9.0 CONCLUSION

In recent years researchers have adopted the population health paradigm to the analysis of health and mortality inequalities (Evans, Barer and Marmot, 1994; Health Canada, 1996). Essentially, this model is predicated on the premise that differences in health and death risk result from complex interrelations of genetic, biological, environmental, social and economic differentials in the population. The population health framework has tended to emphasise the importance of socioeconomic inequalities as the determinants of health and disease in the population. This basic idea has been implicit throughout the present investigation of immigrant mortality. Several mechanisms assumed embedded in the association between nativity and death rates have been explicated. While far from being a comprehensive specification, it was argued that the mortality of immigrants in host nations can be understood from the point of view of their social demographic compositions (age, sex, and marital status distributions), factors associated with their countries of origin, and factors associated with the country of destination. Among the former set of factors are cultural influences and conditions prior to migration. For the most part in this analysis, the influence of country of origin was found to be important in accounting for immigrant mortality in Canada.

It was surmised that one of the unmeasured factors linking immigrant mortality to the death rates of their home based countries (and there are potentially many) is their common national culture. In general, the association of country of origin death rates and corresponding immigrant death rates is inverse: high origin death rates are associated with lower immigrant mortality. However, separate analyses also revealed that for the more recent immigrants the association is positive. This difference may reflect the

different nature of immigration between the two categories of migrants to Canada. In the case of the Old Wave, many immigrants are from Western Europe, where national death rates have declined to fairly low levels in recent decades, as these countries have reached the final stages of their demographic and epidemiological transitions. However, many of the more recent arrivals to Canada are from developing countries, where in comparison to Europe and Canada mortality is relatively high. Thus, coming from generally high mortality countries, the newer immigrants will tend to reflect to some extent this fact. On the other hand, it also possible that this finding is a reflection of the operationalizations employed to capture "origin" effects for the New Wave immigrants. Further analysis is needed with more refined measures of country of origin death rates for new immigrant groups in Canada. It will be important to focus on specific nationality groups and their countries of origin. In this study only average death rates for groups of countries could be assigned to the "origin" variable for the New Wave migrants due to the aggregate nature of this category.

In-depth studies are needed to uncover the cultural factors that may be inherent in immigrant health and mortality differentials. One possible avenue for analysis is to investigate how the background culture of an immigrant group promotes healthy behaviours and practices that in the long term may be salutogenic (e.g., healthy diets). On the other hand, it is also important to investigate how culture may promote unhealthy patterns of living (e.g. excessive use of salt and high consumption of animal fats in the diet). Another important area of concern is how culture may promote or discourage smoking and excessive alcohol consumption, both known for their eroding effects on the organism.

The multivariate analyses also indicated that SES and acculturation are in many cases linked to immigrant mortality differentials, though not always in the predicted direction. That is to say, in some cases, SES and acculturation raise the conditional risk of dying, while in others an opposite effect was detected. Again, more refined measures of acculturation are needed in order to examine this aspect of immigrant health. Acculturation is a multidimensional concept. It is highly unlikely that the present operationalization could adequately capture this concept in its entirety.

Health selectivity was also discussed as another important source of mortality differentials. The difficulty with observing selectivity effects directly led to the supposition that selection influences on immigrant mortality should diminish with duration of residence in Canada. Health selection should be felt most intensely in the early stages of the migration experience. It was also recognized in the analysis that there may be several functional forms of the selectivity effect on mortality rates. Unfortunately, this remains an elusive factor in terms of direct measurement. For this reason, duration of residence in Canada was used as a proxy to capture the effects of health selectivity on mortality rates of immigrants. The analysis was largely confined to three subpopulations: the Canadian born (as reference), and two classes of migrants, the New Wave (recent arrivals) and the Old Wave (more established immigrants).

There is a gradient in mortality risk associated with recency of settlement to Canada. In virtually every case examined in this study---general or cause-specific mortality---New Wave immigrants showed notably lower conditional risks of death as compared to the Canadian born and the Old Wave more established immigrants. This differential was generally observed even after statistical controls for a variety of factors

were taken into account. What this finding seems to suggest is that newcomers experience a better level of overall health than do their more established counterparts and the host population, while in relation to the host population, the immigrants as a whole (Old and New Wave) share reduced conditional chances of mortality. But the smaller difference in death risk between the Old Wave migrants and the receiving population suggests that with time immigrants experience some erosion of their initial health advantage in the early years of relocation to Canada. Stated differently, health selectivity accounts for part of the overall immigrant advantage in mortality over the Canadian born; but this advantage tends to reduce with increased duration in the new land. It may be that the positive health selectivity of immigrants never quite disappears, though it reduces in intensity with time. Of course, other factors are also important in accounting for mortality differentials, including genetic and environmental ones. This remains a promising area of further investigation. Below I sketch out a number of additional suggestions.

Researchers must begin to rely on record linkage to study immigrant health and mortality. The linkage of vital statistics records with other files would allow a more complete picture of the determinants of health than could be ascertained using vital statistics and census data alone. The linking of various administrative records will be necessary to gain further insight on not only the socioeconomic status of decedents, but also such things as use extent of health care services, medication and medical treatments. A question worth pursuing is: Do immigrants use health services more frequently than the Canadian born? If so, how do their patterns of utilization change with duration in the country? Is utilization more likely in the very early stages settlement, or does it pick up gradually with time? These questions are interesting in their own right, but they of critical

importance for health care policy and service delivery for newcomers to Canada. Indeed, it may be that one of the principal reasons behind the immigrants' low death rates rests with the fact that in most cases newcomers to this country are from populations with less advanced health care systems than ours. Once in Canada, the immigrants will have access to a resource not as readily available in their home countries. In combination with health selectivity, this may account for the immigrants' lower death rates in general.1

Another important focus for further analysis is the potential role of the welcoming immigrant ethnic community in helping to promote the health and well being of newcomers. The indication derived in this investigation (though its measurement is far from perfect) is that the ethnic community serves an important function for the immigrants. The effect of community would seem to be particularly relevant in deterring conditions having to do with problems in living, like suicide, homicide, and accidents and other forms of violence. The social support and integrative function of the community can make a difference in reducing the risk of ill health and thus premature mortality in general. Again, there is a need to systematically study community effects in connection with immigrant health and mortality. With some exceptions (notably the research on the mental health of newcomers), the literature in this area is limited. How do informal and formal community organisations promote health among immigrants? This is a question worth exploring in detail.

---

1 The principal problem with the survey as the sole means of gathering information on immigrant health is that it is often limited to self-reported perceived health status, or to the recollection of past behaviours. Unless it is a longitudinal design (and this has its own set of problems) only past behaviours can be studied. Therefore the survey is not a sufficient method to help us arrive to a more complete picture of immigrant health and patterns of health care service utilization. The best way to actualise this task would be to rely on the linkage of individual health records and vital statistics, census, and other pertinent administrative records. Unfortunately, the record-linkage approach is daunting in its complexity and costs. One other possibility is do conduct a longitudinal survey of immigrants as to observe change in response to health

A further avenue for investigation pertains to the following question: Is it possible that although immigrants enjoy relatively low death rates overall and also from most diseases, they may at the same time experience high rates of morbidity and sickness? The answer to this question may not be as intuitive as it may seem, and much research will be needed in order to provide a complete picture. The intuitive answer would be that given low mortality in a population there should also prevail in that population a correspondingly low level of morbidity. This is not necessarily so.

Indeed, low mortality levels in a population can be associated with a seemingly paradoxically high prevalence of morbidity (Pollard, 1979). A case in point is the industrialized nations. Having completed their epidemiological and demographic transitions, advanced societies enjoy very high life expectancies---the highest in history (Olshansky and Ault, 1986; Trovato and Lalu, 1996). And yet, in these societies the proportion of the population living with serious chronic health complications is rising (Riley, 2001). Why? The answer lies in the fact that we now have very effective and sophisticated therapies that prolong life, even in the face of such serious diseases as cancer and complications of the heart and circulatory system. True, such conditions will eventually kill those afflicted, irrespective of therapies, but such individuals, frail as they may be, are able to live with chronic ailments due to the availability of medicines, surgery and other therapies that prolong the lives of the sick. Thus, to extend this point to the present study, it may be that although immigrants enjoy lower death rates overall than the receiving population, they may not be as healthy as expected on the basis of this

---

related questions and health related behaviours, including seeking medical help and use of health services. For a study of this nature in the context of Australia see Kliewer and Jones (1997).

observation alone.2 Therefore, more research is needed to investigate this seemingly paradoxical potential relationship with respect to immigrant mortality and health.

Researchers must also address the question of how acculturation of immigrant lifestyles and behaviours evolve with increased duration of residence in the new society, and how this in turn affects health and mortality. While some aspects of the Old World will always remain with the immigrants, it seems inescapable that some degree of acculturation will take place. How do lifestyles and habits change with acculturation? How much exercize do immigrants get on a regular basis? To what extent do newcomers change their usual diets after resettlement? Given dietary modifications, are the changes for the better in terms of nutrition?

It would also be necessary to examine immigrants' understanding of the importance of such things as regular physical check ups and proper health screening for certain diseases. For instance, in the case of women, it would be important to determine the extent to which they participate in regular check up for cervical cancer (i.e. Pap smear). How frequently do they receive breast examinations or mammograms as preventive measures against breast cancer? Further questions need to be answered with regard to sexual and reproductive health (e.g., hysterectomies, tubal ligation, abortion and proper contraceptives). For men, prostate cancer is an important health problem, especially with advancing age. How frequently do immigrant men submit to regular tests for this type of condition?

It is also extremely important to monitor changes in cholesterol and obesity, as these conditions are strongly associated with diabetes and heart disease. Finally, it will be

2 For further discussion on this point as it relates to immigrants in the context of Holland and Denmark, consult the studies of Uitenborek and Verhoeff (2002) and of Krasnik et al (2002).

necessary to monitor chronic health conditions that may prevail in immigrant populations, namely cancer, heart disease, diabetes, respiratory problems, and digestive complications. As was indicated earlier, notwithstanding low death rates from such diseases, it is highly possible that morbidity rates may be quite high among different immigrant populations, particularly among the more established immigrant groups, who by virtue of their migration history, are generally undergoing demographic ageing. 3

Beside concerns with physical health, attention must also be directed to the mental health of immigrants. More knowledge is needed with respect to patterns and differences in the incidence and prevalence of clinical depression and suicide ideation among immigrants, young and old. Some literature has indicated that immigrant women suffer more depression than do immigrant men. This may need to be examined in more detail, as it may be an incomplete account of depression among immigrants. Immigrant men many not be as willing to disclose feelings of depression and helplessness. This remains a challenge for additional study.

In this connection, specific attention must also be directed to the health of refugee immigrants. Due to lack of appropriate data on refugees, this study could not examine mortality among refugees. In fact, our understanding of refugee health and general adaptation to Canadian society remains rather limited. Data are particularly lacking in regard to refugee health, morbidity, and mortality. It may be that given the welcoming nature of Canadian society refugees do not suffer any special health problems as

---

3 A study by Wang and associates (2000) concerning arthritis among immigrants in Canada suggests that there is a gradient of incidence of this condition based on the region of origin of the immigrants. For example, Asians (more recent immigrants in general) had lower levels of arthritis than Europeans (older immigrants), who themselves were very similar to the level of the Canadian born population.

compared to immigrants in general. But this remains an empirical question.4 One hypothesis worth pursuing is that life stresses are greater among refugees than among immigrants in general, due to the generally problematic nature of the refugee experience (i.e., forced migration). If this is indeed the case, refugees will likely suffer high levels of psychiatric morbidity than the general population. In this connection, a study by Swederlow (1991) in the United Kingdom suggests that among Vietnamese refugees in Britain after the end of the Vietnam War, overall mortality was very low as compared to expectations based on England and Wales' national rates. The low mortality incidence resulted primarily from the refugees' very low death rates from ischaemic heart disease and colorectal cancer in each sex, and breast cancer in women. But among the refugees some less major causes of death were higher than the host society's---tuberculosis and stomach cancer in both sexes, cancers of the nasopharynx and liver in males, and peptic ulcers in females, and cancer of the penis in males. The unexpected overall lower mortality of the refugees may be a function of the sharp improvement in social and economic environment between the experience of being a refugee in the home country and life in the receiving society (Eaton, 1992; Rennert, 1994). This is yet another hypothesis (among many others) in need of verification. Clearly, more systematic attention to immigrant health and mortality conditions is required by the health research community.

Canada is a country being transformed by immigration. To the extent that immigrants make up a significant portion of the total population, their health profile will increasingly determine the overall health picture of the nation. Further work in this area

4 Recent research on a general conceptual paradigm for the analysis of refugee mental health has been proposed by Watters (2001) and by Silove, Steel and Watters (2000).

must also incorporate the survival experience of not only immigrants as compared to the Canadian born and their populations of origin, but also their descendants. This would strengthen generalizations concerning the relationship of environment change, as in migration, and its possible effects on health and mortality (Liao et al., 2003). Another fruitful avenue for further investigation is the relationship of the geographic location in which immigrants settle and the effects of geography on survival probabilities. In this study there is some indication that region of residence is an important differentiator of mortality variations among immigrants and the Canadian born population. Clearly, part of the association of geographic location with mortality must be related to geography's correlation with quantity, quality, and persons' access to socioeconomic opportunities.

REFERENCES

Abu-Zeid, H.A.H., K.K. Maini and N.W. Choi. 1978. "Ethnic differences in mortality from ischemic heart disease: A study of migrants and native populations." Journal of Chronic Diseases 31(3): 137-146.

Adelstein, Abe M., M. G. Marmot, G. Dean and J.S. Bradshaw. 1986. "Comparison of mortality of Irish immigrants in England and Wales with that of Irish and British nationals." Irish Medical Journal 79 (7): 185-189.

Alba, Richard D. 1976. "Social assimilation among American Catholic national origin groups." American Sociological Review 41:1030-1046.

Ali, Jennifer. 2002. "Mental health of Canada's immigrants." Health Reports. Supplement to Volume 13: 101-113.

Antonovsky, Aaron. 1979. Health, stress and coping. San Francisco: Jossey-Bass.

Antunes, G., C. Gordon, C.M. Gaitz and J. Scott. 1974. "Ethnicity, socioeconomic status, and the etiology of psychological distress." Sociology and Social Research 58 (July): 361-368.

Agresti, Alan. 1990. Categorical data analysis. New York: Wiley.

Archer, Dane and Rosemary Gartner. 1984. Violence and crime in cross-national perspective. New Haven: Yale University Press.

Aries, Philippe. 1974. Western attitudes toward death, from the Middle Ages to the present. (Translated by Patricia M. Ranum). Baltimore: Johns Hopkins University Press.

Aries, Philippe. 1982. The hour of our death. (Translated by Helen Weaver). New York: The Free Press.

Aries, Philippe. 1985. Images of man and death. (Translated by Janet Lloyd). Cambridge, MA: Harvard University Press.

Badets, Jane. 1993. “Canada’s immigrants: Recent trends.” Canadian Social Trends (Summer): 8-11.

Balzi, Daniela, Marco Geddes, A. Brancker and D. M. Parkin. 1994. “Cancer mortality in Italian migrants and their offspring in Canada.” Cancer Causes and Controls 6: 68-74.

Bandura, Albert. 1973. Aggression: A social learning analysis. Englewood Cliffs, NJ: Prentice Hall.

Barrera, Manuel, Jr. 1986. "Distinctions between social support concepts, measures and models." American Journal of Community Psychiatry 14 (4): 413-445.

Beiser, Morton. 1988. “Influences of time, ethnicity, and attachment on depression in Southeast Asian refugees.” American Journal of Psychiatry 145: 46-51.

Beiser, Morton and Ilene Hyman. 1997. “Southeast Asian refugees in Canada.” Pp. 35-56 in Ihsan Al-Issa and Michel Tousignant (Editors), Ethnicity, immigration, and psychopathology. New York: Plenum Press.

Berkman, L.F. 1985. "The relationship of social networks and social support to morbidity and mortality." In Sheldon Cohen and S. Syme (Editors), Social support and health. New York: Academic Press.

Berkman, L.F. and S.L. Syme. 1979. "Social networks, host resistance and mortality: A nine-year follow-up study of Alameda County residents." American Journal of Epidemiology 109 (2): 186-204.

Berkman, Lisa F. 1984. "Assessing the physical health effects of social networks and social support." Annual Review of Public Health 5:413-432.

Berkman, L.F. 1985. "The relationship of social networks and social support to morbidity and mortality." In Sheldon Cohen and S. Syme (Editors), Social support and health. New York: Academic Press.

Berkman, Lisa F. and Lester Breslow. 1983. Health and ways of living: The Alameda County Study. New York:Oxford University Press.

Berkman, Lisa F., Lester Breslow and D. L. Wingard. 1983. "Health practices and mortality risk." Pp. 61-112 in Health and ways of living: The Alameda County Study, edited by Lisa F. Berkman and Lester Breslow. New York: Oxford University Press.

Berkman, L.F. and S.L. Syme. 1979. "Social networks, host resistance and mortality: A nine-year follow-up study of Alameda County residents." American Journal of Epidemiology 109 (2): 186-204.

Berry, J. W. 1992. “Acculturation and adaptation in a new society.” International Migration (issue on Migration and Health in the 1990s), 30:69-86.

Berry, John W., Nichol Kim, Thomas Minde and Doris Mok. 1987. "Comparative studies of acculturative stress." International Migration Review 21 (3): 491-511.

Blackburn, Henry. 1989. "Trends and determinants of CHD mortality: Changes in risk factors and their effects." International Journal of Epidemiology 18 (Supplement to Volume 1): 210-215.

Blackburn, Henry and Russel Luepker. 1986. “Heart Disease.” Pp. 1159-1194 in John M. Last (Editor), Public health and preventive medicine. Norwalk, CT: Appleton-Centruy-Crofts.

Bland, C. Roger, Ronald J. Dyck, S. Newman and H. Orn. 1998. “Attempted suicide in Edmonton.” Pp. 136-150 in Antoon A. Leenaars, Susanne Wenckstern, I. Sakinofsky, R. J. Dyck, M. J. Kral and R. C. Bland (Editors), Suicide in Canada. Toronto: University of Toronto Press.

Blazer, Dan G. 1982. "Social support and mortality in an elderly community population." American Journal of Epidemiology 115 (5): 684-694.

Borjas, George J. 1991. "Immigration and self-selection." Pp. 29-76 in John M. Aboud and Richard B. Freedman (eds.), Immigration, trade and the labor market. Chicago and London: The University of Chicago Press.

Bowling, Anne. 1987. "Mortality after Bereavement: A Review of the literature on survival periods and factors affecting survival." Social Science and Medicine 24 (2): 117-124.

Boyd, Monica, John Goyder, F. E. Jones, H. A. McRoberts, P. C. Pineo and John Porter. 1985. Ascription and achievement: Studies in mobility and status attainment in Canada. Ottawa: Carleton University Press.

Brahimi, M. 1980. "La mortalite des estrangers en France." Population 35: 603-622.

Breault, K.D. 1986. "Suicide in America: A test of Durkheim's theory of religious and family integration, 1933-1980." American Journal of Sociology 92: 628-656.

Brent, D. A., J. Bridge, B. A. Johnson, and J. Connolly. 1996. “Suicidal behaviour runs in families.” Archives of General Psychiatry 53:1145-1152.

Breslow, N.E. and N.E. Day. 1985. "The standardized mortality ratio." Pp. 55-74 in P.K. Sen (Editor), Biostatistics: Statistics in biomedical, public health and environmental sciences. Amsterdam: North-Holland.

Breton, Raymond. 1964. "Institutional completeness of ethnic communities and the personal relations of immigrants." American Journal of Sociology 70:193-205.

Brundtland, Gro Harlem. 2000. “Editorial: mental health of refugees, internally displaced persons and other populations affected by conflict.” Acta Psychiatrica Scandinavica 102: 159-161.

Buechley, R.W. 1950. Mortality differentials among immigrants. M. A. Thesis. University of Washington.

Bunting, Trudi and Pierre Filion (Editors). 2000. Canadian cities in transition: The twenty-first century. Don Mills, Ontario: Oxoford University Press.

Burch, Thomas K. 1990. "Family structure and ethnicity." Pp. 199-212 in S.S. Halli, F. Trovato and L. Driedger (Editors), Ethnic demography: Canadian immigrant, racial and cultural variations. Ottawa: Carleton University Press.

Burwill, P.W., T.L. Woodings, N.S. Stenhouse and M.G. McCall. 1982. "Suicide during 1961-70 of migrants in Australia." Psychological Medicine 12: 295-308.

Burwill, P.W., M.G. McCall, N.S. Stenhouse and T.A. Reid. 1973. "Deaths from suicide, motor vehicle accidents and all forms of violent deaths among migrants in Australia, 1962-66." Acta Psychiatrica Scandinavica 49: 28-50.

Burwill, P. W. 1998. “Migrant suicide rates in Australia and in country of birth.” Psychological Medicine 28 (1): 201-208.

Burwill, P.W., T.L. Woodings, N.S. Stenhouse and M.G. McCall. 1982. "Suicide during 1961-70 of migrants in Australia." Psychological Medicine 12:295-308.

Calabresi, M. 1945. "The relation of country of origin to mortality from various causes in New York State." Human Biology 17: 340-367.

Caplan, G. 1974. Support Systems and community mental health: Lectures on concept development. New York: Behavioural Publications.

Cassel, J. 1974. "Psychological processes and stress: Theoretical formulations." International Journal of Health Services 4 (3): 471-482.

Cassel, John. 1974. “Hypertension and cardiovascular diseases in migrants: A potential source of clues.” International Journal of Epidemiology 3: 204-206.

Cassel, J. 1976. "The Contribution of the social environment to host resistance." American Journal of Epidemiology 104:107-123.

Cassel, John. 1975. Studies of hypertension in migrants. In Paul Oglesby (Editor), Epidemiology and control of hypertension. New York: Stratton.

Castles, Stephen and Mark J. Miller. 1997. The age of migration (Second edition). New York: The Guilford Press.

Chan, Jijian, Edward Ng and Russell Wilkins. 1996. “The health of Canada’s immigrants in 1994-95.” Health Reports 7 (4): 33-45.

Chan, Jijian, Russell Wilkins and Edward Ng. 1996. “Health expectancy by immigrant status.” Health Reports 8 (3): 29-37.

Choi, N.W. 1968. "Ethnic distribution of gastrointestinal cancer in Manitoba." American Journal of Public Health 58:2067-2081.

Choi, N.W., D.W. Entwistle, Michaluk and N. Nelson. 1971. "Gastric cancer in Icelanders in Manitoba." Israel Journal of Medical Sciences 7:1500-1508.

Clogg, C.C. and S.R. Eliason. 1987. "Some common problems in log-linear analysis." Sociological Methods and Research 16(1): 8-44.

Coale, Ansley J. and Paul Demeny. (1983). Regional model life tables and stable populations. New York: Academic Press.

Cobb, S. 1976. "Social support as a moderator of life stress." Psychosomatic Medicine 38:300-314.

Cohen, J.B. and J.A. Brody. 1981. "The epidemiologic importance of psychosocial factors in longevity." American Journal of Epidemiology 114(4): 451-461.

Cohen, Lawrence E., James Kluegel and Kenneth Land. 1981. "Social inequality and predatory criminal victimization: An exposition and test of a formal theory." American Sociological Review 46 (5): 505-524.

Cohen, Sheldon and Leonard S. Syme (Editors). 1985. Social support and health. New York: Academic Press.

Cooper, Richard S., Charles N. Rotimi and Ryk Ward. 1999. “The puzzle of hypertension in African-Americans.” Scientific American (February): 56-63.

Collins, W. James and David K. Shay. 1994. “Prevalence of low birth weight among Hispanic infants with United States-born and foreign-born mothers: The effect of urban poverty.” American Journal of Epidemiology 139 (2): 184-192.

Courbage, Youssef and Myriam Khlat. 1995. “La Mortalite’ et les causes de ceces des Marocains en France. I. La mortalite generale: Une confirmation del la sours-mortalite masculine malgre les problemes de mesure.” Population 1:33-60.

