RESEARCH COMMUNICATION

Methodology to Identify Iranian Immigrants for Epidemiological Studies

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Abstract

   Determining ethnic differences in cancer patterns using administrative databases is often a methodological challenge for information on ethnicity or place of birth is commonly lacking. This paper describes the approach we used to identify Iranians residing in British Columbia (BC), Canada and who were registered within the BC Cancer Registry. A listing of common Iranian surnames and given names was generated from two sources: a residential telephone book (with a high density of Iranians) and a provincial breast cancer screening program (which allowed for the selection of women born in Iran). Surnames and given names were reviewed manually and the Iranian names were identified and coded as 'highly probable' and 'probable' Iranian. A name directory was then created and linked with the BC Cancer Registry to identify Iranian cancer cases. Using this method, 1729 surnames and 737 given names were selected from the telephone book, and 1881 surnames and 757 given names from the screening program. The majority of these names were coded as 'highly probable' Iranian (98% and 96% for surnames and given names, respectively). 12% of surnames and 10% of given names were common to both sources. A listing of the most common Iranian surnames and given names is provided. In conclusion, in the absence of other ethnicity data, surnames and given names can be very helpful to identify persons of specific ethnicities when these ethnic groups have distinctive names.

Key Words: Disease pattern - ethnicity - cancer - incidence - mortality - Canada

Introduction

   Studies of immigrants have been very fruitful in investigating the environmental causes associated with cancer development and can reveal clues to cancer etiology. Changes in cancer rates in immigrants can help identify carcinogenic effects of environment and lifestyle factors, which can then be altered to reduce risk. Comparisons of cancer rates among immigrants and their descendents might also reveal cultural practices that affect cancer risk. The classic migrant studies of Japanese immigrants to the USA, and European immigrants to Australia, have provided strong arguments for the predominance of environmental factors in the etiology of cancer (Kolonel et al 1980, McMichael et al 1980).

   Cultural and lifestyle changes among immigrants depend on many factors. Acculturation tends to increase with number of generations and years since migration. Because acculturation is difficult to measure, the number of

generations since immigration is often used to measure cultural and lifestyle changes. Exposures in the country of origin may be important in the development of cancer among first-generation immigrants, who tend to be less acculturated. Studies of immigrants are also very useful for the planning of cancer control strategies for these peoples in their host countries.

   Peoples from Iran began a significant recent immigration to British Columbia (BC), Canada, following the revolution in 1979. According to 2001 census data, there were 21,290 Iranian immigrants residing in BC (Statistics Canada 2001). For this reason, we undertook a descriptive study in order to determine the pattern of cancer incidence and mortality in Iranians in BC and then compared this pattern with that found in several areas of Iran and with the BC general population using population-based cancer registries(Hislop et al 2005). Since the BC Cancer Registry does not contain information on ethnicity or place of birth, we were faced with the methodological challenge of identifying and

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collecting reliable data on the Iranian population in BC.

The aim of this paper is to describe the research method which we used to identify Iranians diagnosed with cancer in BC and registered within the BC Cancer Registry. This was done using common Iranian names. This report describes the procedures that we followed to generate the name listing.

Materials and Methods

Iranian persons who were diagnosed with cancer while residing in BC were identified by linking specific surnames and given names with the BC Cancer Registry database. In order to do this, a listing of common Iranian surnames and given names was firstly generated from two sources: the 2004 North Shore (North and West Vancouver) residential telephone book and the Screening Mammography Program of BC (SMPBC) database. The North Shore residential telephone book was selected because this community composed the highest density of Iranians in BC (at 37%) (Statistics Canada 2001). One of us, who is Iranian (PY), manually reviewed all the surnames and given names in the telephone book and identified the Iranian names. Selected names were coded as to the likelihood of the name being Iranian. Names were coded as ùhighly probableû if typical of an Iranian name, such as Alizadeh and Mahvash. Names were coded ùprobableû if common to both Iranian and other ethnic groups, such as Muslim and Christian names (Mohammad and Sara). These names were phonetically similar to those of other ethnic groups. All other names were excluded.

The second source, the SMPBC, is a provincial population-based breast cancer screening program which has served the women of BC since 1988. Over 220,000 women visit the screening program annually, representing nearly 50% of all women aged 50-74 in BC (SMPBC 2004). Within the SMPBC database, the ùplace of birthû is recorded as self reported by the client. It was therefore possible to obtain all names from women who have attended the SMPBC and who reported ùIranû as their place of birth. Again, one of us (PY) reviewed the generated surname and given name listing and coded these names as ùhighly probableû if it was clearly typical of an Iranian name, and ùprobableû if common there was reasonable likelihood that it was an Iranian name. All other names were excluded.

A listing of Iranian names was then created, which was then used to link with the BC Cancer Agency to identify Iranians who had been diagnosed with cancer in BC. The results of this linkage have been reported elsewhere (Hislop et al 2005).

