were significantly more likely than Arab or other women to have immediate breast reconstruction (48% versus 30% and 38%, $P < 0.001$). Arab women were significantly less likely than Australian-born and other women to choose contralateral prophylactic mastectomy (2% versus 22% and 15%, $P < 0.001$). When contralateral prophylactic mastectomy was chosen, there was no significant difference in immediate breast reconstruction rates between the three groups ($P = 0.095$).

Arabic-speaking versus English-speaking women

Further analysis was performed to test for differences between women born in Arab countries whose preferred language was Arabic compared to those born in Arab countries whose preferred language was English. We found that Arabic-speaking women had statistically significantly more disadvantages. Of Arabic-speaking women, 66.7% were in the bracket of greatest disadvantage compared to 38.9% of English-speaking women ($P < 0.001$). There were no differences in any other variables, including body mass index; marital status; family history; method of detection; palpability; type of malignancy (DCIS versus invasive cancer); ER, PR or HER2 status; initial operation; and post-mastectomy breast reconstruction.

Discussion

This study explored the method of breast cancer diagnosis, tumour characteristics and surgical treatment factors in a population of migrant women from Arabic-speaking countries living in an extremely diverse community in Australia. In addition to Australia and nine Arabic-speaking countries, there were 71 countries of birth represented in women presenting for breast cancer treatment at this major referral centre. This allows a unique study of a very diverse multicultural population.

The Arab women fell into significantly younger age brackets, had a higher body mass index and were significantly more disadvantaged than the Australian-born and other groups. The younger age finding in this study is similar to findings from previous studies also reporting that breast cancer occurs at a younger age in women in Arabic-speaking countries.[8,9] The age at diagnosis was found to be 8–12 years younger for Kurdish women living in the USA than American-born women. This has not been fully explained, but is consistent with the observation that breast cancer incidence is particularly low among women in the Middle East, where the incidence decreases with age rather than increasing as it does in Western countries.[8]

The Arab population was less likely to have a screen-detected breast cancer and more likely to be symptomatic. This aligns with data from the population screening programme that shows that migrant women have a lower rate of attendance for routine mammography. BreastScreen participation is significantly lower among the migrant population in Australia compared to Australian-born women. The participation rate of women who speak a language other than English at home is <49%, compared to around 55% in English-speaking women.[3,4] Screening rates in women from Arabic-speaking countries is one of the lowest among migrant women in Australia.[5] However, women born in Arab countries had a higher rate of DCIS than the other groups, which would not be

Table 2 Tumour characteristics for malignancy in women born in Arab countries, Australia and other countries (n = 2086)