Coy, P.S., S. Grzybowski and J.F. Rowe. 1968. "Lung cancer mortality according to birthplace." Canadian Medical Association Journal 99 (Sept.): 476-483.

Craig, James R. 1990. Migration, social change, and health: A Samoan community in urban California. Stanford, CA: Stanford University Press.

Darroch, Gordon A. and W.G. Marston. 1988. "Patterns of urban ethnicity: Toward a revised ecological model." Pp. 127-159 in N. Iverson (Editor), Urbanism and urbanization: Views, aspects, and dimensions. Leiden: E. J. Brill.

De Man, Anton F. 1998. “Correlates of suicidal ideation: Personal variables, stress and social support.” Pp. 151-161 in Antoon A. Leenaars, Susanne Wenckstern, I. Sakinofsky, R. J. Dyck, M. J. Kral and R. C. Bland (Editors), Suicide in Canada. Toronto: University of Toronto Press.

deCatanzaro, Denys. 1981. Suicide and self-damaging behavior: A Sociobiological perspective. New York: Academic Press.

Dunt, D.R. 1982. "Recent mortality trends in the adult Australian population and its principal ethnic groups." Community Health Studies 6 (3): 217-222.

Durkheim, Emile. 1951[1887]. Suicide (Translated by J.A. Spaulding and G. Simpson). New York: Free Press.

Dohrenwend, Bruce P. and Barbara Dohnenwend (Editors). 1974. Stressful life events: Their nature and effects. New York: Wiley.

Dohrenwend, Bruce P. (Editor). 1998. Adversity, stress and psychopathology. Oxford: Oxford University Press.

Dorland's Pocket Medical Dictionary. 1977 (Twenty-second edition). Philadelphia: W. B. Saunders Co.

Driedger, Leo. 2003. Race and ethnicity. Don Mills: Oxford University Press.

Dressler, William W. 1982. Hypertension and culture change: Acculturation and disease in the West Indies. South Salem, NY: Redgrave.

Dressler, William W. 1985. "Psychosomatic symptoms, stress, and modernization: A model." Culture, Medicine, and Psychiatry 9: 257-286.

Duleep, Harriet O. 1989. "Measuring Socioeconomic mortality differentials over time." Demography 26 (2): 345-351.

Dunn, James R. and Isabel Dyck. 2000. Social determinants of health in Canada's immigrant population: results from the National Population Health Survey." Social Science and Medicine 51: 1573-1593.

Eaton, William W. 1992. "Mental health in Mariel Cubans and Haitian boat people." International Migration Review 26 (4) 1395-1415.

Egolf, Brenda, Judith Lasker, S. Wolf and L. Potvin. 1992. "The Roseto effect: A 50-year comparison of mortality rates." American Journal of Public Health 82(8): 1089-1092

Emploi et Immigration Canada, 1987. Loi sur l'equite' en matiere d'emploi, reglements et annexes. Ottawa: WH3-629.

Epstein, Frederick H. 1989. "The Relationship of lifestyle to international trends in CHD." International Journal of Epidemiology 18 (3) (Supplement No. 1): 203-209.

Evans, Robert G., Morris L. Barer and T. R. Marmot (Editors). 1994. Why are some people healthy and others not? The determinants of health of populations. New York: Aldine de Gruyter.

Evans, J. 1987. "Introduction: Migration and health." International Migration Review 3 (21): 5-14.

Fielding, Jonathan E. 1986. “Smoking: Health effects and control.” Pp. 999-1038 in John M. Last (Editor), Public health and preventive Medicine. Norwalk, CT: Appleton-Century-Crofts.

Feinstein, J. 1993. “The Relationship between socioeconomic status and health: A review of the literature.” Milbank Quarterly 71: 279-322.

Fox, A. P. Goldbatt and D. Jones. 1985. “Social class mortality differentials: Artefact, selection, or life circumstance?” Journal of Epidemilogy and Community Health 32: 73-78.

Gartner, Rosemary. 1990. "The victims of homicide: A temporal and cross-national comparison." American Sociological Review 36:92-106.

Gastil, Raymond D. 1971. "Homicide and a regional culture of violence." American Sociological Review 36: 412-427.

Gavrilov, L.A. and N.S. Gavrilova. 1991. The biology of life span: A qualitative approach (Edited by V.P. Skulachev). CHUR: Harwood Academic Publishers.

Geerken, Michael and Walter R. Gove. 1974. "Race, sex, and marital status: Their effects on mortality." Social Problems 21 (73-74): 567-580.

George, M.V. 1970. Internal migration in Canada. Ottawa: Dominion Bureau of Statistics.

George, M.V. 1978. Place of birth and citizenship of Canada's population. Ottawa: Statistics Canada. Catalogue No. 99-701.

Gerstel, Naomi, C.K. Riesman and S. Rosenfield. 1985. "Explaining the symptomatology of separated and divorced women and men: The role of material conditions and social networks." Social Forces 64 (1): 84-101.

Gibbs, Jack P. and William T. Martin. 1964. Status integration and suicide: A sociological study. Eugene, OR: University of Oregon Press.

Gold, Martin. 1958. "Suicide, homicide and the socialization of aggression." American Journal of Sociology 63: 651-661.

Goldman, Noreen. 1993. "Marriage selection and mortality patterns: Inferences and Fallacies." Demography 30 (2): 189-208.

Gomez, Scarlett Lin, Gem M. Le, C.A. Clarke, S.L. Glaser, A-M. France and D.W. West. 2003. “Cancer incidence patterns in Koreans in the US and in Kangwha, South Korea.” Cancer Causes and Control 14: 167-174.

Gordon, Milton. 1964. Assimilation in American life. New York: Oxford University Press.

Gove, Walter R., Michael Hughes and C.B. Style. 1983. "Does marriage have positive effects on the psychological well-being of the individual." Journal of Health and Social Behavior 24: 122-131.

Green, Manfred S. and Israela Peled. 1992. "Differences in the prevalence of hypertension by ethnic origin and age at immigration in a cohort of 5,146 Israelis." American Journal of Epidemiology 135 (11): 1237-1250.

Guillet, Edwin C. 1937. The great migration. Toronto:Thomas Nelson and Sons.

Geddes, M., D. M. Parkin, M. Khlat, D. Balzi, and E. Buiatti. (Editors). 1993. Cancer in Italian migrant populations. Lyon, France: International Agency for Research on Cancer. IARC Scientific Publications No. 123.

Geddes, Marco, Daniela Balzi, E. Buiatti, M. Khlat and D. Parkin. 1991. “Cancer in Italian migrants.” Cancer Causes and Control 2: 133-140.

Gilmour, Heather and Jane F. Gentleman. 1999. “Mortality in metropolitan areas.” Health Reports 11 (1): 9-20.

Gove, Walter. 1973. "Sex, marital status, and mortality." American Journal of Sociology 79:45-67.

Hachney, S. 1969. "Southern violence." American Historical Review 39:906-925.

Haenszel, William. 1975. "Migrant studies." Pp. 361-370, in J.F. Fraumeni Jr. (Editor), Persons at high risk of cancer: An approach to cancer etiology and control. New York: Academic Press.

Haenszel, William. 1961. "Cancer mortality among the foreign-born in the United States." Journal of the National Cancer Institute 26 (1): 37-132.

Haenszel, William. 1966. Epidemiological approaches to the study of cancer and other chronic diseases. National Cancer Institute Monograph 19.

Haenszel, William and M. Kurihara. 1968. "Studies of Japanese migrants. I. Mortality from cancer and other diseases among Japanese in the United States." Journal of the National Cancer Institute 40:43-68.

Haenszel, William, M. Kurihara, M. Segi and R.K.C. Lee. 1972. "Stomach cancer among Japanese in Hawaii." Journal of the National Cancer Institute 49: 969-988.

Halli, Shiva, Frank Trovato and Leo Driedger (Editors). 1990. Ethnic demography: Canadian immigrant, racial and cultural variations. Ottawa: Carleton University Press.

Halli, Shiva and Leo Driedger (Editors). 1999. Immigrant Canada. Toronto: University of Toronto Press.

Health Canada. 1996. Towards a common understanding: Clarifying the core concepts of population health. A discussion paper (December, 1996).

Health Canada. 1999. Canadian research on immigration and health: An overview. Ottawa: Minister of Public Works and Government Services Canada (Cat. No. H21-149/1999E).

Henry, Andrew F. and James F. Short. 1954. Suicide and homicide. Glencoe, Ill.: Free Press of Glencoe.

Hiller, H. Harry. 1986. Canadian society: A Macro analysis. Scarborough: Prentice-Hall Canada.

Holding, T. and B. Barraclough. 1978. "Undetermined deaths---Suicide or accident?" British Journal of Psychiatry 133: 542-549.

Hinde, Andrew. 1999. Demographic methods. London: Arnold.

House, James, R. Kessler, A.R. Herzog, R. Mero, A. Kinney and M Breslow. 1990. “Age, socioeconomic status, and health.” Milbank Quarterly 68: 383-411.

House, James R., Karl R. Landis and Debra Umberson. 1988. "Social relationships and health." Science 241: 540-545.

House, James S. 1987. "Social support and social structure." Sociological Forum 2 (1): 135-146.

Hu, Yuanreng and Noreen Goldman. 1990. "Mortality differentials by marital status: An international comparison." Demography 27(2): 233-250.

Hull, Diana. 1979. "Migration, adaptation and illness." Social Science and Medicine 13A: 25-36.

Hummer, Rober A., Monique Biegler, Peter deTurk, D. Forbes, P.W. Friesbie, Y. Hong and S. Pullum. 1999. "Race/ethnicity, nativity, and U.S. infant mortality." Social Forces 77: 1083-1118.

Jacobson, Paul H. 1963. "Mortality of the native and foreign-born population in the United States." Proceedings, International Population Conference, IUSSP, New York, 1961. Volume 1: 667-674.

Janes, Craig R. 1990. Migration, social change, and health. Stanford, CA: Stanford University Press.

Johansson, Leen Maria, Jan Sundquist et al. 1997. “Suicide among foreign-born minorities and native Swedes: an epidemiological follow-up study of a defined population.” Social Science and Medicine 44 (2): 181-187.

Joung, Inez. 1996. Marital Status and health: Descriptive and explanatory studies. Rotterdam: Thesis, Erasmus University.

Kalbach, Warren E. Ravi Verma, M. V. George, and S. Y. Dai. 1993. Population projections of Visible Minority groups, Canada, provinces and regions, 1991-2016. Ottawa: Statistics Canada, Interdepartmental Working Group on Employment Equity Data.

Kalbach, Warren E. 1970. The Impact of immigration on Canada's population. Ottawa: Dominion Bureau of Statistics.

Kaldor, J., M. Khlat, D. M. Parkin and R. Steinitz. 1990. “Log-linear models for cancer risk among migrants.” International Journal of Epidemiology 19 (2): 233-239.

Kasl, S.V. 1984. "Stress and health." Annual Review of Public Health 5:319-341.

Kasl, Stanislav V. and Lisa Berkman. 1985. "Health consequences of the experience of migration." Annual Review of Public Health 4:69-80.

Kennedy, Leslie W. and David R. Forde. 1990. "Routine activities and crime: An analysis of victimization in Canada." Criminology 28 (1): 137-152.

Kennedy, Leslie W., David R. Forde and Robert A. Silverman. 1989. "Understanding homicide trends: Issues in disaggregation for national and cross-national comparisons." Canadian Journal of Sociology 14 (4): 479-486.

Kestenbaum, Bert. 1986. "Mortality by nativity." Demography 23 (1): 87-90.

Khlat, Myriam. 1993. “Mortalite des Levantins en Australie.” Population 48 (4): 1072-1081.

Kisker, Ellen Eliason and Noreen Goldman. 1987. "Perils of single life and benefits of marriage." Social Biology 34 (3-4): 135-152.

King, H. and W. Haenszel. 1973. "Cancer mortality among foreign and native-born Chinese in the United States." Journal of Chronic Diseases 26: 623-646.

King, H. and F. B. Locke, 1980. "Cancer mortality risk among Chinese in the United States." Journal of the National Cancer Institute 65:1141-1148.

King, Haitung and Frances B. Locke. 1987. "Health effects of migration: U.S. Chinese in and outside the Chinatown." International Migration Review 21 (3): 555-575.

Kitagawa, E. 1977. "On mortality." Demography 14 (4): 381-389.

Kitagawa, Evelyn M. and Philip M. Hauser. 1973. Differential mortality in the United States: A Study in socioeconomic epidemiology. Cambridge MA: Harvard University Press.

Kliewer, Eric and R. Jones. 1997. Immigrant health and the use of medical services: Results from the longitudinal survey of immigrants to Australia. Australia Department of Immigration and Multicultural Affairs. Canberra.

Kliewer, Eric. 1992. "Epidemiology of diseases among migrants." International Migration (Special Issue on migration and health in the 1990s). 30: 141-165.

Kliewer, Erich V. and R.H. Ward. 1988. "Convergence of Immigrant suicide rates to those in the destination country." American Journal of Epidemiology 127 (3): 640-653.

Kmet, Janet. 1970. "The role of migrant population in studies of selected cancer sites: A review." Journal of Chronological Disorders 23:305-324.

Kobrin, Frances E. and Garry E. Hendershot. 1977. "Do family ties reduce mortality? Evidence from the United States, 1966-1968." Journal of Marriage and the Family 39: 737-745.

Kobrin, Frances E. and Alden Speare Jr. 1983. "Out-migration and the survival of ethnic communities." International Migration Review 17 :425-444.

Krasnik, Allan, Marie Norredam, T.M. Sorensen, J.J. Michaelsen, A.S. Neilsen and N. Keiding. 2002. “Effect of ethnic background on Danish hospital utilisation patterns.” Social Science and Medicine 55: 1207-1211.

Kruger, D.E. and I.M. Moriyama. 1967. "Mortality of the foreign born." American Journal of Public Health 57 (3): 496-503.

Krupinski, J. 1967. "Sociological aspects of mental illness in migrants." Social Science and Medicine 1: 267-281.

Krupinski, Jerzy. 1984. "Changing patterns of the migration to Australia and their influence on the health of migrants." Social Science and Medicine 18 (11): 927-937.

Kuller, Lewis H., Ronald E. La Porte and Trevor J. Orchard. 1986. “Diabetes.” Pp. 1225-1258 in John M. Last (Editor), Public health and preventive medicine. Norwalk, CT: Appleton-Century-Crofts.

Kushner, Howard I. 1984. Immigrant suicide in the United States: Toward a psycho-social History." Journal of Social History 18 (1): 3-24.

Kushner, Howard I. 1989. Self destruction in the promised land: A psychocultural biology of American suicide. New Brunswick and London: Rutgers University Press.

Laird, Nan and Donald Olivier. 1981. "Covariance analysis of censored survival data using log-linear analysis techniques." Journal of the American Statistical Association 76 (374): 231-240.

Landale, Nancy S., R. S. Ortopes, and Bridget K. Gorman. 2000. "Immigration and infant Health: Birth outcomes of immigrant and native women." Pp. 244-285 in Donald Hernandez (Editor), Children of immigrants: Health, adjustment, and public assistance. Washington: National Academy Press:

Landale, Nancy S., R. S. Oropesa, Daniel Llanes and B. K. Gorman. 1999. "Does Americanization have adverse effects on health? Stress, health habits, and infant health outcomes among Puerto Ricans." Social Forces 78 (2): 613-641.

Landale, Nancy S., S. Oropesa and B. K. Gorman. 2000. "Migration and infant death: Assimilation or selective migration among Puerto Ricans?" American Sociological Review 65: 888-909.

Larson, Martin G. 1984. "Covariate analysis of competing-risks data with log-linear models." Biometrics 40 (June): 459-469.

Lee, Soo-Kyyung, Jeffery Sobal and Edward A. Frongillo Jr. "Acculturation and health in Korean Americans." Social Science and Medicine 51: 159-173.

Lee, E.S. 1966. "A theory of migration." Demography 3: 47-57.

Lester, David. 1992. Why people kill themselves (Third edition). Springfield, Ill: Charles C. Thomas Publisher.

Levy, R.I. 1981. "The decline in cardiovascular disease mortality." Annual Review of Public Health 2: 49-70.

Liao, Catherine C., Karin A. Rosenblatt, S.M. Scwartz and N.S. Weiss. 2003. "Endometrial cancer in Asian migrants to the United States and their descendants." Cancer Causes and Control 14: 357-360.

Li, Peter. 2003. Destination Canada: Immigration debates and issues. Don Mills: Oxford University Press.

Lilienfeld, A.M., M.L. Levin, D. Irving and I. Kessler. 1972. Cancer in the United States. Cambridge, MA: Harvard University Press.

Lillard, A. Lee and Linda J. Waite. 1995. "Til death do us part: Marital disruption and mortality." American Journal of Sociology 100 (5): 1131-1156.

Lin, Tsung-Ye. 1986. "Multiculturalism and Canadian psychiatry: Opportunities and challenges." Canadian Journal of Psychiatry 31 (7): 681-690.

Lin, Nan and Walter M. Ensel. 1989. "Life stress and health." American Sociological Review 54 (3): 382-399.

Linke, Wilfred. 1995. "Mortality trends in immigrant populations." Pp. 123-161 in Saskia Voets, Jeannette Schoorl and Bart de Bruijn (Editors), The demographic consequences of international migration. The Hague: NIDI. (Report No. 44).

Litwak, Eugene and Peter Messeri. 1989. "Organizational theory, social supports, and mortality rates." American Sociological Review 54 (1): 49-66.

Livi-Bacci, Massimo. 1984. "Selectivity of marriage and mortality: Notes for future research." Pp. 99-108 in Nathan Keyfitz (Editor), Population biology. International Union for the Scientific Study of Population. Liege, Belgium.

Locke, Ben Z. and Henrietta J. Duvall. 1964. "Migration and mental illness." Eugenics Quarterly 11 (4): 216-221.

Locke, F.B. and H. King. 1980. "Cancer mortality risk among Japanese in the United States." Journal of the National Cancer Institute 65: 1149-1156.

Loftin, Colin and Robert H. Hill. 1974. "Regional subculture and homicide." American Sociological Review 39: 714-724.

London, M. 1986. "Mental illness among immigrant minorities in the United Kingdom." British Journal of Social Psychiatry 149: 265-273.

Lopez, Alan D. 1990. “Changes in tobacco consumption and lung cancer risk: Evidence form national statistics.” Pp. 57-91 in M. Hakama, V. Beral, J. W. Cullen and D. M. Parkin (Editors), Evaluating effectiveness of primary prevention of cancer. IARC Scientific Publication No. 103. Lyon, France: International Agency for Research on Cancer.

Loue, Sana (Editor). 1998. Handbook of immigrant health. New York: Plenum Press.

Lynam Judith. 1985. "Support networks developed by immigrant women." Social Science and Medicine 21 (3): 327-333.

MacDonald, John A. and L. D. MacDonald. 1964. "Chain migration, ethnic neighbourhood formation and social networks." Milbank Memorial Fund Quarterly 42: 82-87.

MacLachlan, Malcom. 1997. Culture and health. Chichester, England: Wiley.

Messner, Steven. 1983. "Regional and racial effects on the urban homicide rate: The subculture of violence revisited." American Journal of Sociology 88: 997-1007.

Messner, Steven. 1989. "Economic discrimination and societal homicide rates: Further evidence on the cost of inequality." American Sociological Review 54: 597-611.

Mirowsky, John and Catherine E. Ross. 1980. "Minority status, ethnic culture and distress: A comparison of blacks, whites, Mexicans and Mexican Americans." American Journal of Sociology 86: 479-495.

McMichael, A.J. and A. Bonett. 1981. "Cancer profiles of British and Southern-European migrants." Medical Journal of Australia 1: 229-232.

McMichael, A.J., M.G. McCall, J.M. Hartshorne and T.L. Woodings. 1980. "Patterns of gastrointestinal cancer in European migrants to Australia: The role of dietary change." International Journal of Cancer 25: 431-437.

Manton, K.G., S.S. Poss and S. Wing. 1979. "The Black/White mortality crossover: Investigation from the perspective of the components of aging." Gerontologist 19: 291-300.

Manton, Kenneth G. and Eric Stallard. 1984. Recent trends in mortality analysis. Orlando, FL: Academic Press.

Manton, Kenneth G. and Eric Stallard. 1988. Chronic disease modeling. London: Charles Griffin and Company Ltd.

Marmot, Michael and S. Leonard Syme. 1976.”Acculturation and coronary heart disease in Japanese-Americans.” American Journal of Epidemiology 104: 225-247.

Marmot, Michael. 1995. “Social differentials in mortality: The Whitehall Study.” Pp.223-242 in Aland D. Lopez, Graziella Caselli and Tapani Valkonen (Editors), Adult

mortality in developed countries: From description to explanation. Oxford: Clarendon Press.

Marmot, Michael G., A.M. Adelstein and L. Bulusu. 1983. "Immigrant mortality in England and Wales, 1970-78." Population Trends 33: 14-17.

Marmot, Michael G., Adelstein, A.M. and Bulusu, L. 1984a. Immigrant mortality in England and Wales, 1970-78. Cause of death by country of birth. Studies on Medical and Population Subjects No. 47. London: Her Majesty's Stationery Office.

Marmot, Michael G., A.M. Adelstein and L. Bulusu. 1984b. "Lessons from the study of immigrant mortality." Lancet 1: 1455-1457.

Marmot, M.G. 1989. "Socioeconomic determinants of CHD mortality." International Journal of Epidemiology 18 (3) (Supplement No. 1): 196-202.

Marmot, M.G., A.M. Adelstein and L. Bulusu. 1983. "Immigrant mortality in England and Wales, 1970-78." Population Trends 33: 14-17.

Martinez, Ramiro Jr. and Matthew T. Lee. 2000. “Comparing the context of immigrant homicides in Miami: Haitians, Jamaicans and Mariels.” International Migration Review 34 (3): 794-812.

Masi, Ralph, Lynette Mensah and Keith A. McLeod. 1995. “Introduction.” Pp. 3-10 in Ralph Masi, Lynette Mensah and K. A. McLeod (Editors), Health and cultures, Volume 1: Policies, professional practice and education. Oakville, Ontario: Mosaic Press.

Masi, Ralph. 1995. “Multicultural health: Principles and policies.” Pp. 11-23 in Ralph Masi, Lynette Mensah and K. A. McLeod (Editors), Health and cultures. Volume 1: Policies, professional practice and education. Oakville, Ontario: Mosaic Press.

Mayer, Jonathan D. 1980. "Migrant studies and medical geography: Conceptual problems and methodological issues." Pp. 136-154 in M.S. Meade (Editor), Conceptual and methodological issues in medical geography. Chapel Hill, N.C.: Department of Geography, University of North Carolina at Chapel Hill.

Moen, Phyllis, Donna Dempster-McClain, and Robin M. Williams Jr. 1989. "Social integration and longevity." American Sociological Review 54 (4): 635-647.

Moore, Lorna G., Peter W. Van Arsdale, HoAnn E. Glittenberg, and Robert A. Aldrich. 1987. The biocultural basis of health. Prospect Heights, Ill.: Wavelength.

Mortensen, Preben Bo. 1999. “Editorial: Can suicide research lead to suicide prevention?” Acta Psychiatrica Scandinavica 99: 397-398.

Muir, C.S. and A.J. Sasco. 1990. "Prospects for cancer control in the 1990s." Annual Review of Public Health 11: 143-163.

Nair, Cyril, Mukund Nargundkar, H. Johansen and J. Strachan. 1990. "Canadian cardiovascular disease mortality: First generation immigrants versus Canadian born." Health Reports 2 (3): 203-228.

Nagnur, D. 1986. Longevity and historical life tables, 1921-1981 (Abridged): Canada and the Provinces. Ottawa: Statistics Canada.

Nam, C.B., N.L. Wheatherby and K.A. Ockay. 1978. "Causes of death which contribute to the mortality crossover effect." Social Biology 25 (4): 306-314.

Namboodiri, Krishnan. 1991. Demographic analysis: A stochastic approach. San Diego, CA: Academic Press.

Namboodiri, Krishnan and C. M. Suchindran. 1987. Life table techniques and their applications. San Diego, CA: Academic Press.