Results

Using the method described above, 1729 surnames and 737 given names were selected from the telephone book, and 1881 surnames and 757 given names from SMPBC. The majority of these names were coded as ùhighly probableû Iranian, at 98% and 96% for surnames and given names, respectively. Table 1 shows the numbers of surnames and given names by source and level of probability. 12% of surnames and 10% of given names were common to both sources. The proportions of surnames and given names that were considered to be ùhighly probableû Iranian were slightly lower from the telephone book as compared to the SMPBC database

A listing of the common ùhighly probableû Iranian surnames and given names from within the SMPBC database is shown in Table 2. This included surnames with 4 or more entries, and given names with 20 or more entries. We were unable to provide a similar listing of names from the telephone book because the number of entries had not been recorded.

Discussion

We encountered a major obstacle in our research to examine cancer patterns in several Iranian populations using administrative databases, the lack of ethnicity data in the BC Cancer Registry. However, since Iranian names are quite different from other ethnic groups, the creation of a listing of Iranian names allowed us to identify Iranian persons from within this registry. Other investigators have also used name listings to identify specific ethnic groups with distinctive names, including Chinese, South Asian and Hispanic peoples (Becker et al 1988, Choi et al 1993, Coldman et al 1988, Hage et al 1990, Hislop et al 2000, Nicoll et al 1986, Sheth et al 1997).

Although this methodological approach did not permit us to identify all Iranian persons diagnosed with cancer in BC, it did allow us to conduct exploratory work to identify

Table 1. Numbers and Relative Frequencies for Iranian Names by Source and Level of Probability

	Telephone Directory Only	SMPBC Only	Both Sources	TOTAL
SURNAMES				
Highly probable	1313 (97%)	1504 (99.8%)	374	3191
Probable	42 (3%)	3 (0.2%)	0	45
TOTAL	1355 (100%)	1507 (100%)	374	3236
GIVEN NAMES				
Highly probable	560 (94%)	603 (97.7%)	140	1303
Probable	37 (6%)	14 (2.3%)	0	51
TOTAL	597 (100%)	617 (100%)	140	1354

Table 2a. Common Iranian Surnames, as Identified in the SMPBC Database*

Afshar	Jafari	Rezvani
Ahmadi	Jamshidi	Sadeghi
Alizadeh	Karimi	Salehi
Bagheri	Khademi	Samimi
Esfandiari	Mahboobi	Shojaei
Fallah	Mahdavi	Sohrabi
Fatemi	Mohammadi	Tavakoli
Ighani	Molavi	
Imani	Naderi	

* Restricted to "Highly probable" names with 4 or more entries.

Table 2b. Common Iranian Given Names, as Identified in the SMPBC Database*

Ashraf	Maryam	Shahin
Farideh	Mina	Shahla
Fatemeh	Nahid	Tahereh
Homa	Nasrin	Zahra
Mahin	Parvaneh	Zohreh
Mahvash	Parvin	
Manijeh	Sedigheh	

* Restricted to "Highly probable" names with 20 or more entries.

cancer patterns in Iranian persons residing in BC and to compare this pattern with that in the general BC population and several areas of Iran. This information could be very useful for the planning of cancer control strategies for this population in BC.

The assignment of ethnicity based upon surname and given names may lead to misclassification from overinclusion or exclusion of persons within the ethnic group of interest. Since it is rare for Iranian immigrants to anglicize their names upon immigration, we believe that this would reduce the likelihood of inclusion of non-Iranian persons into linkage studies. This is supported by the fact that most of the surnames and given names that were identified were judged to be ùhighly probableû Iranian names. Another potential source of misclassification is due to intermarriage between individuals of different ethnic groups. However, this has been a rare event within the Iranian community in BC.

It was a concern that there was only a small overlap in names from the two sources, suggesting that the pool of Iranian names in BC has not been saturated. Each of the two sources probably does not provide the majority of names for Iranian immigrants to BC and this may be due to gender bias within each source. The telephone book most likely lists male names whereas the SMPBC database is restricted to females. It is common practice for Iranian women keep their maiden surnames after marriage and hence their names may be less likely listed in the telephone directory. Also, the telephone directory is limited to current residents in one area of BC, whereas the SMPBC includes all areas of the province and covers a much broader time period. Hence, the name listing created from the SMPBC would be more complete for the Iranian population over the course of the study period, but only for women.

Another limitation of this methodological approach is that information is lacking on immigration status, such as the length of time in Canada. This information could be very helpful for measuring the degree of acculturation to the host country. Where possible, linkage with Immigrant databases could definitely strengthen research being conducted among immigrants.

In closing, it is important to better understand the cancer patterns and related behaviors among immigrant groups in order to better address cancer control strategies for these peoples in their host countries. Surnames and given names can be very helpful to identify persons within populations with distinctive names when ethnicity data is lacking.

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