	Arab country		Australia		Other non-Arab country		Total		χ^2 value	*P*-value
	n	%	*n*	%	*n*	%	*n*	%		
Uni/bilateral breast cancer										
Unilateral cancer	139	100.0	893	99.8	1052	99.8	2084	99.8		
Bilateral synchronous cancer	0	0.0	1	0.2	1	0.2	2	0.2		
Unknown	0	0.0	0	0.0	0	0.0	0	0.0		
Total	139	100.0	894	100.0	1054	100.0	2086	100.0	0.317	0.853
Method of detection										
Screen-detected	64	46.0	489	54.7	494	46.9	1047	50.2		
Symptomatic	69	49.6	378	42.3	511	48.5	958	45.9		
Unknown	6	4.3	27	3.0	48	4.6	81	3.9		
Total	139	100.0	894	100.0	1053	100.0	2086	100.0	10.9991	<0.001
Palpability										
Palpable	117	84.2	738	82.6	890	84.5	1745	83.7		
Not palpable	16	11.5	115	12.9	102	9.7	233	11.2		
Unknown	6	4.3	41	4.6	61	5.8	108	5.2		
Total	139	100.0	894	100.0	1053	100.0	2086	100.0	4.552	0.103
Type of malignancy										
DCIS	26	18.7	108	12.1	158	15.0	292	14.0		
Invasive cancer	112	81.3	774	86.6	876	83.2	1762	84.5		
Unknown	1	1.3	12	1.3	19	1.8	32	1.5		
Total	139	100.0	894	100.0	1053	100.0	2086	100.0	6.068	0.048
Grade of DCIS										
Low	3	11.5	6	5.6	17	10.8	26	8.9		
Intermediate	8	30.8	22	20.4	39	24.7	69	23.6		
High	12	46.2	70	64.8	90	57.0	172	58.9		
Unknown	3	11.5	10	9.3	12	7.6	25	8.6		
Total	26	100.0	108	100.0	158	100.0	292	100.0	4.223	0.377
Size of DCIS										
<20 mm	17	65.4	53	49.1	86	54.4	156	53.4		
20–50 mm	6	23.1	40	37.0	53	33.5	99	33.9		
>50 mm	0	0.0	1	0.9	0	0.0	1	0.3		
Unknown	3	11.5	14	13.0	19	12.0	36	12.3		
Total	26	100.0	108	100.0	158	100.0	292	100.0	4.017	0.404
Histology of invasive cancer										
Ductal NST	85	75.9	566	73.1	640	73.1	1291	73.3		
Invasive lobular	13	11.6	76	9.8	83	9.5	172	9.8		
Tubular	1	0.9	15	1.9	16	1.8	32	1.8		
Medullary	0	0.0	2	0.3	0	0.0	2	0.1		
Metaplastic	1	0.9	2	0.3	3	0.3	6	0.3		
Mixed type	3	2.7	33	4.3	35	4.0	71	4.0		
Papillary	1	0.9	17	2.2	24	2.8	42	2.4		
Mucinous	2	1.8	23	3.0	29	3.3	54	3.1		
Other	5	4.5	30	3.9	33	3.8	68	3.9		
Unknown	1	0.9	10	1.3	13	1.5	23	1.3		
Total	112	100.0	774	100.0	876	100.0	1762	100.0	8.161	0.944
Grade of invasive cancer										
Grade 1	16	14.3	182	23.5	156	17.8	354	20.1		
Grade 2	45	40.2	295	38.1	361	41.2	701	39.8		
Grade 3	48	42.9	280	36.2	334	38.1	662	37.6		
Unknown	3	2.7	17	2.2	25	2.9	45	2.6		
Total	112	100.0	774	100.0	876	100.0	1762	100.0	11.602	0.021
Size of invasive cancer										
pT1	48	42.9	429	55.4	489	55.8	968	55.3		
pT2	54	48.2	295	38.1	315	36.0	666	38.0		
pT3	9	8.0	45	5.8	64	7.3	118	6.7		
Unknown	2	180.0	5	0.6	8	0.9	14	0.8		
Total	112	100.0	774	100.0	876	100.0	1762	100.0	9.33	0.053
ER status of invasive cancer										
Positive	94	83.9	624	80.6	722	82.4	1440	81.7		
Negative	16	14.3	123	15.9	127	14.5	266	15.1		
Unknown	2	1.8	27	3.5	27	3.1	56	3.2		
Total	112	100.0	774	100.0	876	100.0	1762	100.0	0.818	0.664
PR status of invasive cancer										
Positive	90	80.4	592	76.9	674	76.9	1356	77.0		
Negative	20	17.9	153	19.8	172	19.6	345	19.6		
Unknown	2	1.8	29	3.7	30	3.4	61	3.5		
Total	112	100.0	774	100.0	876	100.0	1762	100.0	0.153	0.927

Table 2 Continued

	Arab country		Australia		Other non-Arab country		Total		χ^2 value	*P*-value
	n	%	*n*	%	*n*	%	*n*	%		
HER2 status of invasive cancer										
Positive	21	18.8	74	9.6	100	11.4	195	11.1		
Negative	83	74.1	608	78.6	682	77.9	1373	77.9		
Unknown	8	7.1	92	11.9	94	10.7	194	11.0		
Total	112	100.0	774	100.0	876	100.0	1762	100.0	7.401	0.025
Multifocal invasive cancer										
Yes	25	22.3	179	23.1	197	22.5	401	22.8		
No	72	64.3	549	70.0	633	72.3	1254	71.2		
Unknown	15	13.4	46	5.9	46	5.3	107	6.1		
Total	112	100.0	774	100.0	876	100.0	1762	100.0	0.265	0.876
Multifocality, all tumours										
Yes	30	21.6	199	22.3	224	21.3	453	21.7		
No	91	65.5	643	71.9	770	73.1	1504	72.1		
Unknown	18	12.9	52	5.8	59	5.6	129	6.2		
Total	139	100.0	894	100.0	1053	100.0	2086	100.0	0.483	0.786

DCIS, ductal carcinoma in situ; ER, oestrogen; HER2, human epidermal growth factor receptor 2; NST, no special type; PR, progesterone.