Nasca, P.C., P. Greenwald, W.S. Burnett, S. Chorost and W. Schmidt. 1981. "Cancer among the foreign born in New York State." Cancer 48: 2323-2328.

Nathanson, Constance A. 1984. "Sex differences in mortality." Annual Review of Sociology 10:191-213.

National Research Council. 2002. Forced migration and mortality. Washington, DC: National Academy Press.

Neeleman, J., D. Halpern, D. Leon and G. Lewis. 1997. “Tolerance of suicide, religion and suicide rates: an ecological and individual study in 19 Western countries.” Psychological Medicine 27: 1165-1171.

Nettler, Gwynn. 1982. Killing one another. Cincinnati, Ohio: Anderson Publishing Co.

Neutel, C. Ineke, Anne Quinn and Anna Brancker. 1989. "Brain tumour mortality in immigrants." International Journal of Epidemiology 18 (1): 60-66.

Noh, Samuel, and William R. Avison. 1996. “Asian immigrants and the stress process: A study of Koreans in Canada.” Journal of Health and Social Behavior 37: 192-206.

Norusis, Marija J. 1993. SPSS. Advanced statistics. Release 6.0. Chicago: SPSS Inc.

O'Brien, Robert M. 1987. "The interracial nature of violent crimes: A reexamination." American Journal of Sociology 92 (4): 817-835.

Odegard, O. 1932. "Emigration and insanity: A study of mental disease among the Norwegian-Born population of Minnesota." Acta Psychiatrica Scandinavica 4 (Supplement).

Ohlberg, A. and J. Lonnqvist. 1998. "Suicides hidden among undetermined deaths." Acta Psychiatrica Scandinavica 98: 214-218.

Olshansky, S.J. and A.B. Ault. 1986. "The fourth stage of the epidemiologic transition: The age of delayed degenerative diseases." Milbank Quarterly 64 (3): 355-391.

Omran, A.R. 1971. "The epidemiological transition: A theory of the epidemiology of population change." Milbank Fund Quarterly 49: 509-538.

Ostenfeld, A.M. 1967. "The interaction of biological and social variables in cardiovascular disease." In L. Syme and L.G. Reader (Editors), Social stress and cardiovascular disease. Milbank Memorial Fund Quarterly. Bulletin 42 (2), Part 2.

Padilla, Yolanda, Jason D. Borardman, Robert A. Hummer and Marilyn Espitia. 2002. "Is the Mexican American 'Epidemiologic paradox' advantage at birth maintained through early childhood?" Social Forces 80 (3): 1101-1123.

Palloni, Alberto and Elizabeth Arias. 2003. “A re-examination of the Hispanic mortality paradox.” Paper presented at the annual meetings of the Population Association of America. Minneapolis, MI: May 1-3, 2003.

Parkin, D. M. 1992. “Studies of cancer in migrant populations: Methods and interpretations.” Review de Epidemiologie Sante Publique 40:410-424.

Parkin, D. M. and M. P. Coleman. 1990. “Changes in diet and changes in Cancer risk: Observational studies.” Pp. 93-111 in M. Hakama, V. Beral, J. W. Cullen and D. M.

Parkin (Editors), Evaluating effectiveness of primary prevention of cancer. IARC Scientific Publication No. 103. Lyon, France: International Agency for Research on Cancer.

Pearlin Leonard I. 1989. "The sociological study of stress." Journal of Health and Social Behavior 30 (3): 241-256.

Pescosolido, Bernice A. and Sharon Georgianna. 1989. "Durkheim, suicide and religion." American Sociological Review 54 (1): 33-48.

Peres, Carlos. 2002. "Health status and health behaviours among immigrants." Health Reports. Supplement to Volume 13: 89-100.

Petersen, William. 1978. "International migration." Annual Review of Sociology 4: 533-575.

Pollard, A.H. 1979. The Interaction between morbidity and mortality. Sydney: Institute of Actuaries of Australia.

Porter, John. 1965. The vertical mosaic. Toronto: University of Toronto Press.

Powles, John W. 1990. "The best of both worlds: Attempting to explain the persisting low mortality of Greek migrants to Australia." Pp. 584-594 in J. Caldwell et al., (Editors), What we know about health transition. Health Transition Series No. 2 (Vol. 2), Canberra, Australia.

Preston, S.H. 1977. "Mortality trends." Annual Review of Sociology 3: 163-178.

Rafferty, James, David R. Jones and M. Rosato. 1990. "The mortality of first and second generation Irish immigrants in the U.K." Social Science and Medicine 31 (5): 577-584.

Rahe, R.H. 1979. "Life change events and mental illness: An overview." Journal of Human Stress 5(3):2-10.

Rankin, James G. and Mary Jane Ashley. 1986. “Alcohol related health problems and their prevention.” Pp. 1039-1074 in John M. Last (Editor), Public health and preventive medicine. Norwalk, CT: Appleton-Century-Crofts.

Ravenholt, R.T. 1984. "Addiction mortality in the United States, 1980: Tobacco, alcohol, and other substances." Population and Development Review 10 (4): 697-724.

Rebekah, Chu, Craig Rivera and Colin Loftin. 2000. “Herding and homicide: an examination of the Nisbett-Reaves hypothesis.” Social Forces 78 (3): 971-987.

Reed, D., D. McGee, J. Cohen, K. Yano, S.L. Syme and M. Feinleib. 1982. "Acculturation and coronary heart disease among Japanese men in Hawaii." American Journal of Epidemiology 115: 894-905.

Reitz, Jeffrey G. 1980. The survival of ethnic groups. McGraw-Hill.

Rennert, Gad. 1994. “Implications of Russian immigration on mortality patterns in Israel.” International Journal of Epidemiology 23 (4): 751-756.

Richmond, A.H. 1967. Post war immigrants in Canada. Toronto: University of Toronto Press.

Richmond, A.H. and W.E. Kalbach. 1980. Factors in the adjustment of immigrants and their descendants. Ottawa: Statistics Canada.

Ritchey, N.P. 1976. "Explanation of migration." Annual Review of Sociology 2: 363-404.

Riley, James C. 2001. Rising life expectancy: A global history. Cambridge: Cambridge University Press.

Rogers, Richard G. 1990. "Living and dying in the USA: Sociodemographic determinants of death." Population Program Working Paper, No. WP-90-8, September. University of Colorado Institute of Behavioural Science, Boulder, Colorado.

Rosengren, Annika, Hans Wedel and Lars Wilhelmsen. 1989. "Marital status and mortality in middle-aged Swedish men." American Journal of Epidemiology 129 (1): 54-64.

Rosenwaike, Ira and Katherine Hempstead. 1990. “Differential mortality by ethnicity and nativity: Foreign-and native-born Irish, Italians, and Jews in New York City, 1979-1981.” Social Biology 37 (1-2): 11-25.

Rosenwaike, Ira. 1984. "Mortality among the Puerto Rican-born in New York City." American Journal of Epidemiology 119: 177-185.

Rosenwaike, Ira. 1987. "Mortality differentials among persons born in Cuba, Mexico, and Puerto Rico residing in the United States, 1979-81." American Journal of Public Health 77(5): 603-606.

Rosenwaike, Ira (Editor). 1991. Mortality of Hispanic populations: Mexicans, Puerto Ricans and Cubans in the United States and in their Home Countries. New York: Greenwood Press.

Rosenwaike, Ira. and D. Shai. 1986. "Trends in cancer mortality among Puerto Rican-born migrants to New York City." International Journal of Epidemiology 15(1):30-35.

Rosenwaike, Ira and Donna Shai. 1989. "Changes in mortality among Cubans in the United States following an episode of unscreened migration." International Journal of Epidemiology 18 (1): 152-157.

Rothenberg, Richard B. and Jeffrey P. Kaplan. 1990. "Chronic diseases in the 1990s." Annual Review of Public Health 11: 267-296.

Runeson, B. S. 1998. “History of suicidal behaviour in the families of young suicides.” Acta Psychiatrica Scandinavica 98 (6): 497-501.

Sainsbury, P. and B. Barraclough. 1968. "Differences between suicide rates." Nature 220: 1252.

Sampson, Robert J. and W. Byron Groves. 1989. "Community structure and crime: Testing social disorganization theory." American Journal of Sociology 94: 774-802.

Schoen, Robert. 1970. “The geometric mean for the age-specific death rates as a summary index of mortality.” Demography 7 (3): 317-324.

Schoenbach, Victor J., et al. 1986. "Social ties and mortality in Evans County, Georgia." American Journal of Epidemiology 123: 577-591.

Selye, Hans. 1956. The stress of life. New York: McGraw-Hill.

Shai, Donna and Ira Rosenwaike. 1988. "Violent deaths among Mexican, Puerto Rican and Cuban-Born migrants in the United States." Social Science and Medicine 26 (2): 269-276.

Shaw, R.P. 1975. Migration theory and fact. Philadelphia: Regional Science Research.

Shaw, Clifford and Henry McKay. 1942. Juvenile delinquency and urban areas. Chicago: University of Chicago Press.

Sheps, Mindel C. 1961. "Marriage and mortality." American Journal of Public Health 51(4): 547-555.

Shuval, Judith T. 1982. "Migration and stress." Pp. 677-691 in L. Goldberger and S. Breznitz (Editors), Handbook of stress: Theoretical and clinical aspects." New York: The Free Press.

Shuval, Judith T. 1993. "Migration and Stress." Pp. 641-657 in Leo Goldberger and Shlomo Breznitz (Editors), Handbook of stress: Theoretical and clinical aspects (Second edition). New York: The Free Press.

Silove, Derrick, Zachary Steel and Charles Watters. 2000. "Policies of deterrence and the mental health of asylum seekers." Journal of the American Medical Association 284 (5): 604-611.

Silverman, Robert A. and Leslie W. Kennedy. 1987. "Relational distance and homicide: The role of the stranger." The Journal of Criminal Law and Criminology 78 (2): 272-308.

Simon, Julian L. 1968. "The effect of income on the suicide rate: The paradox resolved." American Journal of Sociology 74: 302-303.

Simmons, Alan B. 1990. "New wave immigrants: Origins and characteristics." Pp. 141-159, in Shiva S. Halli, Frank Trovato and Leo Driedger (Editors), Ethnic demography: Canadian immigrant, racial and cultural minorities. Ottawa: Carleton University Press.

Simpson, G.E. and J.M. Yinger. 1985. Racial and cultural minorities: An analysis of prejudice and discrimination. New York: Harper and Rowe.

Singh, Gopal K. and Stella M. Yu. 1996. “Adverse pregnancy outcomes: Differences between US- and foreign-born women in major US racial and ethnic group.” American Journal of Public Health 86 (6): 837-843.

Singh, Gopal K. and Mohammad Siahpush. 2001. “All-cause and cause-specific mortality of immigrants and native born in the United States.” American Journal of Public Health 91: 392-399.

Smith, Ken R. and Cathleen D. Zick. 1986. "The Incidence of poverty among the recently widowed: Mediating factors in the life course." Journal of Marriage and the Family 48: 619-630.

Smith, Ken R. and Cathleen D. Zick. 1994. "Shared lives, dependent demise? Survival analysis of husbands and wives." Demography 31 (1): 81-93.

Somers, Anne Ramsey and Victoria D. Weisfeld. 1986. “Individual behavior and health.” Pp. 983-998 in John M. Last (Editor), Public health and preventive medicine. Norwalk, CT: Appleton-Century-Crofts.

Stack, Steven. 1985. "The effects of domestic/religious individualism on suicide, 1954-1978." Journal of Marriage and the Family 49: 205-206.

Stack, Steven. 1990. "New micro-level data on the impact of divorce on suicide, 1959-1980: A test of two theories." Journal of Marriage and the Family 52: 119-127.

Stack, Steven. 1982. "Suicide: A decade review of the sociological literature." Deviant Behavior 4: 41-66.

Stack, Steven. 2000a. “Suicide: A 15-year review of the sociological literature. Part I: cultural and economic factors.” Suicide and Life-Threatening Behavior 30 (2): 145-162.

Stack, Steven. 2000b. “Suicide: A 15-year review of the sociological literature. Part II: modernization and social integration perspectives.” Suicide and Life-Threatening Behavior 30 (2): 163-176.

Statistics Canada. N.D. Customized mortality table for 1990-1992. Ottawa: Vital Disease and Disease Registry Division, Statistics Canada.

Statistics Canada. ND. Customized population table for 1991. Ottawa: Demography Division, Statistics Canada.

Statistics Canada. 1974. Life tables, Canada and provinces, 1970-1972. Ottawa: Ontario (Catalogue No. 4-2302-591).

Statistics Canada. 1980, 1981. Mortality atlases of Canada: Volumes I and II. General mortality and cancer mortality. Ottawa, Statistics Canada: Health and Welfare Canada.

Statistics Canada. 1984. Life tables, Canada and provinces, 1980-1982. Ottawa: Ontario (Catalogue No. 84-532).

Statistics Canada. 1989. Life tables, Canada and provinces, 1985-1987. Ottawa: Ontario (Formerly Catalogue No. 84-352).

Stenhause, N.S. and M.G. McCall. 1970. "Differential mortality from cardiovascular disease in migrants from England and Wales, Scotland and Italy, and Native-born Australians." Journal of Chronic Diseases 23: 423-431.

Sundquist, Jan and Sven-Erik Johansson. 1997. “Long-term illness among indigenous and foreign-born people in Sweden.” Social Science and Medicine 44 (2): 189-198.

Swederlow, A.J. 1991. “Mortality and cancer incidence in Vietnamese refugees in England and Wales: A follow-up study.” International Journal of Epidemiology 20 (1): 13-19.

Syme, S. L. and L. F. Berkman. 1976. "Social class, susceptibility and sickness." American Journal of Epidemiology 104 (1): 1-8.

Teachman, Jay D. 1977. "The relationship between Schoen's delta and a log-linear measure." Demography 14 (2): 239-241.

Thomas, David B. 1986. “Cancer.” Pp. 1133-1158 in John M. Last (Editor), Public health and preventive medicine. Norwalk, CT: Appleton-Century-Crofts.

Thom, Thomas J. 1989. "International mortality from heart disease: Rates and trends." International Journal of Epidemiology 18 (3) (Supplement No. 1): 20-28.

Trovato, Frank. 2000a. “Canadian Indian mortality in the 1980s.” Social Biology 47 (3-4): 135-145.

Trovato, Frank. 2000b. “A comparative analysis of Aboriginal mortality in Canada, New Zealand and United States.” Journal of Biosocial Science 33: 67-86.

Trovato, F. 1986a. Mortality trends and differentials among immigrants in Canada. Health and Welfare Canada, National Review of Demography and its Implications for Economic and Social Policy, Ottawa, Ontario, Canada.

Trovato, F. 1986b. "Suicide and ethnic factors in Canada." The International Journal of Social Psychiatry 32 (3): 55-64.

Trovato, Frank. 1986c. "The Relationship between marital dissolution and suicide: The Canadian case." Journal of Marriage and the Family 48 (2): 341-348.

Trovato, Frank. 1987. "A Longitudinal analysis of divorce and suicide in Canada." Journal of Marriage and the Family 49: 193-203.

Trovato, Frank. 1988a. "The interurban mobility of the foreign-born in Canada: 1976-1981." International Migration Review 22 (3): 59-86.

Trovato, Frank. 1988b. "Mortality differentials in Canada, 1951-1971: French, British and Indians." Culture, Medicine and Psychiatry 12: 459-477.

Trovato, F. 1990. "Immigrant mortality trends and differentials." Pp. 91-109 in S.S. Halli, F. Trovato and L. Driedger (Editors), Ethnic demography: Canadian immigrant, racial and cultural variations. Ottawa: Carleton University Press.

Trovato, Frank. 1992a. "Mortality differentials in Canada by marital status." Canadian Studies in Population 19 (2): 111-143.

Trovato, Frank. 1992b. "Violent and accidental mortality among four immigrant groups in Canada, 1970-72." Social Biology 39 (1-2): 82-101.

Trovato, Frank. 1995. “Mortality differences by nativity during 1985-87.” Canadian Studies in Population 20 (2): 207-223.

Trovato, Frank and Clifford C. Clogg. 1992. "General and cause-specific adult mortality among immigrants in Canada, 1971 and 1981." Canadian Studies in Population 19 (1): 47-80.

Trovato, F. and G.K. Jarvis. 1986. "Immigrant suicide in Canada, 1971 and 1981." Social Forces 65 (2): 433-457.

Trovato, Frank and Gloria Lauris. 1989. "Marital status and mortality in Canada: 1951-1981." Journal of Marriage and the Family 51: 907-922.

Trovato, Frank. 1997. “Immigrant suicide in Canada.” In Antoon Leenars et al. (Editors), Suicide in Canada. Toronto: University of Toronto Press.

Trovato, Frank, Ravi P. Verma and S. Dai. 1993. Mortality patterns and differentials of Visible Minorities in Canada, 1980-82 and 1985-87, and recommendations for mortality projections to the year 2016.” Ottawa: (Visisble Minorities Projection Project) Demography Division, Statistics Canada.

Trovato, F. 1985. "Mortality differences among Canada's indigenous and foreign-born populations, 1951-1971." Canadian Studies in Population 12 (1): 49-80.

Trovato, F. 1986b. "Suicide and ethnic factors in Canada." The International Journal of Social Psychiatry 32 (3): 55-64.

Trovato, Frank. 1986c. "The relationship between marital dissolution and suicide: The Canadian case." Journal of Marriage and the Family 48 (2): 341-348.

Trovato, Frank. 1987. "A longitudinal analysis of divorce and suicide in Canada." Journal of Marriage and the Family 49: 193-203.

Tumin, Melvin M. 1967. Social stratification: The forms and functions of social inequality. Englewood Cliffs: Prentice Hall.

Uitenbroek, G. Daan an dArnoud P. Vehoeff. 2002. “Life expectancy and mortality differences between migrant groups living in Amsterdam, the Netherlands.” Social Science and Medicine 54: 1379-1388.

Ulman, R. and J.D. Abernethy. 1975. "Blood pressure and length of stay in Australia of Italian immigrants in the Australian national blood pressure study." International Journal of Epidemiology 4: 213-215.

Umberson, Debra. 1987. "Family status and health behaviors: Social control as a dimension of social integration." Journal of Health and Social Behavior 28: 306-319.

United Nations Demographic yearbook. (Various years). New York.

Unnithan, Prabha N., Lin Huff-Corzine, Jay Corzine, and H. P. Whitt. 1994. The currents of lethal violence: An integrated model of suicide and homicide. Albany, NY: State University of New York Press.

Valkonen, Tapani, Anna Brancker and M. Reijo. 1992. "Mortality differences between three populations--Residents of Scandinavia, Scandinavian immigrants to Canada and Canadian-born residents of Canada, 1979-1985." Health Reports 4 (2): 137-159.

Vallin, Jacques and Alfred Nizard. 1977. "La mortalite par etat matrimonial: Marriage selection ou marriage protection?" Population 32 (Special issue, September): 95-119.

Vallin, J. 1985. "La Mortalite des immigres en Engleterre et Galles." Population 1: 156-161.

Van Tran Than. 1987. "Ethnic community supports and psychological well-being of Vietnamese refugees." International Migration Review 21 (3): 833-844.

Vega, William A., Bohodan Kolody and Juan R. Valle. 1987. "Migration and mental health: An empirical test of depression risk factors among immigrant Mexican women." International Migration Review 21 (3): 512-530.

Verbrugge, Lois M. 1979. "Marital status and health." Journal of Marriage and the Family 41 (2): 267-285.

Verbrugge, Lois M. 1981. "The social roles of the sexes and their relative health and mortality." pp. 221-245 in Alan D. Lopez and Lado T. Ruzicka (Editors), Sex

differentials in mortality: Trends, determinants, and consequences. Canberra, Australia: Australian National University, Department of Demography.

von Poppel, Frans and Lincoln H. Day. 1996. “A test of Durkheim’s theory of suicide.” American Sociological Review 61 (3): 500-507.

Ward, David. 1971. Cities and immigrants: geography of change in nineteenth-century America. New York: Oxford University Press.

Waitoft, Gunilla Reingback, Anders Gullbert, A. Hhern and M. Rosen. 1999. "Mortality statistics in immigrant research: Method for adjusting underestimation of mortality." International Journal of Epidemiology 28: 756-763.

Waldron, Ingrid. 1976. "Why do women live longer than men?" Social Science and Medicine 10: 349-362.

Walsh, Anthony. 1980. “The prophylactic of religion on blood pressure levels among a sample of migrants.” Social Science and Medicine 14B: 59-64.

Walter, Leszek. 1995. Newcomer suicide prevention project: Immigration, culture, and suicide. Edmonton, Alberta: Mennonite Centre for Newcomers.

Wang, Peter P., Renee Elsbett-Koeppen, G-yi Geng and E. M. Badley. 2000. “Arthritis prevalence and place of birth: Findings form the 1994 Canadian national population survey.” American Journal of Epidemiology 152 (5): 442-445.

Wasserman, D. and A. Varnik. 1998. “Reliability of statistics on violent death and suicide in the former USSR, 1970-1990.” Acta Psychiatrica Scandinavica 98 (Supplement 394): 34-41.

Watters, Charles. 2001. “Emerging paradigms in the mental health care of refugees.” Social Science and Medicine 52: 1709-1718.

Weeks, John R. and Ruben G. Rumbaut. 1991. “Infant mortality among ethnic immigrant groups.” Social Science and Medicine 33 (3): 327-334.

Whitlock, F.A. 1971. "Migration and suicide." Medical Journal of Australia 2: 840-848.

Wilkins, Russell, Gregory J. Sherman and P.A.F. Best. 1991. “Birth outcomes and infant mortality by income in urban Canada, 1986.” Health Reports 3 (1): 7-31.

Whyte, Karen, Monica Arce and Lilian Ortiz. 1995. Strengthening A suicide prevention workshop for the Latin American community. Trainer’s guide. Edmonton: Mennonite Centre for Newcomers.

Wigle, D.T. and Y. Mao. 1980. Mortality by income level in urban Canada. Ottawa: Non-communicable Disease Division, Health Protection Branch, Health and Welfare Canada.

Wilkins, R. 1980. "L'inegalite sociale face a la mortalite a Montreal, 1975-1977." Cahiers Quebecois de Demographie 9 (2): 157-184.

Williams, Kirk R. and J.W. Horn. 1977. "Association of cancer sites with tobacco, alcohol consumption and socioeconomic status of patients: Interview study from the Third National Cancer Survey." Journal of the National Cancer Institute 58: 525-542.

Williams, Kirk R. 1984. "Economic sources of homicide: Reestimating the effects of poverty and inequality." American Sociological Review 49 (2): 283-289.

Williams, Kirk R. and Robert L. Flewelling. 1988. "The social production of criminal homicide: A comparative study of disaggregated rates in American cities." American Sociological Review 53: 421-431.

Wingard, Deborah L. 1984. "The sex differential in morbidity, mortality and lifestyle." Annual Review of Public Health 5: 433-458.

Winkelstein, W. Jr., S. Kantor, E.W. Davis, C.S. Maneri and W.E. Mosher. 1967. "The relationship of air pollution and economic status to mortality and selected respiratory system mortality in men." Archives of Environmental Health 14: 162-171.

Wolfgang, Marvin E. and Franco Ferracuti. 1967. The subculture of violence: Towards an integrated theory in Criminology. London: Tavistock.

Wolfson, Michael, Geoff Rowe, Jane F. Gentleman, and Monica Tomiak. 1989. "Earnings and death: effects over a quarter century." Paper presented at the meeting of the Gerontological Society of America, Minneapolis.

Wood, D. and G. Hugo. 1983. Recent mortality trends in Australia. (1981 Census Project, Paper 2). The Flinders University of South Australia: National Institute of Labour Studies Incorporated. Working Paper Series No. 55.

World Health Organization. (various years). World health statistics annual: Vital statistics and causes of death. Geneva.

World Health Organization. 1977. International classification of diseases: Manual of the international classification of diseases, injuries, and causes of death (9th revision). Geneva.

World Health Organization. 1976. Computerized files of deaths and populations for countries, by age, sex and ICD causes of death. Geneva.

Wu, Zheng and Violet Kaspar. 2000. “The mental health of Asian immigrants in Canada.” Pp. 97-111 in Robert E. Bedeski and John A. Schofield (Editors), Canadian western geographic series: Prospects for development in the Asia-Pacific area. Volume 37. Victoria, British Columbia: Western Geographic Press.

Yancey, William L., Erik P. Ericksen and R.N. Juliani. 1976. "Emergent ethnicity: A review and reformulation." American Sociological Review 41: 391-403.

Yen, I. H. and S. L. Syme. 1999. “The social environment and health: a discussion of the epidemiologic literature.” Annual Review of Public Health 20: 287-308.

Young, Christabel M. 1986a. Selection and survival: Immigrant mortality in Australia. Canberra :Canberra Publishing.

Young, Christabel M. 1986b. "Differential mortality of birthplace groups in Australia during 1980-82." Journal of the Australian Population Association 3 (2): 144-168.

Young, Christabel M. 1987. "Migration and mortality: The experience of birthplace groups in Australia." International Migration Review 21 (3): 531-554.

Young, Christabel M. 1991. "Changes in the demographic behaviour of migrants in Australia and the transition between generations." Population Studies 45: 67-89.

Young, Christabel M. 1992. "Differential mortality among migrants in Australia: From description to explanation." IUSSP Seminar on premature adult mortality in developed countries. Taormina, Sicily (June 1-15, 1992).

Zick, Cathleen and Ken Z. Smith. 1991. "Marital transitions, poverty and gender differences in mortality." Journal of Marriage and the Family 53: 327-336.

Zsembik, Barbara A. 2003. “Latinos, aging and health.” Paper presented at the annual meetings of the Population Association of America. Minneapolis, MI: May 1-3, 2003.

APPENDIXES

APPENDIX A: COUNTRY OF BIRTH CLASSIFICATION

Province / Country of Birth	Nationality Code
Canadians born in the provinces/territories, plus all known Canadian-Born decedents for whose province/territory of birth was not stated on the death certificate	1 = Canadian Born
United States	2 = USA
West and East Germany	3 = Germany
Republic of Ireland	4= Republic of Ireland
England-Wales, Scotland and Northern Ireland	5 = UK/Scotland/N Ireland
Greece	6= Greece
Italy	7 = Italy
Portugal	8 = Portugal
Hungary	9 = Hungary
Poland	10 = Poland
Former USSR (including Lithuania, Estonia, Latvia)	11 = USSR
Former Czechoslovakia/Czech Republic	12 = Czechoslovakia
Sweden	13 = Sweden
Finland, Norway, Denmark, Iceland	14 = Other Scandinavia
People's Republic of China, Taiwan Province of China	15 = China
Japan	16 = Japan
Afghanistan, Bangladesh, Brunei, Myanmar, Cambodia, Sri Lanka, Cyprus, Hong Kong, India, Indonesia, Iran Iraq, Israel, Jordan, North Korea, South Korea, Laos, Lebanon, Macao, Malaysia, Pakistan, Philippines, Saudi Arabia, Singapore, Vietnam, Syria, Thailand, United Arab Emirates, Turkey	17 = Other Asia
Algeria, Angola, Cameroon, Zaire, Equatorial Guinea, Ethiopia, Djibouti, Gambia, Ghana, Guinea, Ivory Coast, Kenya, Lesotho, Liberia, Madagascar, Mali, Mauritius, Mozambique, Nigeria, Guinea-Bissau, Reunion, Rwanda, Senegal, Seychelles, Somalia, South Africa, Zimbabwe, Sudan, Swaziland, Tunisia, Uganda, Egypt, Tanzania	18 = Africa
Antigua & Barbuda, Argentina, Barbados, Bermuda, Bolivia, Brazil, Belize, British Virgin Islands, Cayman Islands, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Falkland Islands, Grenada, Guadeloupe, Guatemala, Guyana, Haiti, Honduras, Jamaica, Martinique, Mexico, Montserrat, Nicaragua, Paraguay, Peru, Puerto Rico, St. Christopher-Nevis, Anguilla, Saint Lucia, St. Vincent & the Grenadines, Suriname, Trinidad & Tobago, Turks & Caicos Islands, Uruguay, Venezuela, Netherlands Antilles, Panama	19 = South -Central America/Caribbean/Mexico
Albania, Antarctica, American Samoa, Andorra, Austria, Bahamas, Belgium, Bulgaria, Fiji, France, French Polynesia, Gibraltar, Johnston Island, Liechtenstein, Luxembourg, Malta, Midway Islands, Netherlands, New Zealand, Pacific Islands (Trust Territories), Papua New Guinea, Romania, St. Pierre & Miquelon, Spain, Svalbard & Jan Mayen, Switzerland, Tuvalu, United States Virgin Islands, Wallis & Futuna Islands, Yugoslavia, At Sea	20 = All Other Countries of Birth

APPENDIX B: ANALYSIS OF IRISH REPUBLIC IMMIGRANT DEATHS AND POPULATION FIGURES

The population counts for Irish Republic immigrants in the data file used for this analysis appear to be reasonably close to those published by Statistics Canada based on 1991 census estimates. The differences by gender between the census and the data file are shown below.

Population Figures	Males	Female	Total
In Present Data File, 1991	14,193	15,455	29,648
In 1981 Census Tables	8,155	8,600	16,755
In 1991 Census Tables	13,560	14,845	28,405
Difference: (1) – (3)	633	610	1,243

Sources: Statistics Canada. 1982. 1981 Census of Canada: Population. Table 2B: Population Born Outside Canada by Place of Birth and Sex for Canada and the Provinces, Urban Size Groups, Rural Non-Farm and Rural Farm, 1981. Catalogue 92-913, Volume 1-National Series: Ottawa. Statistics Canada. 1992. 1991 Census of Canada: Immigration and Citizenship: The Nation. Table 4, Immigrant Population by Selected Places of Birth, Showing Age Groups for Canada, Provinces and Territories. 1991---20% Sample. Catalogue 93-316: Ottawa.

The census population counts for the Irish Republic foreign born have been relatively small in the 1981 and 1991 censuses. This is not a large immigrant group. There appears to have been a notable increase in the population of this group between 1981 and 1991. The small differences between the data file counts for 1991 used in the present analysis and those reported by the 1991 census suggest the absence of any serious data errors in the population figures as such which were used to compute death rates for this immigrant group. Yet, as we have already determined, the crude death rates and the age-adjusted death rates for both sexes and for the total Irish Republic foreign born are unusually high, given the low mortality conditions in a country like Canada.

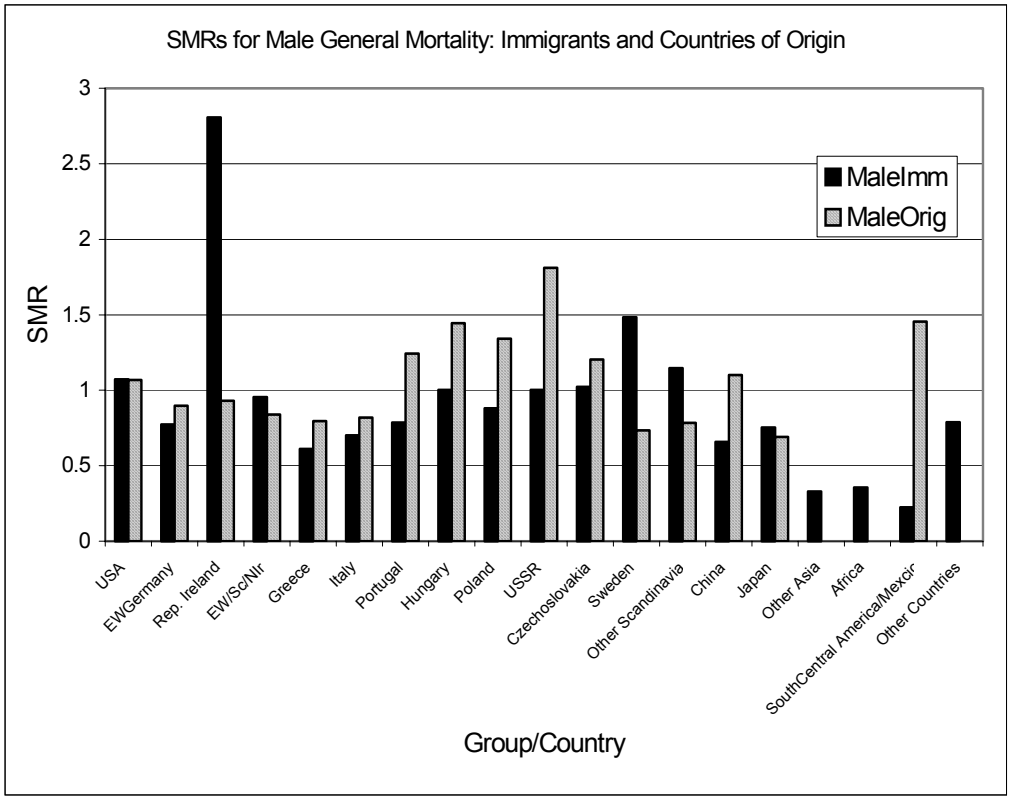
It would seem that if there is some error for this group, it is likely in the death counts (the numerators). What is the excess death count for this group, and where (i.e., to which group) should the excess deaths be allocated? One hypothesis that a large portion of the Irish Republic immigrant deaths actually belong to the category of "England-Wales/Scotland/Northern Ireland" (EWSNI) The supposition is that some of the Irish Republic decedents would be miscoded as immigrants from Northern Ireland. Unfortunately, due to data restrictions, this category could not be disagregated to check for this possibility.

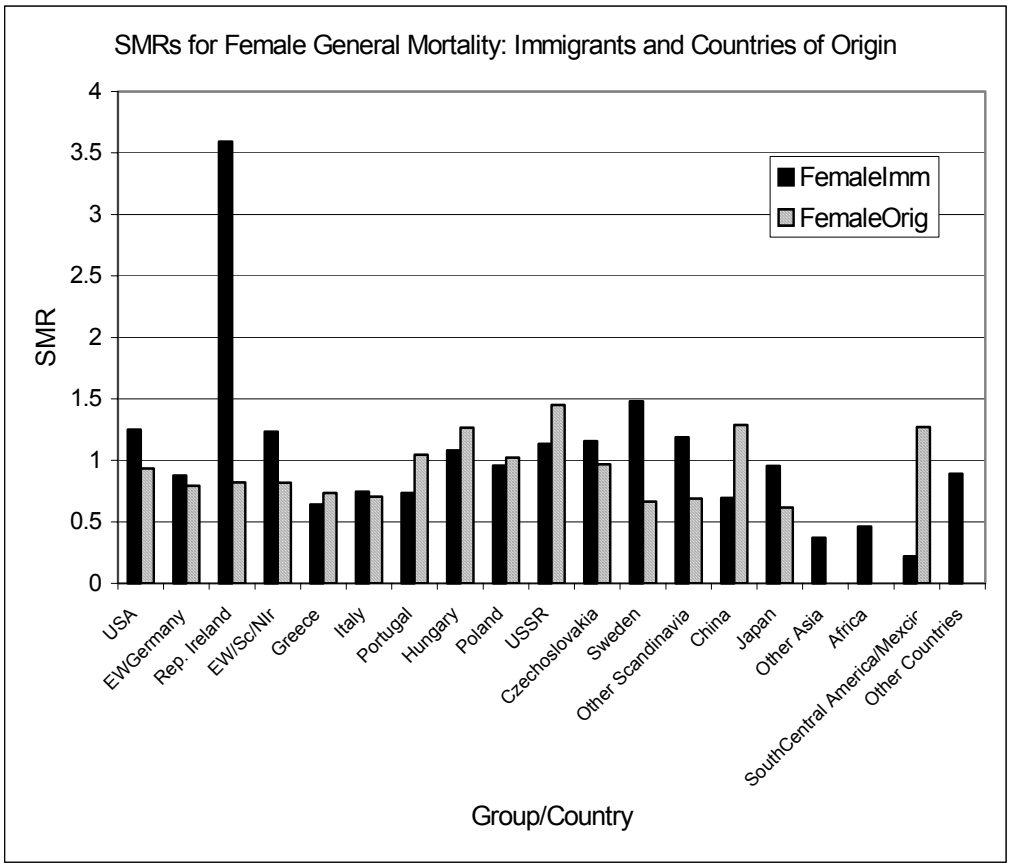
It was decided to execute two tests to check on the problem: First, the Republic of Ireland immigrants were combined with the "England-Wales/Scotland/Northern Ireland" category to see what would happen to the relative risk estimates. This procedure produced unsatisfactory results, in that the new grouping always showed unusually high mortality risks. When the Irish Republic immigrants were included in the analysis as a separate category, the results for the EWSNI consistently showed below average mortality risks. What this suggests is that the Irish Republic migrants have an unusually strong influence on the relative risks. A second option was tried: the Irish Republic deaths were allocated to "Other Countries" residual class of immigrants. But this procedure also produced results similar to the preceding one: when the Irish Republic cases were added to the "Other Countries" the mortality risks of the latter changed from below average to above average. Clearly, neither of these two options is satisfactory. Given its influential effects on results, it seemed reasonable to treat Irish Republic as a separate category.

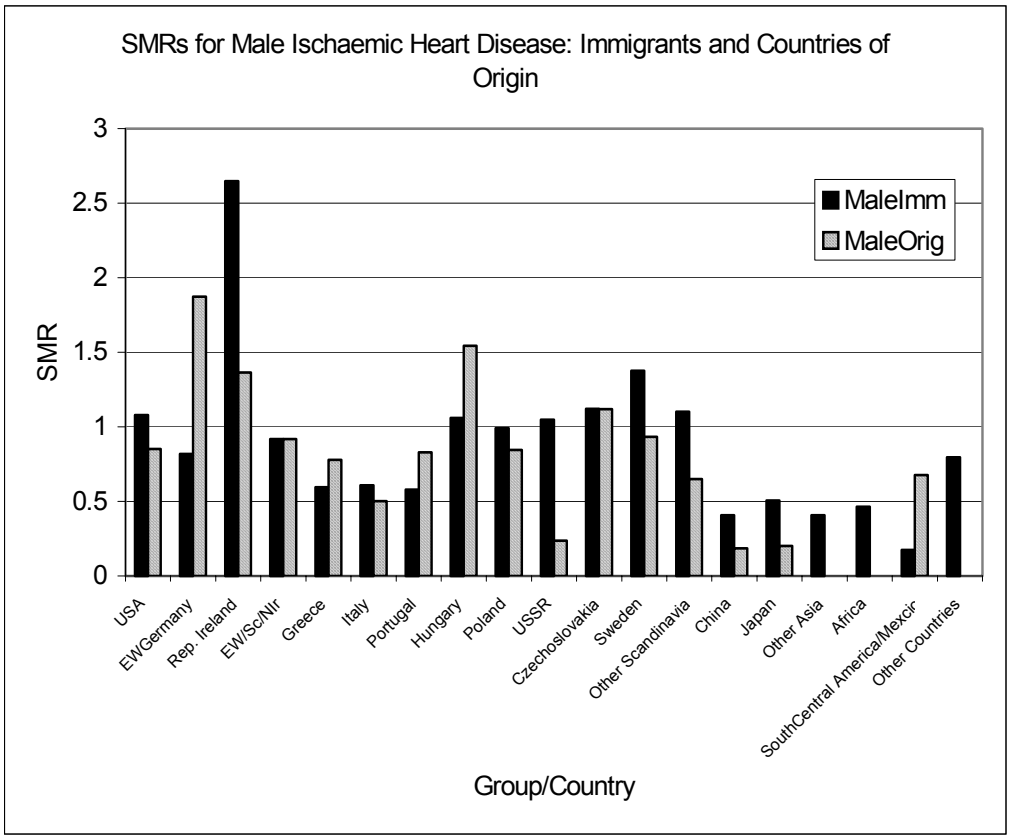
APPENDIX C: INDIRECTLY STANDARDIZED MORTALITY RATIOS (SMRS) FOR IMMIGRANTS AND COUNTRIES OF ORIGIN, BY SEX AND CAUSE OF DEATH; 1991 PERIOD.

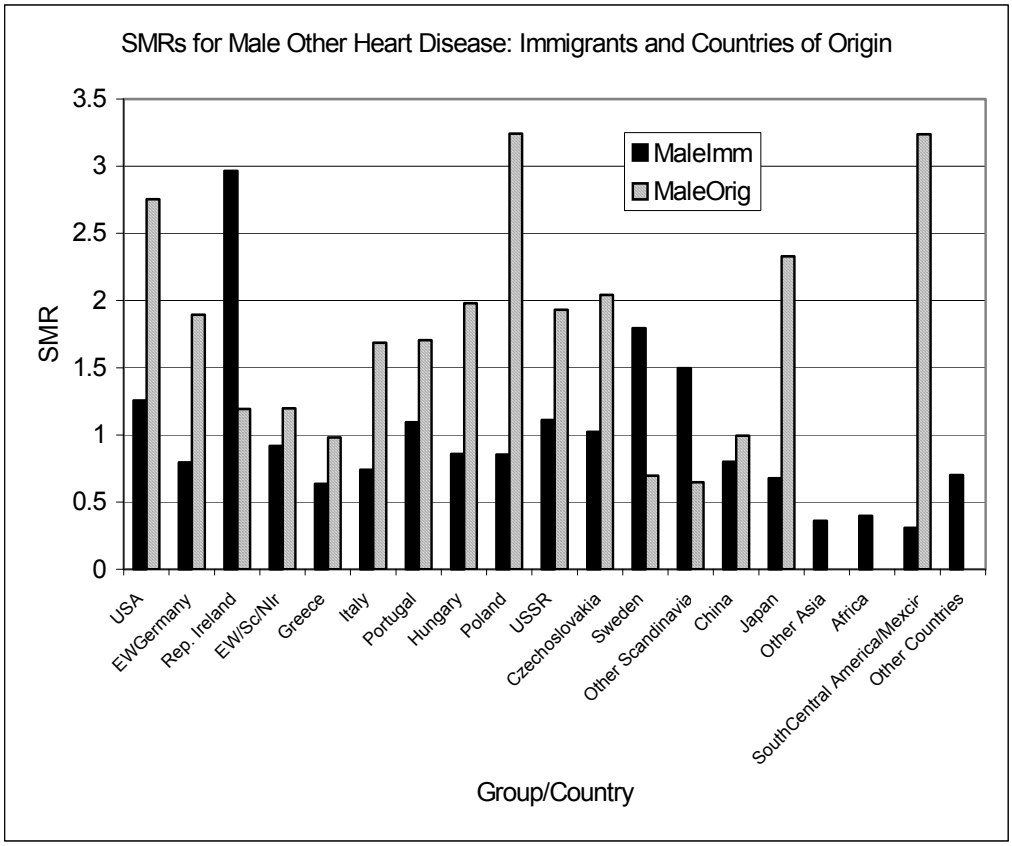
Three of the graphs (TOTALS) are not available electronically.

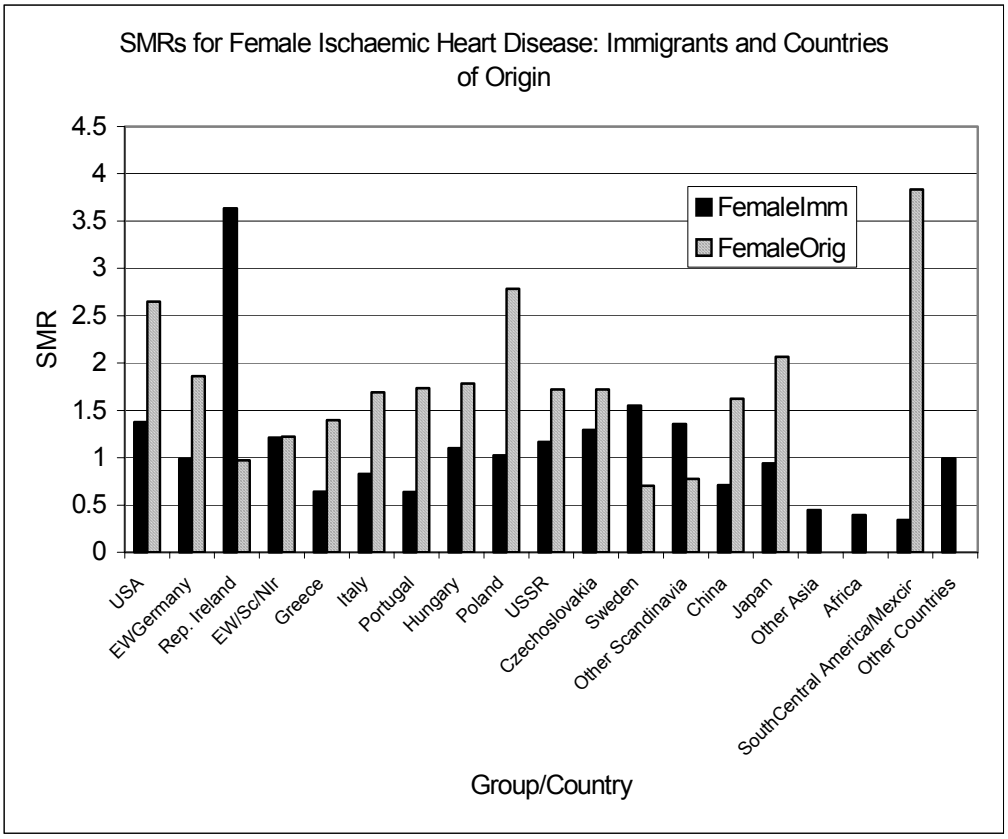
Hard copies are available upon request.