Table 3 Surgical treatment factors for malignancy in women born in Arab countries, Australia and other countries (*n* = 2086)

	Arab country		Australia		Other non-Arab country		Total		χ^2 value	*P*-value
	n	%	*n*	%	*n*	%	*n*	%		
Initial operation										
Breast conservation	103	74.1	628	70.2	700	66.5	1431	68.6		
Mastectomy	36	25.9	265	29.6	348	33.0	649	31.1		
Unknown	0	0.0	1	0.1	5	0.5	6	0.3		
Total	139	100.0	894	100.0	1053	100.0	2086	100.0	5.045	0.080
Initial breast conservation type										
Standard wide local excision	98	95.1	558	88.9	633	90.4	1289	90.3		
Therapeutic mammaplasty	6	5.8	65	10.2	61	8.7	132	9.2		
Wide excision and local flap	0	0.0	3	0.5	4	0.6	7	0.5		
Unknown	0	0.0	2	0.3	2	0.3	3	0.2		
Total	103	100.0	628	100.0	700	100.0	1431	100.0	3.322	0.505
Re-excision after breast conservation										
Yes	21	20.4	113	18.0	124	17.7	258	18.0		
No	82	79.6	506	80.7	567	80.9	1155	80.7		
Unknown	0	0.0	8	1.3	10	1.4	18	1.3		
Total	103	100.0	627	100.0	701	100.0	1431	100.0	0.391	0.822
Final operation										
Breast conservation	95	68.3	579	64.8	648	61.5	1322	63.5		
Mastectomy	44	31.7	314	35.1	400	38.0	758	36.5		
Unknown	0	0.0	1	0.1	5	0.5	6	0.3		
Total	139	100.0	894	100.0	1053	100.0	2086	100.0	3.615	0.164
Reconstruction after mastectomy										
No immediate reconstruction	31	70.5	165	52.2	271	67.8	467	61.7		
Immediate reconstruction	13	29.5	151	47.8	130	32.2	294	38.3		
Unknown	0	0.0	0	0.0	0	0.0	0	0.0		
Total	44	100.0	316	100.0	401	100.0	761	100.0	18.927	<0.001
CPM (unilateral cancer undergoing ipsilateral mastectomy)										
No CPM	43	97.7	245	77.5	358	89.3	646	84.9		
CPM	1	2.3	69	21.8	42	10.5	112	14.7		
Unknown	0	0.0	1	0.3	1	0.2	2	0.3		
Total	44	100.0	316	100.0	401	100.0	761	100.0	24.376	<0.001
Reconstruction after CPM (*n* = 112)										
No immediate reconstruction	1	100.0	19	27.5	18	42.9	38	33.9		
Immediate reconstruction	0	0.0	50	72.5	24	57.1	74	66.1		
Unknown	0	0.0	0	0.0	0	0.0	0	0.0		
Total	1	100.0	69	100.0	42	100.0	112	100.0	4.699	0.095

CPM, contralateral prophylactic mastectomy.

expected for a higher proportion of cancers present outside of the screening setting. These may represent cases of mass-forming, symptomatic DCIS; however, this is a relatively uncommon presentation and would not be expected to fully explain this finding. No previous studies reporting a high rate of DCIS in these women have been identified.

Women born in Arabic-speaking countries who developed invasive breast cancer had a higher rate (approximately double) of high-grade and HER2-positive breast cancers than the other groups ($P = 0.025$). This has not been demonstrated in previous studies. A study examining data similar to the present study showed no difference in ER/PR and HER2-positive rates for Arab-born women living in the USA compared to the general population.[8] The higher rate of HER2 positivity in this study means that these women are more likely to have chemotherapy and HER2-blocking treatment. This population is therefore likely to require additional support during treatment to cope with side effects (including menopause and fertility issues) compared to Australian-born women who may be less likely to require chemotherapy.