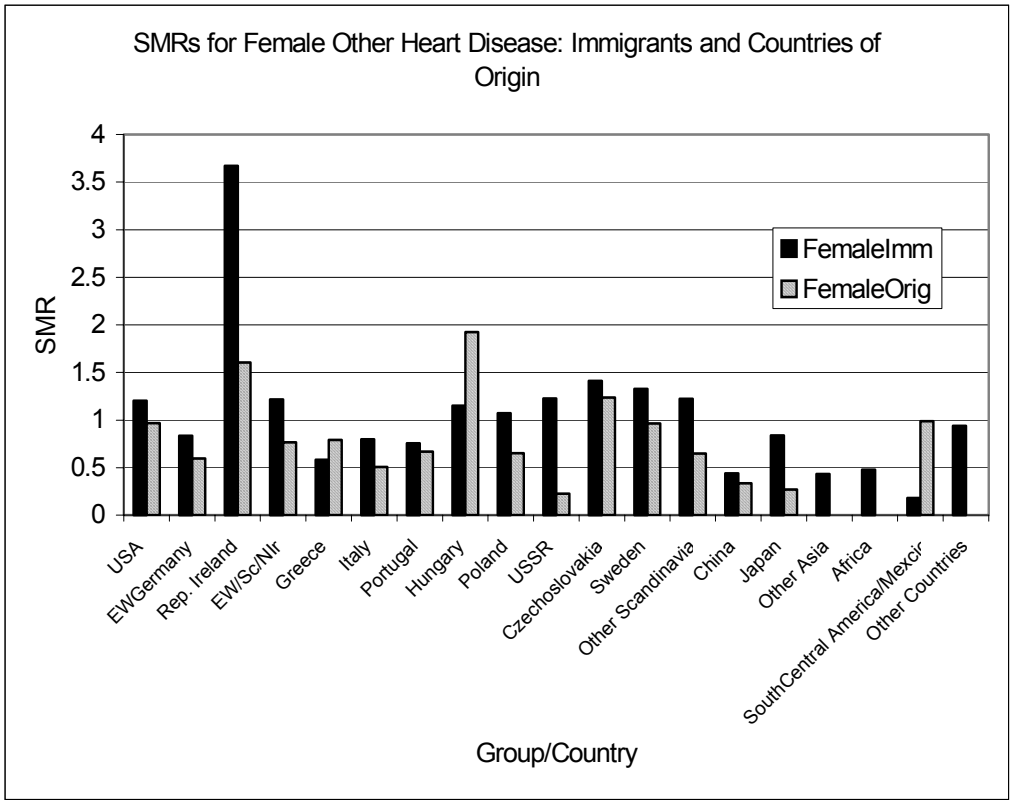

SMRs for Male General Mortality: Immigrants and Countries of Origin
SMR
3
2.5
2
1.5
1
0.5
0
MaleImm
MaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

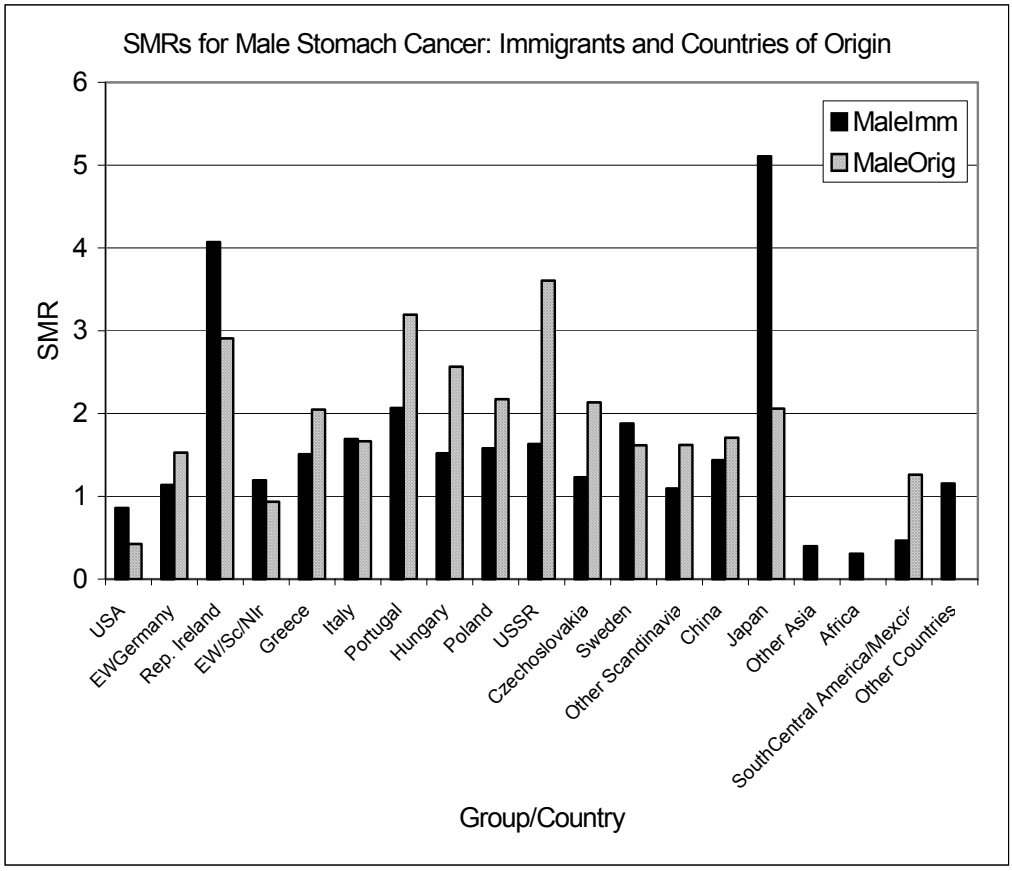

SMRs for Female General Mortality: Immigrants and Countries of Origin
SMR
4
3.5
3
2.5
2
1.5
1
0.5
0
FemaleImm
FemaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

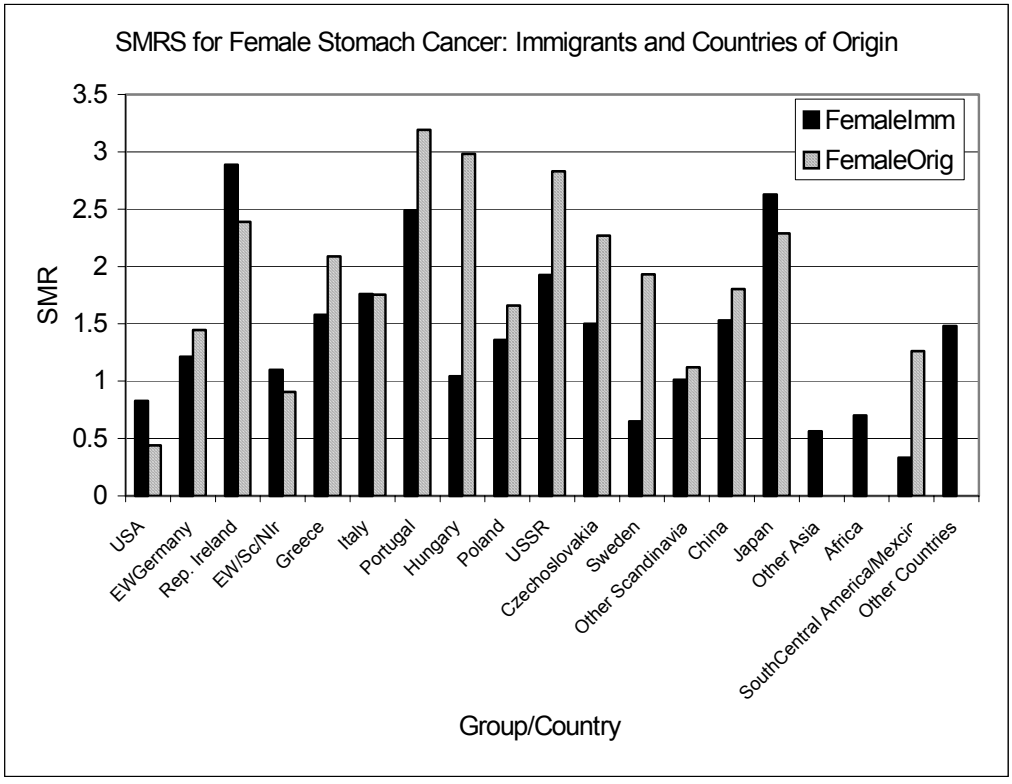

SMRs for Male Ischaemic Heart Disease: Immigrants and Countries of Origin
SMR
3
2.5
2
1.5
1
0.5
0
MaleImm
MaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nir
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

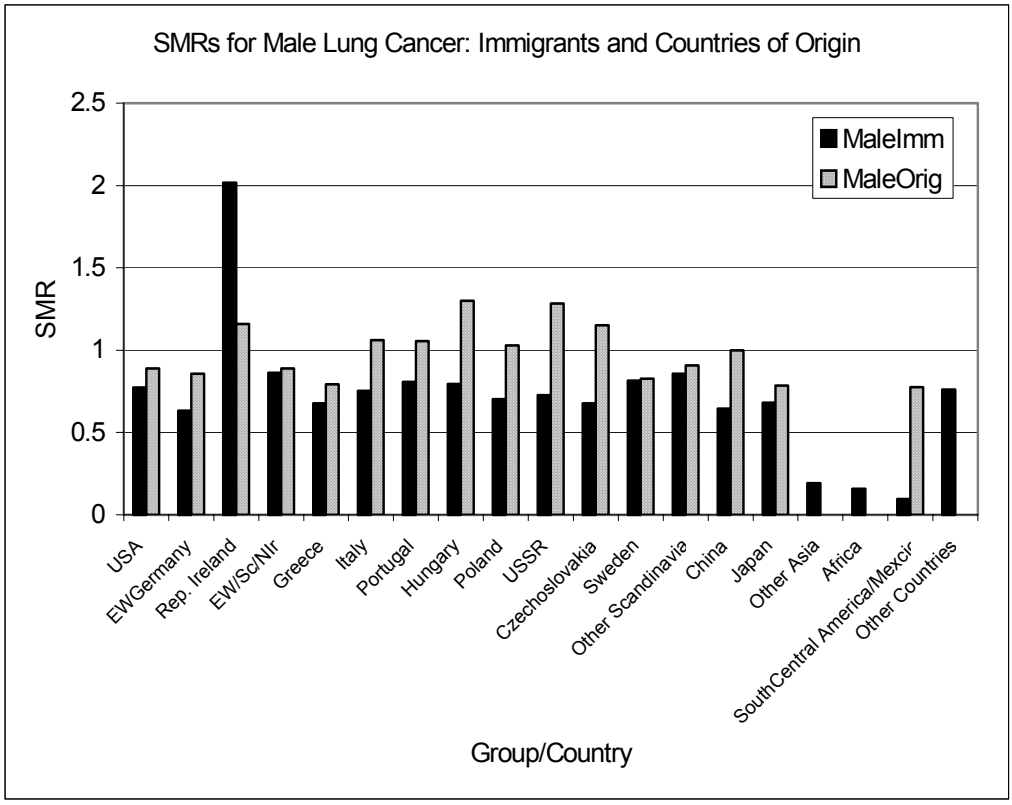

SMRs for Male Other Heart Disease: Immigrants and Countries of Origin
SMR
3.5
3
2.5
2
1.5
1
0.5
0
MaleImm
MaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nir
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

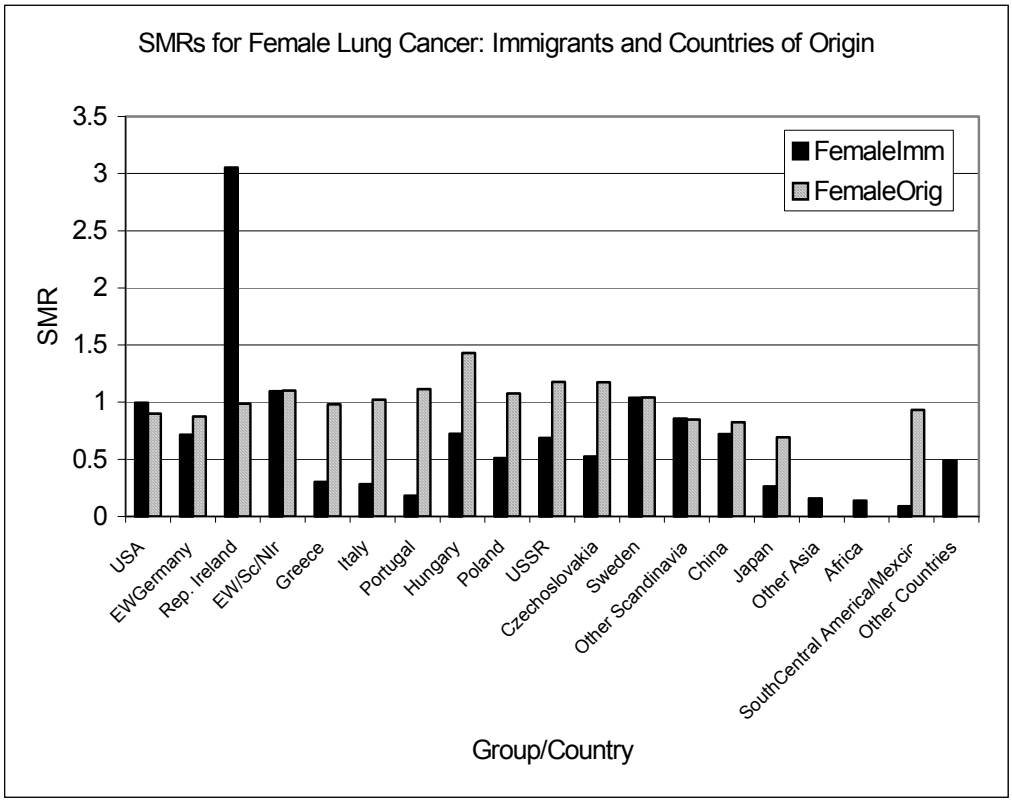

SMRs for Female Ischaemic Heart Disease: Immigrants and Countries of Origin
SMR
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
FemaleImm
FemaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/NIr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

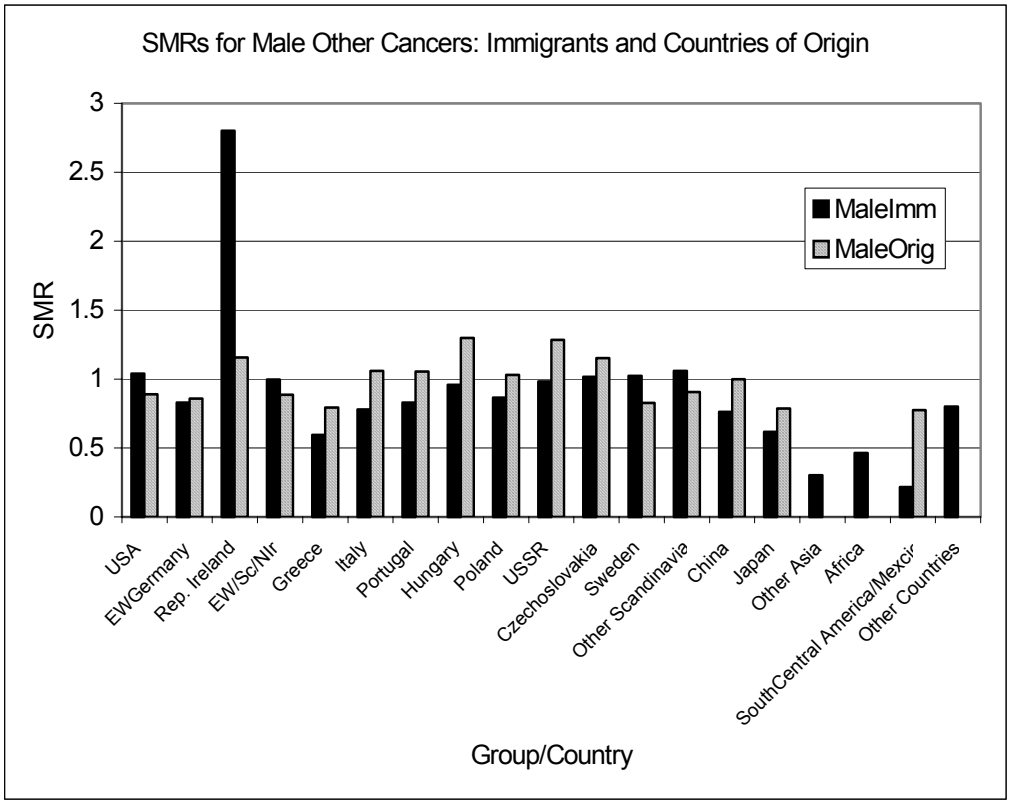

SMRs for Female Other Heart Disease: Immigrants and Countries of Origin
SMR
4
3.5
3
2.5
2
1.5
1
0.5
0
FemaleImm
FemaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/NIr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

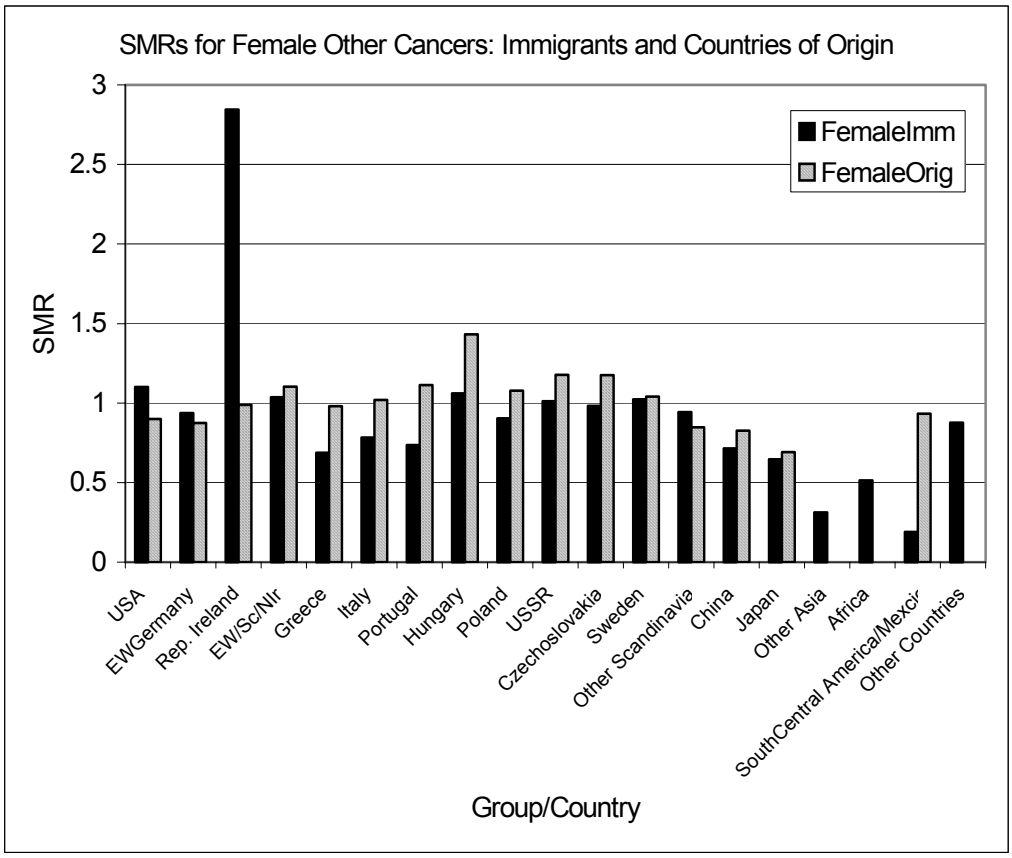

SMRs for Male Stomach Cancer: Immigrants and Countries of Origin
SMR
Group/Country
MaleImm
MaleOrig
0
1
2
3
4
5
6
USA
EWGermany
Rep. Ireland
EW/Sc/NIr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries

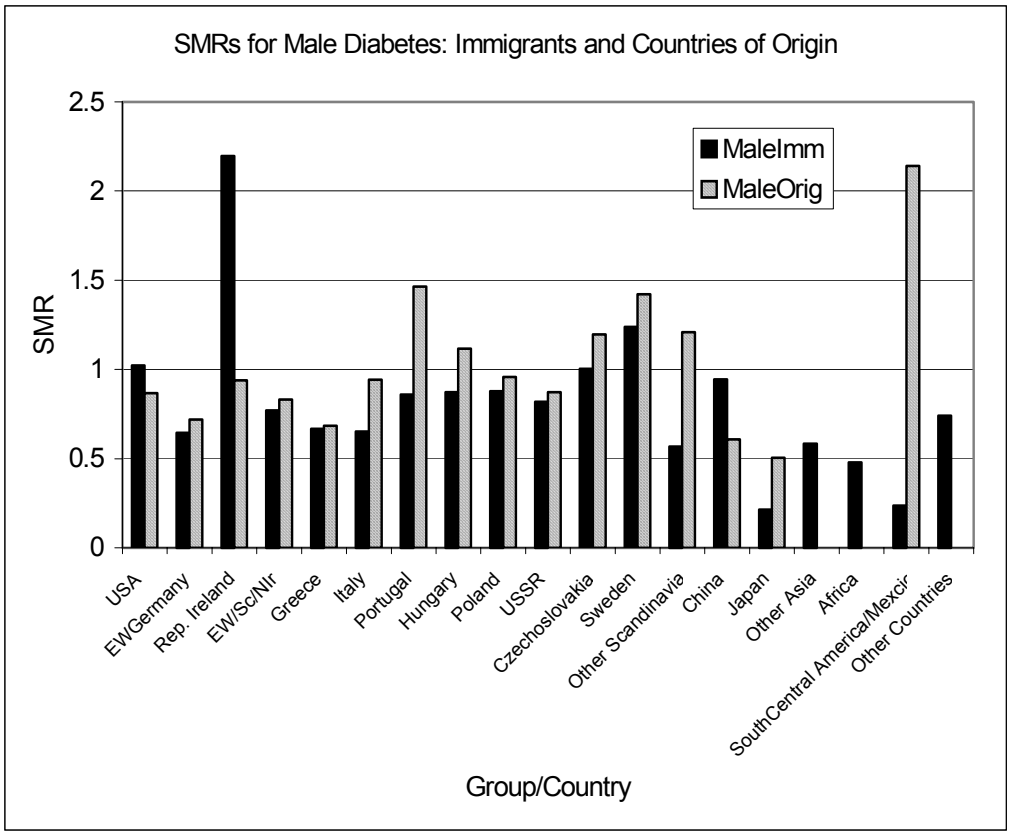

SMRS for Female Stomach Cancer: Immigrants and Countries of Origin
SMR
Group/Country
FemaleImm
FemaleOrig
0
0.5
1
1.5
2
2.5
3
3.5
USA
EWGermany
Rep. Ireland
EW/Sc/NIr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries

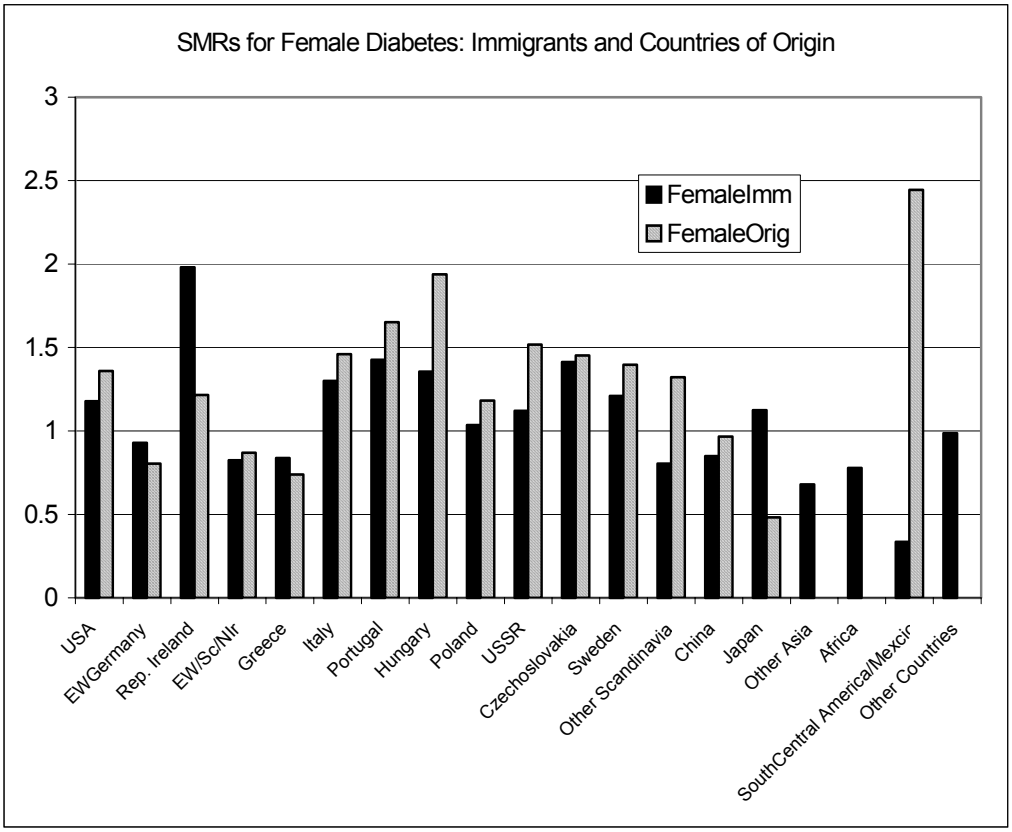

SMRs for Male Lung Cancer: Immigrants and Countries of Origin
SMR
2.5
2
1.5
1
0.5
0
MaleImm
MaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

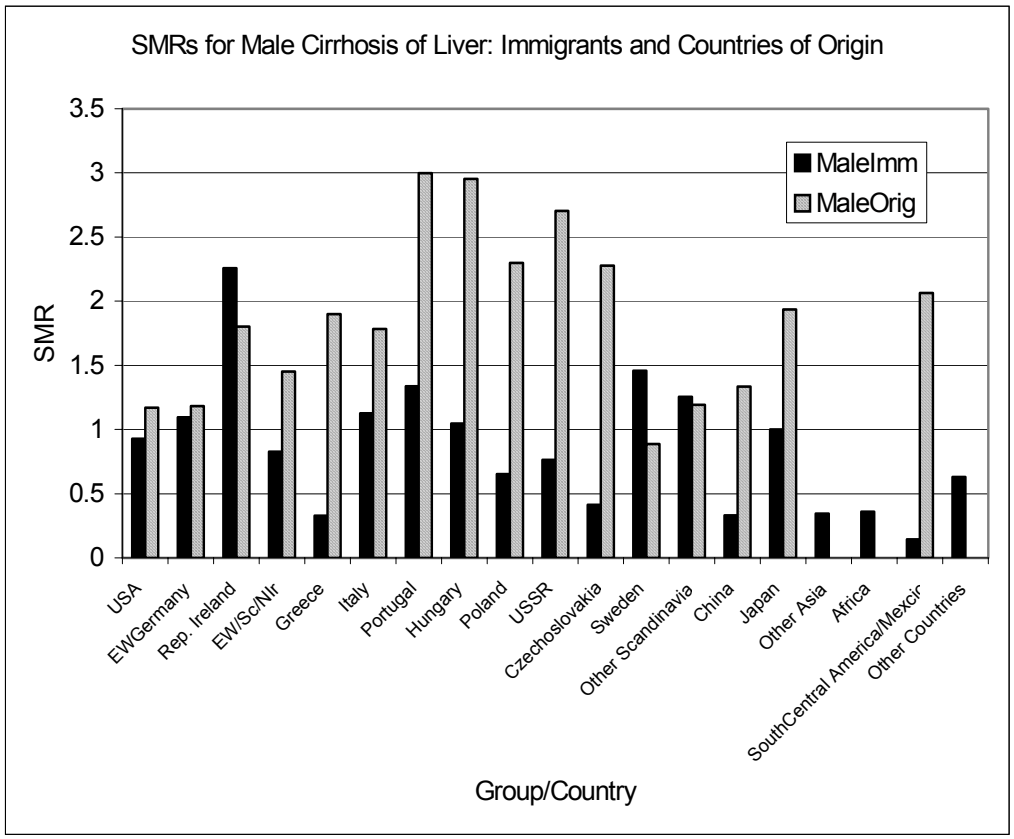

SMRs for Female Lung Cancer: Immigrants and Countries of Origin
SMR
3.5
3
2.5
2
1.5
1
0.5
0
FemaleImm
FemaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

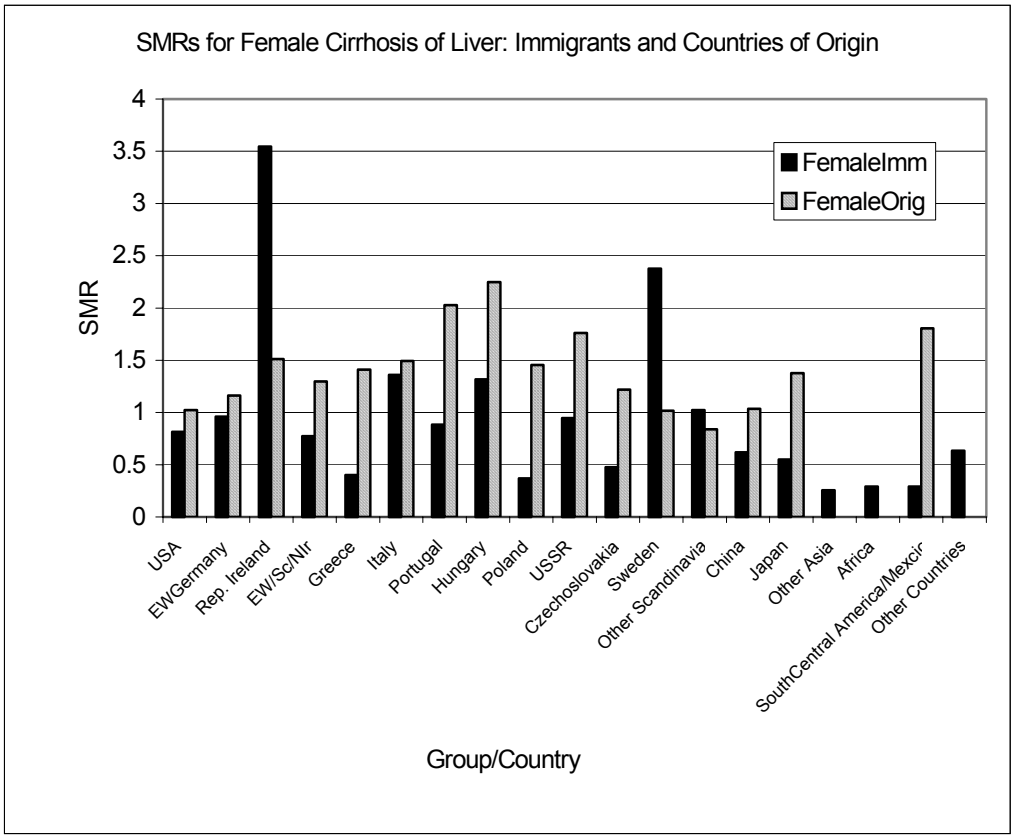

SMRs for Male Other Cancers: Immigrants and Countries of Origin
SMR
3
2.5
2
1.5
1
0.5
0
MaleImm
MaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

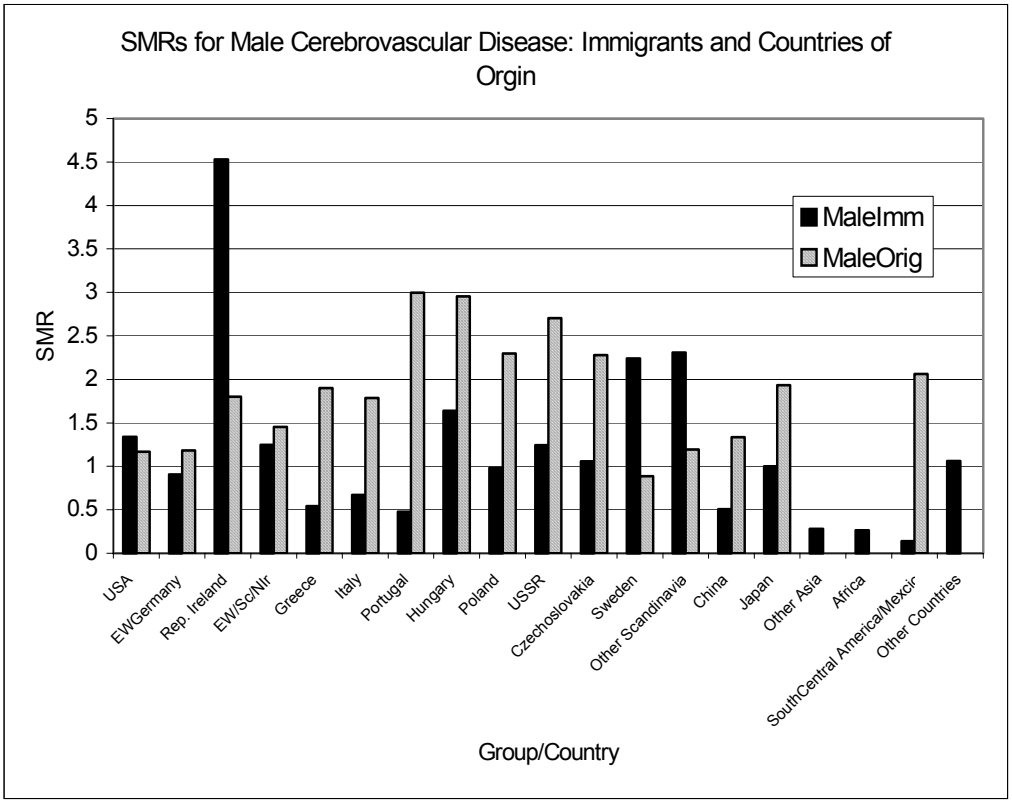

SMRs for Female Other Cancers: Immigrants and Countries of Origin
SMR
3
2.5
2
1.5
1
0.5
0
FemaleImm
FemaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

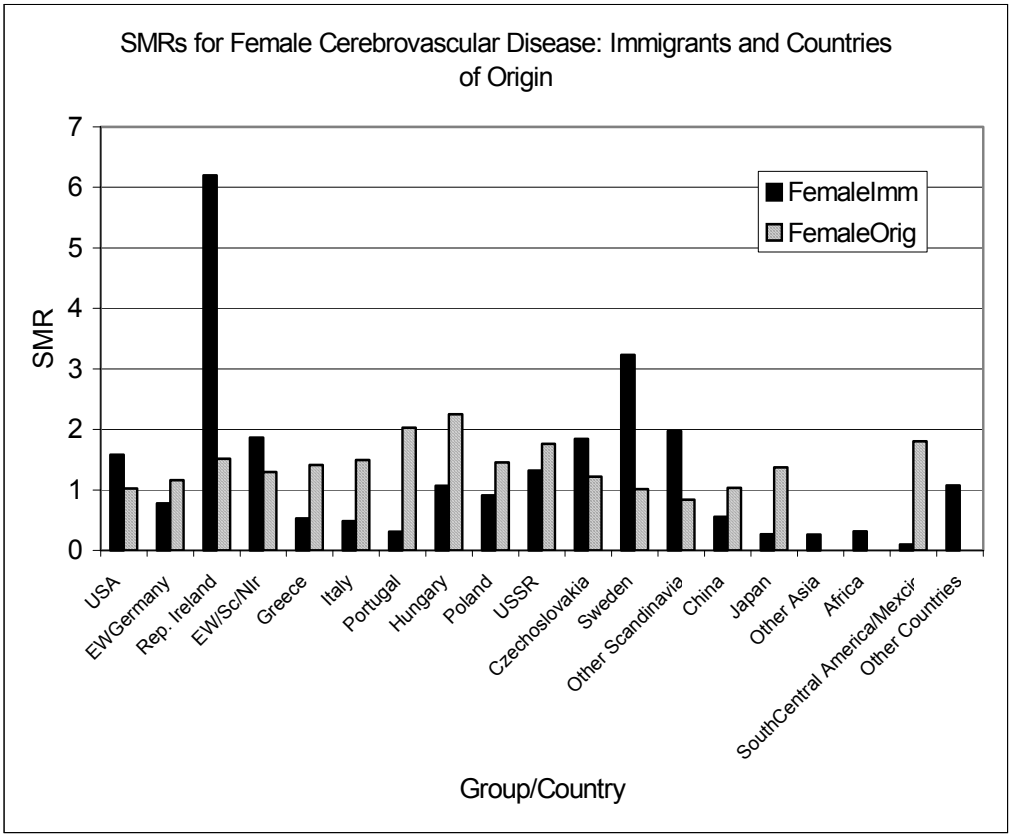

SMRs for Male Diabetes: Immigrants and Countries of Origin
2.5
2
1.5
1
0.5
0
SMR
MaleImm
MaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/NIr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

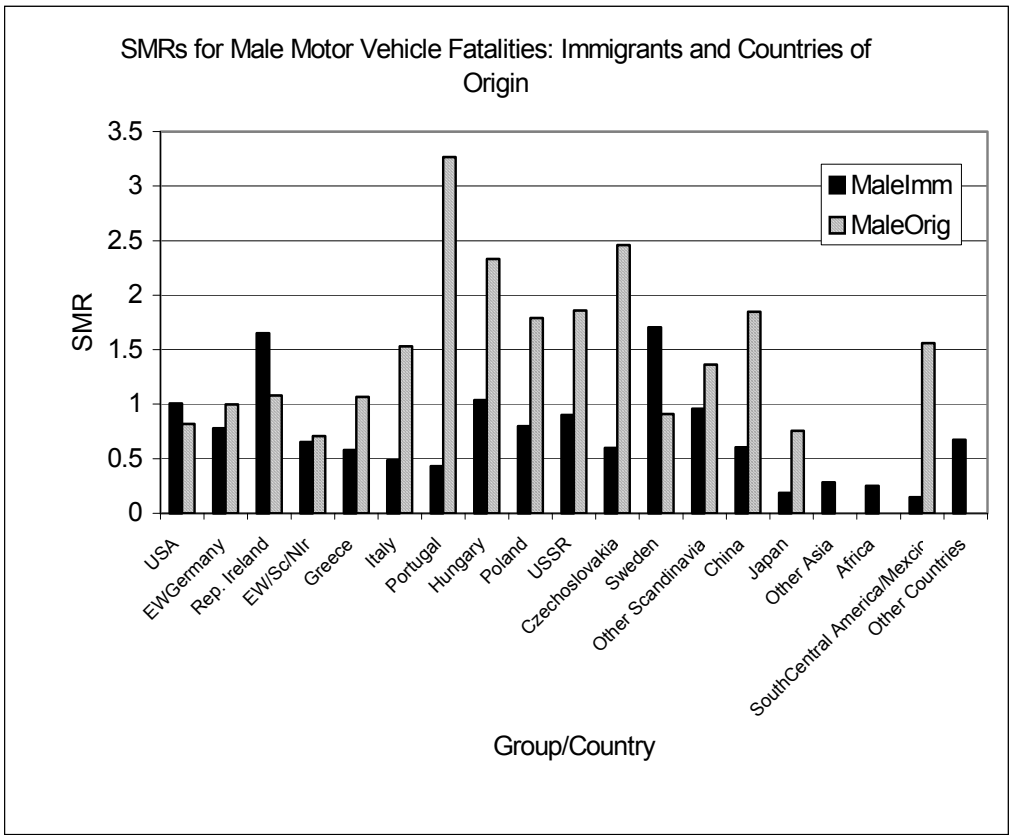

SMRs for Female Diabetes: Immigrants and Countries of Origin
3
2.5
2
1.5
1
0.5
0
FemaleImm
FemaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/NIr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries

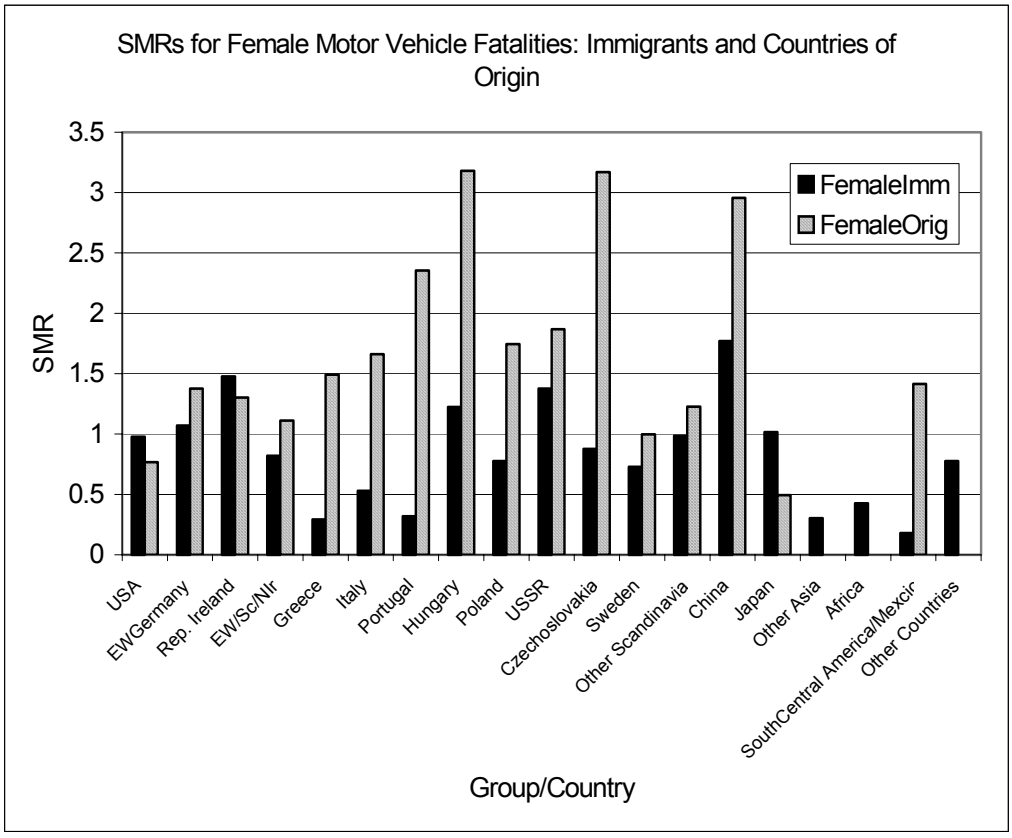

SMRs for Male Cirrhosis of Liver: Immigrants and Countries of Origin
SMR
3.5
3
2.5
2
1.5
1
0.5
0
MaleImm
MaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

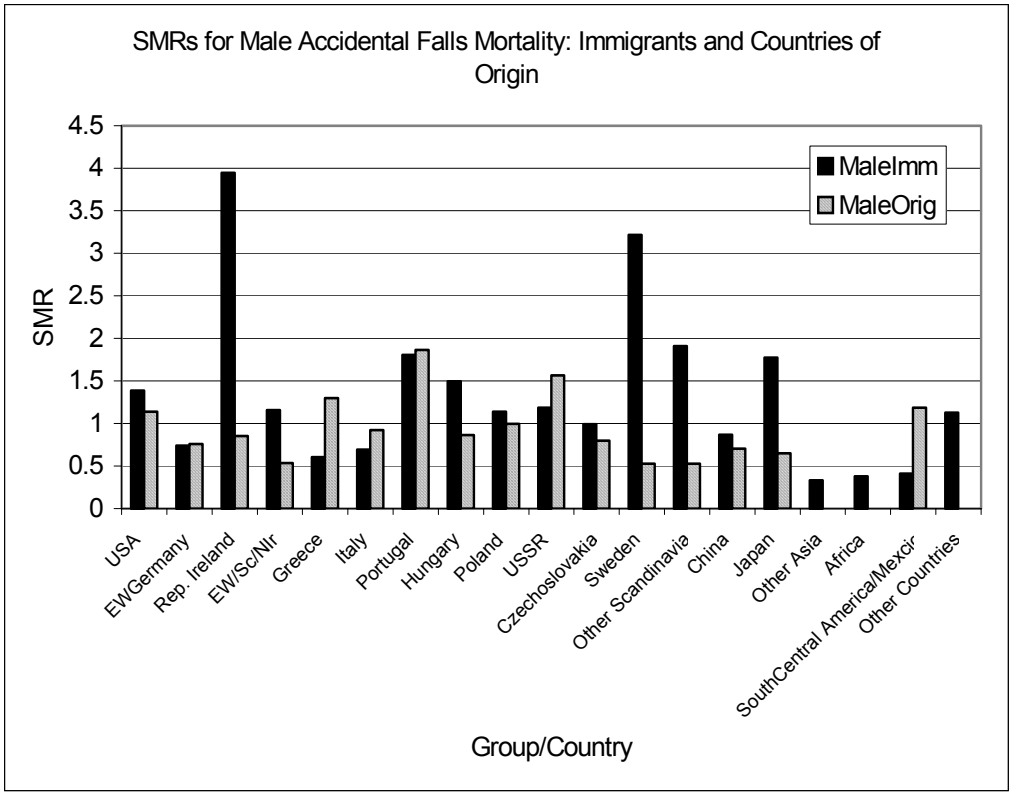

SMRs for Female Cirrhosis of Liver: Immigrants and Countries of Origin
SMR
4
3.5
3
2.5
2
1.5
1
0.5
0
FemaleImm
FemaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

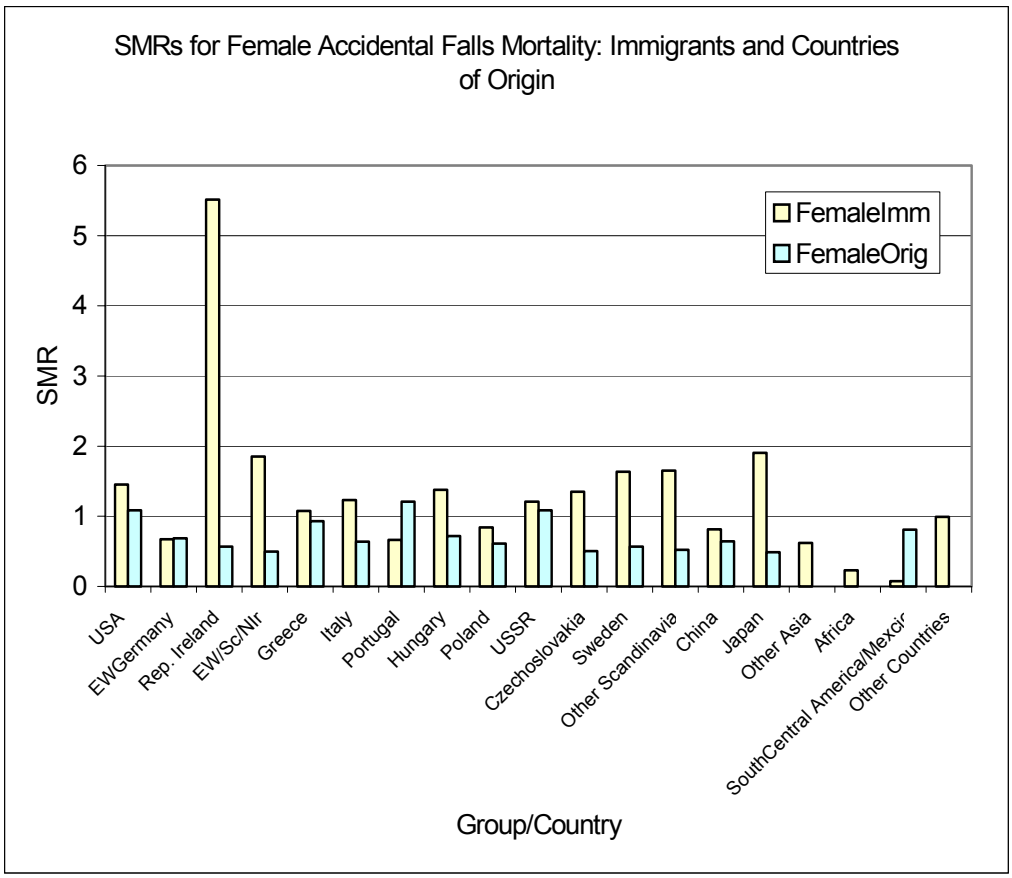

SMRs for Male Cerebrovascular Disease: Immigrants and Countries of Orgin
SMR
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
MaleImm
MaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

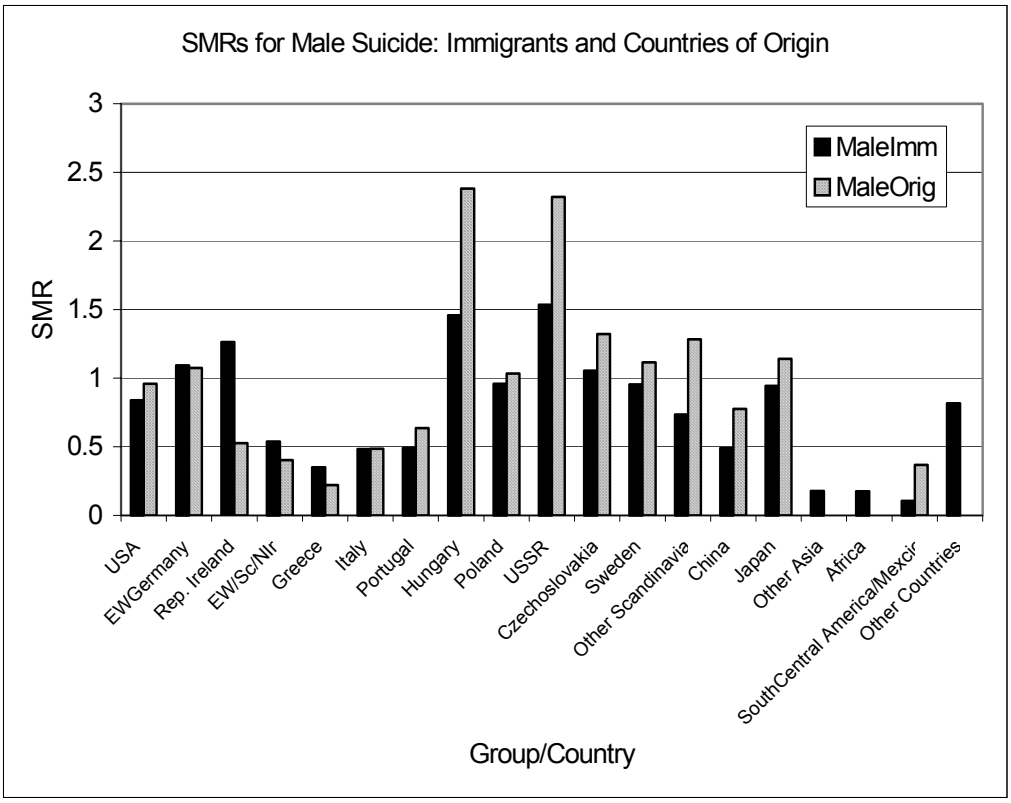

SMRs for Female Cerebrovascular Disease: Immigrants and Countries of Origin
SMR
7
6
5
4
3
2
1
0
FemaleImm
FemaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