The slightly younger age and the pre-menopausal status of the women born in Arabic-speaking countries put them at higher risk for cancer-related distress.[10] Previous studies have shown that pre-menopausal breast cancer survivors tend to have poorer quality of life than older women, predominantly due to the side effects of chemotherapy and/or endocrine therapy that may cause menopausal or other hormonal symptoms.[10,11] Fertility concerns may also be relevant in this younger population. It is essential, therefore, that services are planned to address potential unmet needs for these women. Previous research in Australian migrant groups show that migrant cancer survivors have a higher number of unmet needs than their Australian-born counterparts.[12,13] Patient-reported outcome (PRO) measures were not included in this study but would provide valuable insight.

In this study, the mastectomy rate was not significantly different between Arab women and Australian-born women. However, women born in Arabic-speaking countries were less likely than Australian-born women to have immediate breast reconstruction after mastectomy (30% versus 48%). It should be noted that these rates refer to 'all comers' and do not exclude older women, those with comorbidities or advanced tumours or women considered medically unfit for breast reconstruction. The reasons for the difference between groups are unclear and require further evaluation. It is possible that there are cultural reasons for choosing against reconstruction. It is also possible that challenges in communicating with non-English-speaking women are a factor. Another explanation may be the higher disadvantage found in women from Arabic-speaking countries. Such disadvantage has been associated with not receiving breast reconstruction in the USA[14] and it may be related to the difficulties taking time away from essential work and family duties as well as other costs. Despite this, the 30% rate of reconstruction still compares favourably with the overall reported reconstruction rate of 18% in Australia.[15] It is also noted that the reconstruction rate in Australian-born women is more than three times higher than the national rate, a high comparator. The surgical unit has a strong commitment to breast reconstruction and most surgeons are trained in oncoplastic procedures and also have strong ties with plastic and reconstructive surgeons to offer the full range of reconstruction options. As not all women will choose or be medically suitable for immediate breast reconstruction, it is estimated that around 50% will take up the option when it is available[16] and the rate in Australian-born women approaches this estimate. Given the proven quality of life benefits to reconstruction for women who choose it,[17,18] it is essential that women have the opportunity for a balanced discussion about breast reconstruction when mastectomy is needed or chosen. This study demonstrates that informed discussion, appropriate counselling and access to reconstruction can occur in an ethnically diverse population where many consultations are conducted via health interpreters. It is clinic policy for patients who do not speak English to have a health interpreter present in the consultation. There are also occasions when there may be an Arabic-speaking doctor rotating through the clinic as a surgical fellow or registrar.

This study has several limitations. The non-Australian-born comparator group was extremely heterogeneous, which may limit conclusions about this group. Data were missing for some variables that has an unknown effect on conclusions. Many women had limited English and may have had difficulty providing accurate and comprehensive background information at the time of their presentation. In addition, adjuvant treatment data for chemotherapy (including neoadjuvant chemotherapy), radiotherapy and endocrine therapy were not available. PROs were not included in this study so the impact of the findings of younger age and HER2 positivity is not known. PRO is planned for future research in this population.

This study explored diagnosis, tumour and surgical treatment factors in women born in Arabic-speaking countries treated for breast cancer in Australia. Tumour and patient factors (high-grade, HER2-positive tumours in pre-menopausal women) indicated that a recommendation for chemotherapy is more likely in these women and this has implications for supportive care. Women from an Arab background may be at higher risk of unmet needs and this could be explored in future research. Increasing the participation rate in the national mammography screening programme for these ethnically diverse women may reduce this by increasing early detection.

Australian-born women were more likely to undergo breast reconstruction after mastectomy than women born in Arabic-speaking countries; however, the breast reconstruction rate of 30% in migrant women was much higher than the overall Australian rate of 18%.

Conflicts of interest

None declared.

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Supporting information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

Table S1. Country of birth of women treated for ductal carcinoma in situ or invasive breast cancer between 2011 and 2017.
Table S2. Additional demographic data for women born in Arab countries, Australia and other countries.