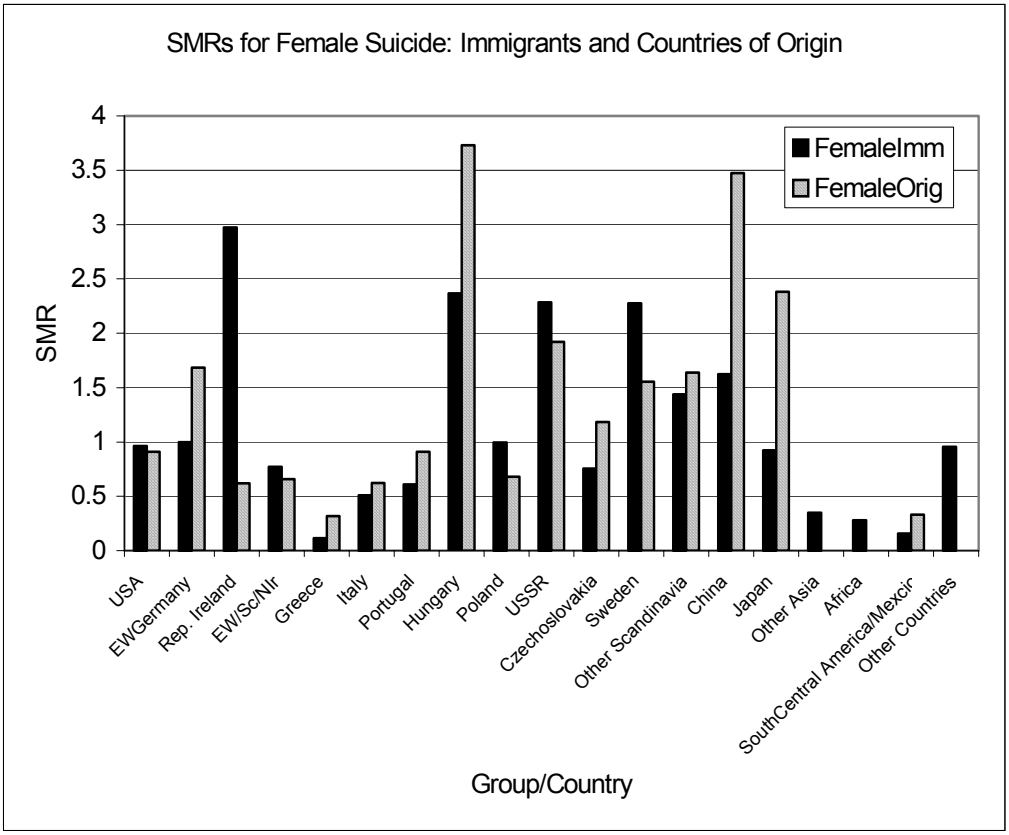

SMRs for Male Motor Vehicle Fatalities: Immigrants and Countries of Origin
SMR
3.5
3
2.5
2
1.5
1
0.5
0
MaleImm
MaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

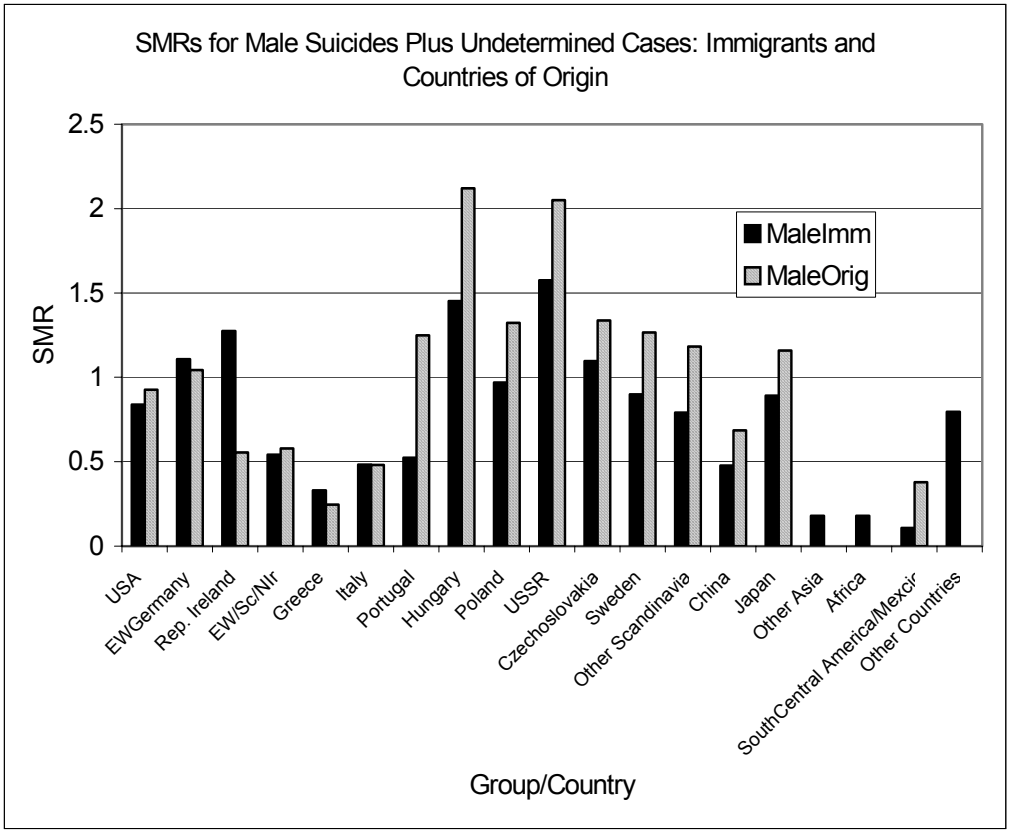

SMRs for Female Motor Vehicle Fatalities: Immigrants and Countries of Origin
SMR
3.5
3
2.5
2
1.5
1
0.5
0
FemaleImm
FemaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

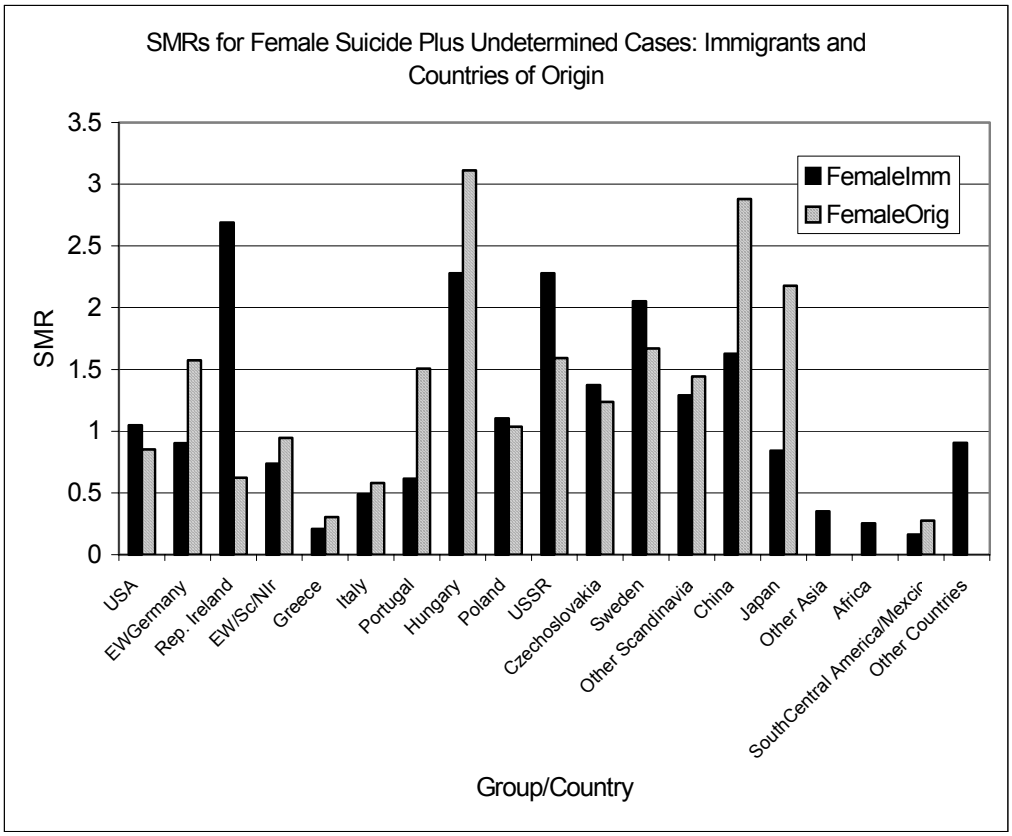

SMRs for Male Accidental Falls Mortality: Immigrants and Countries of Origin
SMR
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
MaleImm
MaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

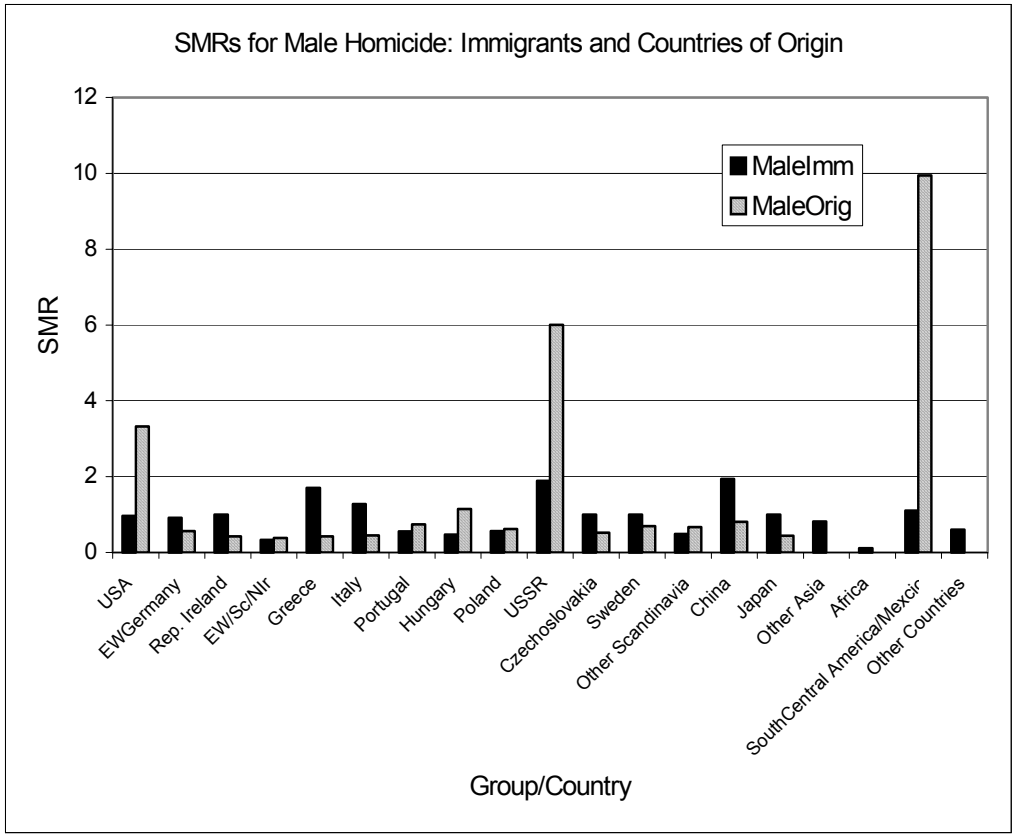

SMRs for Female Accidental Falls Mortality: Immigrants and Countries of Origin
SMR
6
5
4
3
2
1
0
FemaleImm
FemaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

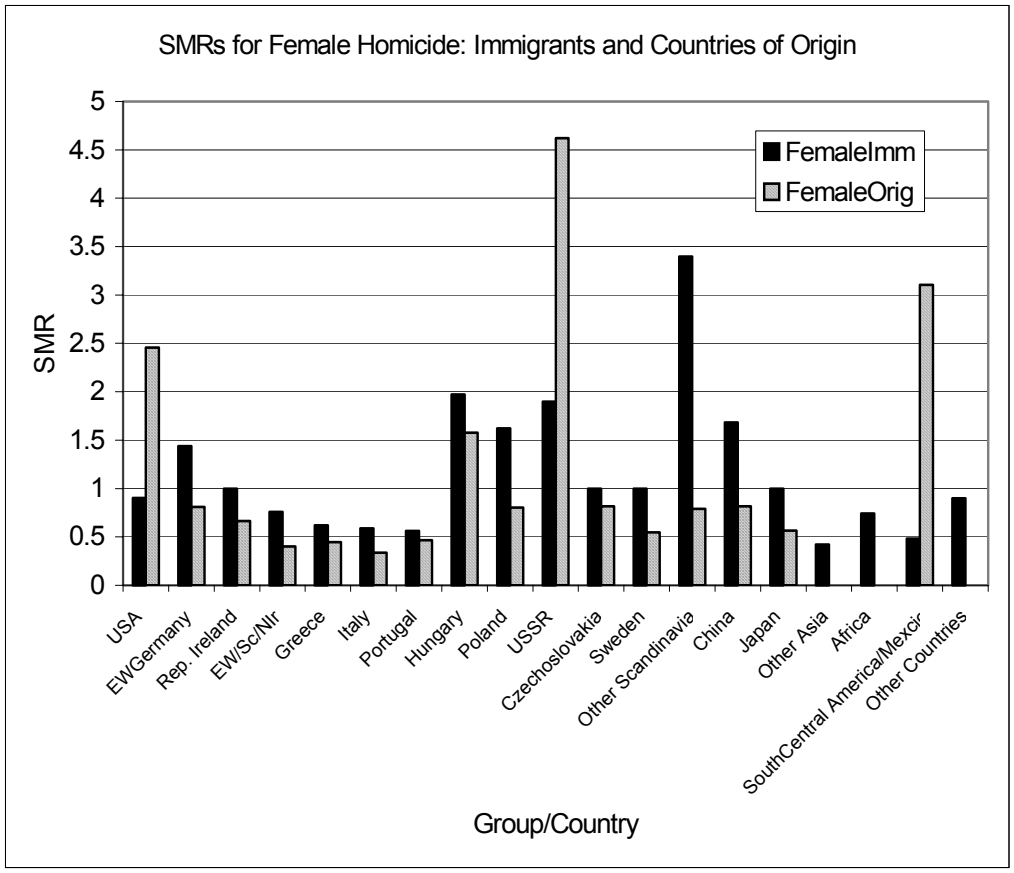

SMRs for Male Suicide: Immigrants and Countries of Origin
SMR
3
2.5
2
1.5
1
0.5
0
MaleImm
MaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

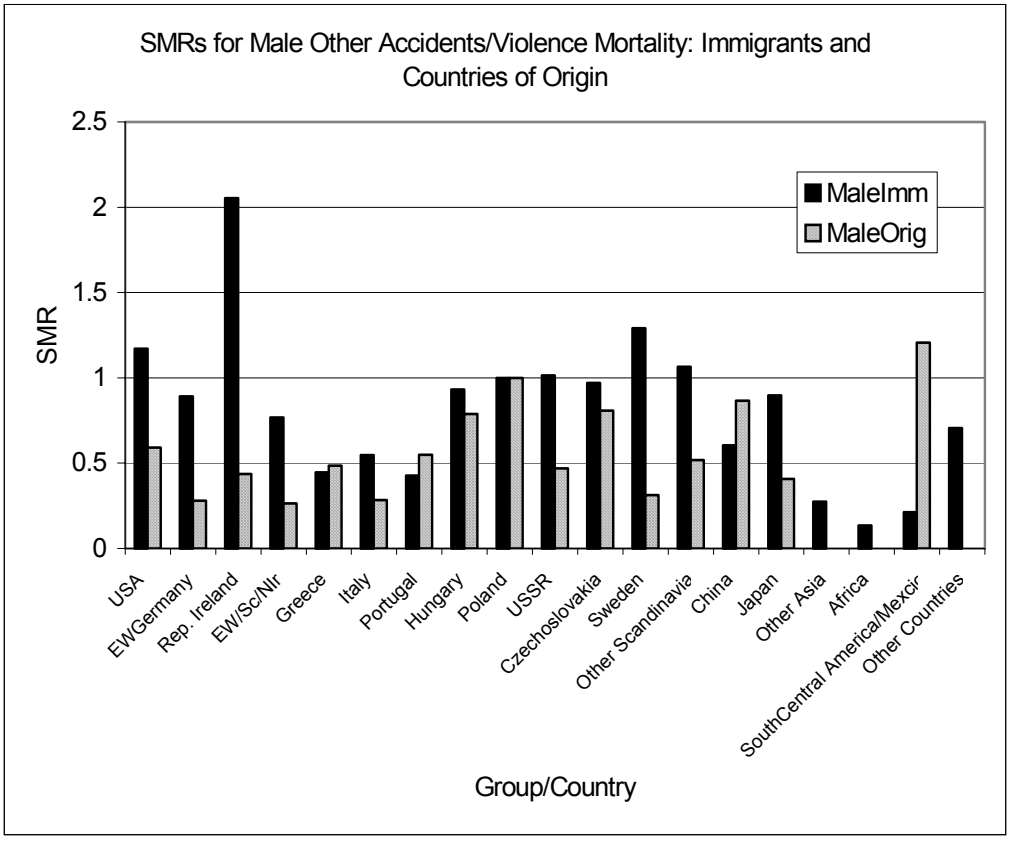

SMRs for Female Suicide: Immigrants and Countries of Origin
SMR
4
3.5
3
2.5
2
1.5
1
0.5
0
FemaleImm
FemaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

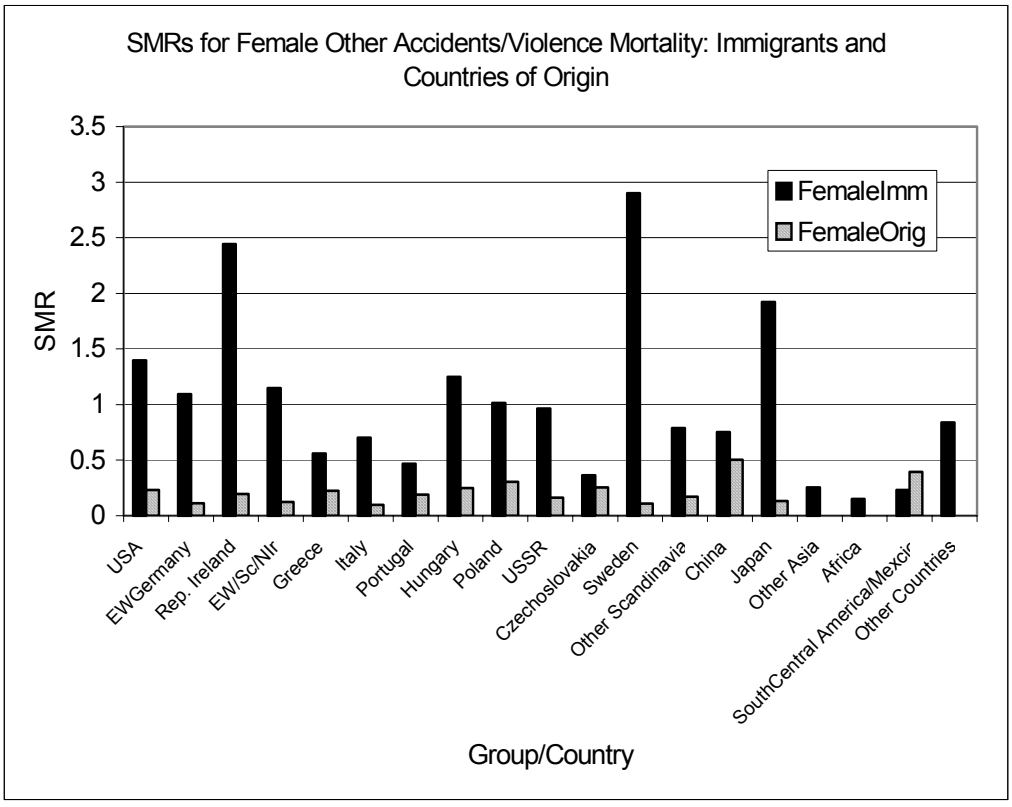

SMRs for Male Suicides Plus Undetermined Cases: Immigrants and Countries of Origin
SMR
2.5
2
1.5
1
0.5
0
MaleImm
MaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/NIr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

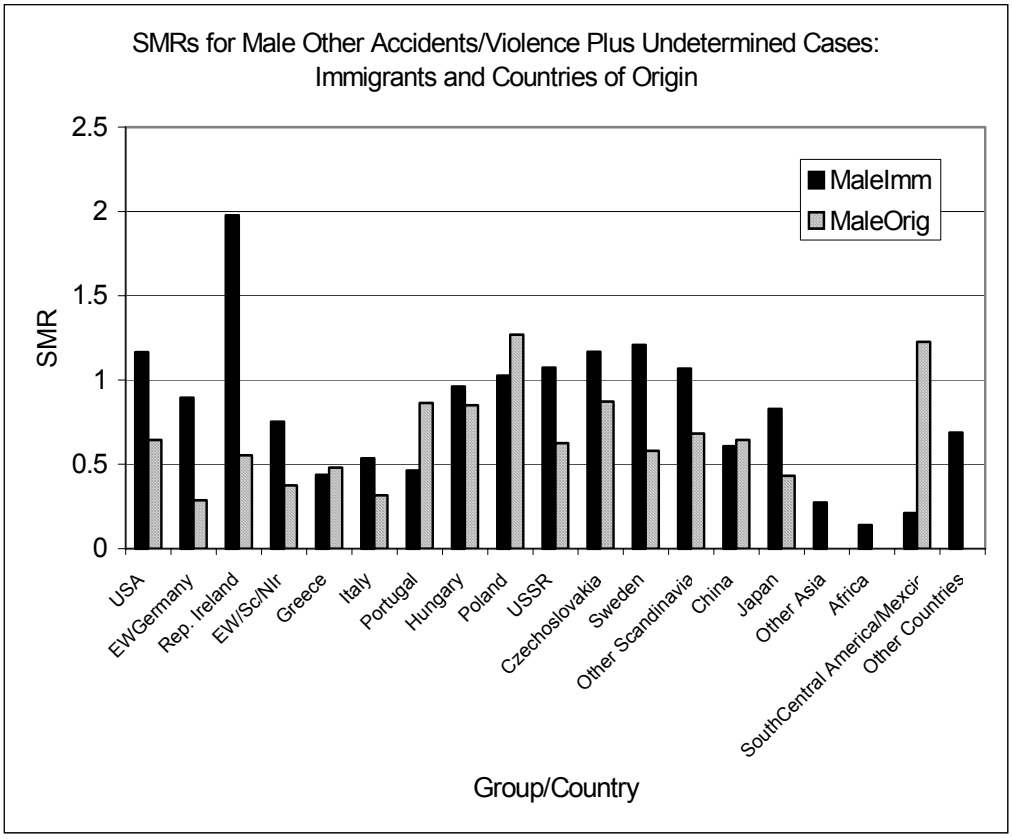

SMRs for Female Suicide Plus Undetermined Cases: Immigrants and Countries of Origin
SMR
3.5
3
2.5
2
1.5
1
0.5
0
FemaleImm
FemaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/NIr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

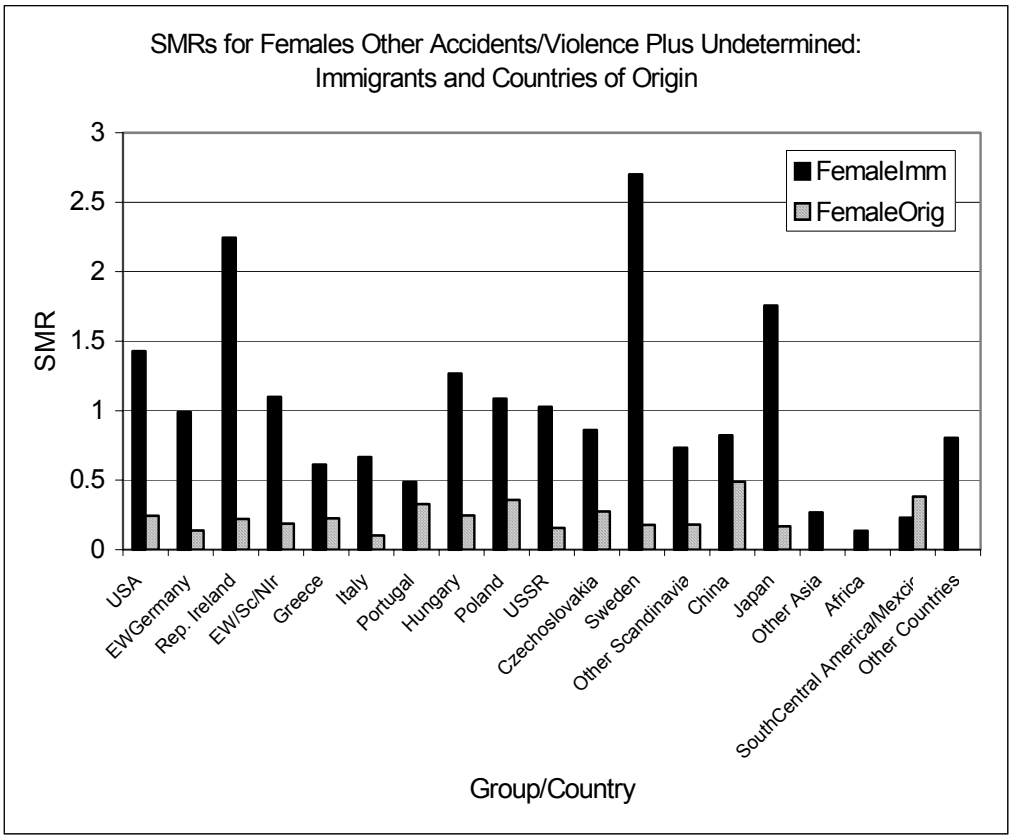

SMRs for Male Homicide: Immigrants and Countries of Origin
12
10
8
6
4
2
0
SMR
MaleImm
MaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

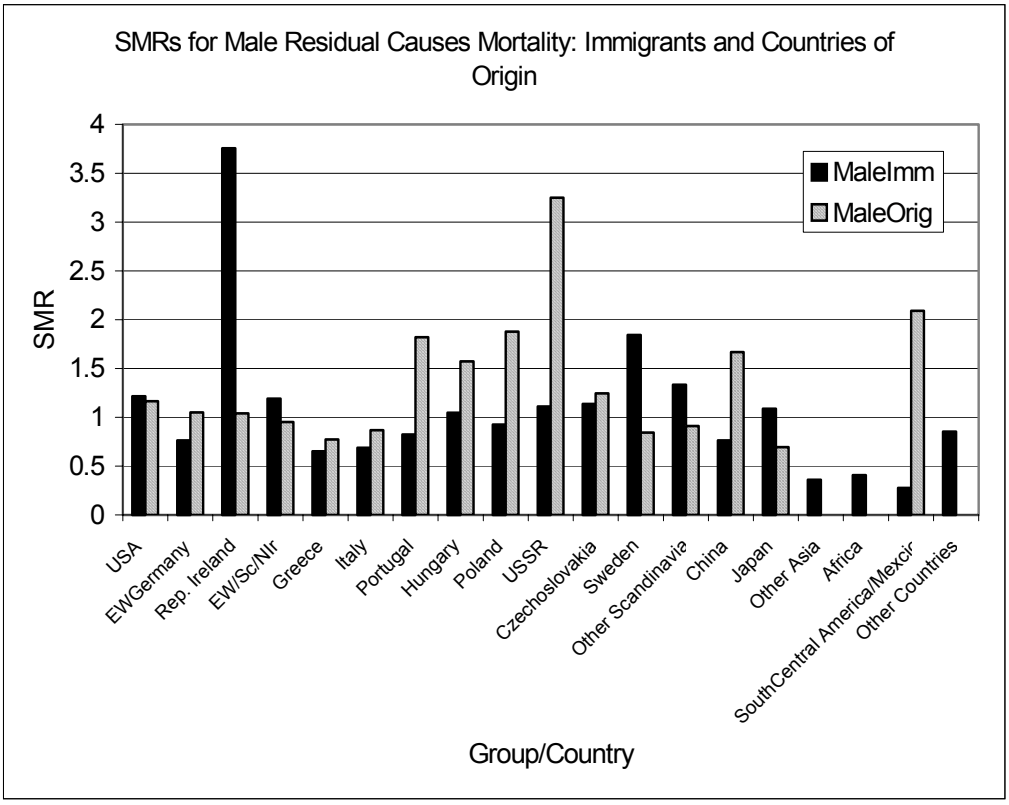

SMRs for Female Homicide: Immigrants and Countries of Origin
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
SMR
FemaleImm
FemaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

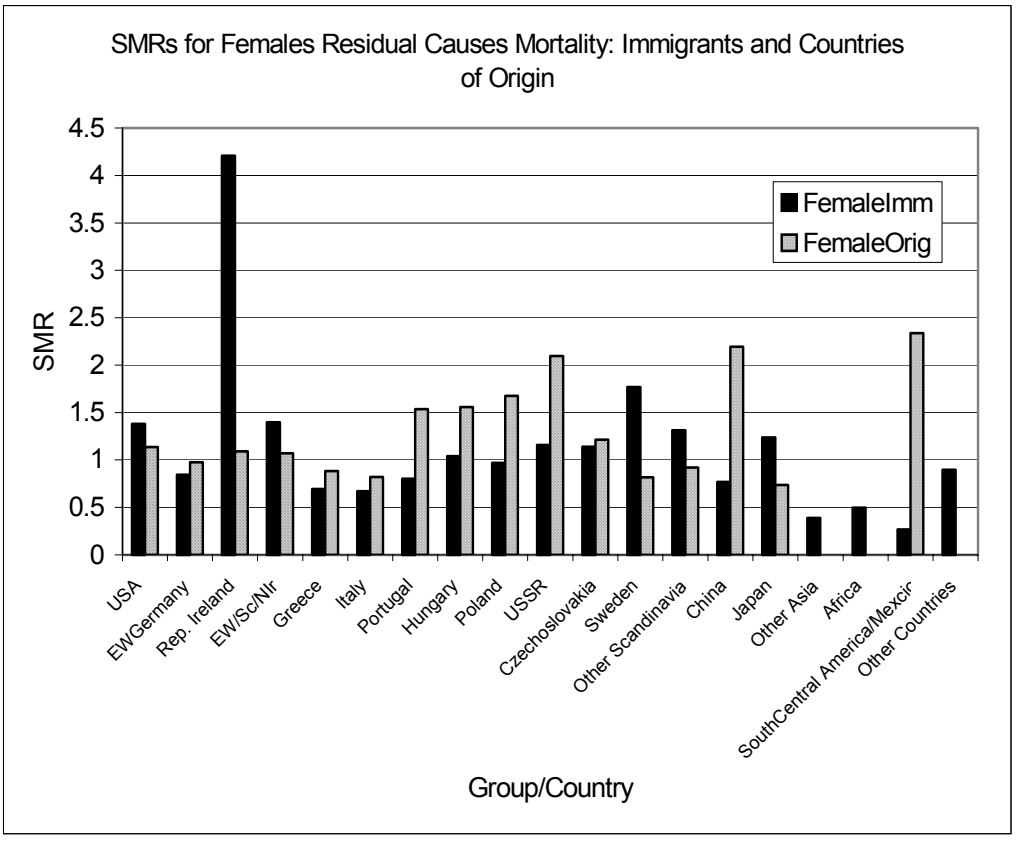

SMRs for Male Other Accidents/Violence Mortality: Immigrants and Countries of Origin
SMR
2.5
2
1.5
1
0.5
0
MaleImm
MaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country


SMRs for Female Other Accidents/Violence Mortality: Immigrants and Countries of Origin
SMR
3.5
3
2.5
2
1.5
1
0.5
0
FemaleImm
FemaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country


SMRs for Male Other Accidents/Violence Plus Undetermined Cases:
Immigrants and Countries of Origin
SMR
2.5
2
1.5
1
0.5
0
MaleImm
MaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country


SMRs for Females Other Accidents/Violence Plus Undetermined:
Immigrants and Countries of Origin
SMR
3
2.5
2
1.5
1
0.5
0
FemaleImm
FemaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/Nlr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country


SMRs for Male Residual Causes Mortality: Immigrants and Countries of Origin
SMR
4
3.5
3
2.5
2
1.5
1
0.5
0
MaleImm
MaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/NIr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country


SMRs for Females Residual Causes Mortality: Immigrants and Countries of Origin
SMR
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
FemaleImm
FemaleOrig
USA
EWGermany
Rep. Ireland
EW/Sc/NIr
Greece
Italy
Portugal
Hungary
Poland
USSR
Czechoslovakia
Sweden
Other Scandinavia
China
Japan
Other Asia
Africa
SouthCentral America/Mexcir
Other Countries
Group/Country

APPENDIX D: CRUDE CAUSE-SPECIFIC DEATH RATES (PER 100,000 POPULATION) FOR IMMIGRANT GROUPS AND THE CANADIAN BORN, 1991.

Appendix D: Crude Cause-Specific Death Rates by Nationality Group and Sex, 1991

			GENDER	
			MALE	FEMALE
COUNTRY OF BIRTH OF IMMIGRANTS	CANADIAN BORN	CDR--IHD	166.64	123.51
		CDR---OHD	37.71	40.19
		cdr--st. cancer	7.75	4.83
		cdr--lung cancer	68.35	31.88
		cdr--other cancers	126.79	127.35
		cdr--diabetes	14.03	14.75
		cdr--cirrhosis of liver	10.31	4.94
		cdr--cerebrovascular	4.92	7.49
		cdr--mva	19.13	8.00
		cdr--acc. falls	6.20	6.57
		cdr--suicide	22.14	5.40
		cdr--- suicide+undetermined	23.47	5.95
		cdr---homicide	2.84	1.57
		cdr---other acc/violence	18.08	5.96
		cdr---residual causes	218.86	200.87
	USA	CDR--IHD	408.14	375.89
		CDR---OHD	112.88	140.93
		cdr--st. cancer	14.20	8.68
		cdr--lung cancer	104.81	56.32
		cdr--other cancers	278.05	277.04
		cdr--diabetes	32.80	41.30
		cdr--cirrhosis of liver	16.20	6.91
		cdr--cerebrovascular	18.21	33.78
		cdr--mva	21.52	9.41
		cdr--acc. falls	20.16	25.97
		cdr--suicide	22.00	6.16
		cdr--- suicide+undetermined	23.32	7.41
		cdr---homicide	2.92	1.42
		cdr---other acc/violence	25.95	12.52
		cdr---residual causes	562.31	656.17
	EWGERMANY	CDR--IHD	276.59	174.44
		CDR---OHD	58.34	66.20
		cdr--st. cancer	18.19	10.44
		cdr--lung cancer	92.67	44.55
		cdr--other cancers	212.41	217.13
		cdr--diabetes	17.88	23.58
		cdr--cirrhosis of liver	24.48	8.96
		cdr--cerebrovascular	8.39	9.31
		cdr--mva	14.82	9.54
		cdr--acc. falls	8.11	7.04

		cdr--suicide	29.89	6.95
		cdr---suicide+undetermined	32.12	6.95
		cdr---homicide	2.75	2.17
		cdr---other acc/violence	18.33	8.47
		cdr---residual causes	265.90	266.46
	REPUBLIC OF IRELAND	CDR--IHD	925.75	880.67
		CDR---OHD	228.94	280.67
		cdr--st. cancer	66.15	26.77
		cdr--lung cancer	294.18	189.80
		cdr--other cancers	730.69	688.34
		cdr--diabetes	63.76	56.24
		cdr--cirrhosis of liver	47.96	33.12
		cdr--cerebrovascular	46.17	90.39
		cdr--mva	31.96	13.33
		cdr--acc. falls	46.13	69.53
		cdr--suicide	34.25	20.49
		cdr---suicide+undetermined	36.63	20.49
		cdr---homicide	.00	2.25
		cdr---other acc/violence	44.01	19.99
		cdr---residual causes	1378.18	1525.66
	ENGLAND-WALES/SCOTLAND	CDR--IHD	462.25	472.12
		CDR---OHD	107.95	152.62
		cdr--st. cancer	26.52	15.00
		cdr--lung cancer	160.55	87.01
		cdr--other cancers	356.43	343.47
		cdr--diabetes	32.70	36.47
		cdr--cirrhosis of liver	20.05	8.99
		cdr--cerebrovascular	21.88	47.08
		cdr--mva	13.76	8.41
		cdr--acc. falls	21.44	39.52
		cdr--suicide	15.20	5.28
		cdr---suicide+undetermined	16.20	5.62
		cdr---homicide	1.00	1.10
		cdr---other acc/violence	15.90	11.95
		cdr---residual causes	652.08	813.28
	GREECE	CDR--IHD	167.47	105.87
		CDR---OHD	37.96	37.70
		cdr--st. cancer	20.56	11.88
		cdr--lung cancer	85.59	16.86
		cdr--other cancers	130.22	144.43
		cdr--diabetes	15.26	18.58
		cdr--cirrhosis of liver	7.02	3.48
		cdr--cerebrovascular	3.79	5.68

		cdr--mva	10.64	2.50
		cdr--acc. falls	5.45	10.13
		cdr--suicide	9.90	.85
		cdr---suicide+undetermined	9.90	1.70
		cdr---homicide	5.36	.95
		cdr---other acc/violence	9.60	4.19
		cdr---residual causes	191.84	194.93
	ITALY	CDR--IHD	234.54	186.09
		CDR---OHD	61.85	62.14
		cdr--st. cancer	30.84	16.55
		cdr--lung cancer	125.78	18.96
		cdr--other cancers	227.28	198.52
		cdr--diabetes	20.65	36.55
		cdr--cirrhosis of liver	28.45	13.78
		cdr--cerebrovascular	7.10	6.70
		cdr--mva	9.00	4.72
		cdr--acc. falls	8.56	14.82
		cdr--suicide	13.67	3.75
		cdr---suicide+undetermined	14.46	3.99
		cdr---homicide	3.90	.88
		cdr---other acc/violence	12.04	5.87
		cdr---residual causes	293.10	237.45
	PORTUGAL	CDR--IHD	90.98	75.39
		CDR---OHD	35.79	20.64
		cdr--st. cancer	16.22	11.16
		cdr--lung cancer	59.65	6.32
		cdr--other cancers	106.09	95.70
		cdr--diabetes	11.08	18.00
		cdr--cirrhosis of liver	17.62	4.94
		cdr--cerebrovascular	1.60	1.69
		cdr--mva	8.84	2.66
		cdr--acc. falls	9.54	3.31
		cdr--suicide	13.68	4.22
		cdr---suicide+undetermined	15.39	4.64
		cdr---homicide	1.89	.96
		cdr---other acc/violence	8.66	2.69
		cdr---residual causes	154.44	126.75
	HUNGARY	CDR--IHD	586.86	464.49
		CDR---OHD	105.72	143.12
		cdr--st. cancer	38.64	15.24
		cdr--lung cancer	180.81	65.46
		cdr--other cancers	389.26	385.09
		cdr--diabetes	40.01	63.12

		cdr--cirrhosis of liver	32.39	17.28
		cdr--cerebrovascular	27.67	27.34
		cdr--mva	20.11	12.54
		cdr--acc. falls	27.12	29.83
		cdr--suicide	40.44	16.32
		cdr---suicide+undetermined	42.63	17.54
		cdr---homicide	1.29	2.66
		cdr---other acc/violence	20.69	13.59
		cdr---residual causes	659.75	625.15
	POLAND	CDR--IHD	552.88	383.59
		CDR---OHD	111.29	117.88
		cdr--st. cancer	38.81	17.33
		cdr--lung cancer	145.82	38.28
		cdr--other cancers	341.49	278.62
		cdr--diabetes	41.52	42.48
		cdr--cirrhosis of liver	16.24	4.02
		cdr--cerebrovascular	19.19	20.81
		cdr--mva	16.87	7.69
		cdr--acc. falls	22.84	16.25
		cdr--suicide	25.66	6.41
		cdr---suicide+undetermined	27.47	7.89
		cdr---homicide	1.60	2.36
		cdr---other acc/violence	24.11	9.96
		cdr---residual causes	580.41	517.21
	FORMER USSR	CDR--IHD	1152.97	933.89
		CDR---OHD	293.80	288.27
		cdr--st. cancer	76.35	48.14
		cdr--lung cancer	275.58	88.88
		cdr--other cancers	738.46	578.67
		cdr--diabetes	76.41	95.05
		cdr--cirrhosis of liver	31.45	17.28
		cdr--cerebrovascular	52.35	68.21
		cdr--mva	21.48	17.73
		cdr--acc. falls	48.76	51.86
		cdr--suicide	43.54	14.47
		cdr---suicide+undetermined	47.27	16.41
		cdr---homicide	4.54	2.22
		cdr---other acc/violence	32.24	15.58
		cdr---residual causes	1423.90	1312.46
	FORMER CZECHOSLOVAKIA	CDR--IHD	505.06	430.55
		CDR---OHD	103.04	126.74
		cdr--st. cancer	25.43	17.12
		cdr--lung cancer	124.37	37.91

		cdr--other cancers	336.56	281.25
		cdr--diabetes	37.74	50.43
		cdr--cirrhosis of liver	10.32	5.05
		cdr--cerebrovascular	14.66	34.73
		cdr--mva	12.00	8.50
		cdr--acc. falls	14.94	21.77
		cdr--suicide	28.81	5.08
		cdr---suicide+undetermined	31.79	10.25
		cdr---homicide	.00	1.92
		cdr---other acc/violence	30.21	3.33
		cdr---residual causes	579.74	520.55
	SWEDEN	CDR--IHD	931.79	516.33
		CDR---OHD	300.24	198.96
		cdr--st. cancer	52.97	8.19
		cdr--lung cancer	175.90	66.28
		cdr--other cancers	576.47	303.64
		cdr--diabetes	71.61	52.14
		cdr--cirrhosis of liver	35.65	22.90
		cdr--cerebrovascular	61.59	88.50
		cdr--mva	39.03	7.35
		cdr--acc. falls	88.70	37.16
		cdr--suicide	27.37	15.62
		cdr---suicide+undetermined	27.37	15.62
		cdr---homicide	.00	.00
		cdr---other acc/violence	17.82	29.71
		cdr---residual causes	1594.70	1052.55
	OTHER SCANDINAVIA(ICELAND)	CDR--IHD	710.32	498.38
		CDR---OHD	225.68	178.77
		cdr--st. cancer	30.98	14.54
		cdr--lung cancer	203.43	72.72
		cdr--other cancers	482.20	332.02
		cdr--diabetes	30.75	37.45
		cdr--cirrhosis of liver	37.62	12.75
		cdr--cerebrovascular	52.36	52.31
		cdr--mva	19.72	10.08
		cdr--acc. falls	44.66	36.97
		cdr--suicide	20.87	10.12
		cdr---suicide+undetermined	23.81	10.12
		cdr---homicide	1.38	4.73
		cdr---other acc/violence	30.95	8.57
		cdr---residual causes	1009.74	802.45
	CHINA	CDR--IHD	152.81	122.48
		CDR---OHD	66.98	63.56

		cdr--st. cancer	24.93	15.99
		cdr--lung cancer	99.66	48.51
		cdr--other cancers	212.63	190.43
		cdr--diabetes	29.51	27.65
		cdr--cirrhosis of liver	7.34	6.19
		cdr--cerebrovascular	5.74	9.56
		cdr--mva	12.08	16.69
		cdr--acc. falls	11.07	12.01
		cdr--suicide	13.78	11.30
		cdr---suicide+undetermined	14.20	12.53
		cdr---homicide	6.04	2.59
		cdr---other acc/violence	12.88	6.62
		cdr---residual causes	335.01	321.32
	JAPAN	CDR--IHD	110.46	137.29
		CDR---OHD	35.68	51.02
		cdr--st. cancer	48.68	15.19
		cdr--lung cancer	51.18	8.88
		cdr--other cancers	96.21	95.65
		cdr--diabetes	3.98	21.10
		cdr--cirrhosis of liver	.00	2.97
		cdr--cerebrovascular	.00	2.96
		cdr--mva	4.11	9.10
		cdr--acc. falls	16.41	17.92
		cdr--suicide	25.45	5.99
		cdr---suicide+undetermined	25.45	5.99
		cdr---homicide	.00	.00
		cdr---other acc/violence	12.89	12.65
		cdr---residual causes	295.11	318.80
	OTHER ASIA	CDR--IHD	44.84	28.08
		CDR---OHD	8.84	9.52
		cdr--st. cancer	2.14	1.71
		cdr--lung cancer	9.08	3.66
		cdr--other cancers	26.85	27.67
		cdr--diabetes	5.47	5.69
		cdr--cirrhosis of liver	2.96	.99
		cdr--cerebrovascular	.79	.91
		cdr--mva	6.09	2.46
		cdr--acc. falls	1.48	2.04
		cdr--suicide	4.67	2.26
		cdr---suicide+undetermined	5.04	2.47
		cdr---homicide	2.76	.76
		cdr---other acc/violence	5.31	1.27
		cdr---residual causes	47.35	41.58

AFRICA	CDR--IHD	53.19	35.36
	CDR---OHD	9.88	9.93
	cdr--st. cancer	1.73	2.42
	cdr--lung cancer	8.06	3.67
	cdr--other cancers	43.22	51.72
	cdr--diabetes	4.61	7.42
	cdr--cirrhosis of liver	3.46	1.28
	cdr--cerebrovascular	.70	1.23
	cdr--mva	5.23	3.49
	cdr--acc. falls	1.69	.84
	cdr--suicide	4.80	1.82
	cdr---suicide+undetermined	5.18	1.82
	cdr---homicide	.39	1.31
	cdr---other acc/violence	2.59	.78
	cdr---residual causes	49.32	59.61
SOUTHCENTRAL AMERICA/MEXICO	CDR--IHD	17.73	12.73
	CDR---OHD	6.87	7.90
	cdr--st. cancer	2.34	1.09
	cdr--lung cancer	4.35	2.21
	cdr--other cancers	18.06	18.40
	cdr--diabetes	2.02	3.04
	cdr--cirrhosis of liver	1.25	1.22
	cdr--cerebrovascular	.33	.38
	cdr--mva	3.17	1.46
	cdr--acc. falls	1.68	.27
	cdr--suicide	2.48	1.04
	cdr---suicide+undetermined	2.82	1.17
	cdr---homicide	4.08	.85
	cdr---other acc/violence	3.98	1.18
	cdr---residual causes	39.39	31.01
OTHER COUNTRIES	CDR--IHD	271.69	208.19
	CDR---OHD	52.57	70.77
	cdr--st. cancer	18.47	12.98
	cdr--lung cancer	110.21	29.47
	cdr--other cancers	205.78	202.97
	cdr--diabetes	20.88	26.11
	cdr--cirrhosis of liver	13.69	5.76
	cdr--cerebrovascular	10.29	14.20
	cdr--mva	13.05	6.99
	cdr--acc. falls	12.74	11.41
	cdr--suicide	22.51	6.66
	cdr---suicide+undetermined	23.27	6.98
	cdr---homicide	1.85	1.37

		cdr---other acc/violence	15.19	6.67
		cdr---residual causes	314.87	301.72

APPENDIX E: CRUDE CAUSE-SPECIFIC DEATH RATES (PER 100,000 POPULATION) FOR OLD WAVE AND NEW WAVE IMMIGRANTS, 1991.

Appendix E: Crude Cause-Specific Death Rates (per 100,000) by Sex: Canadian Born, Old Wave and New Wave Immigrants, 1991

			GENDER	
			MALE	FEMALE
COUNTRY OF BIRTH OF IMMIGRANTS	CANADIAN BORN	total	725.00	584.00
		ischemic heart disease	166.64	123.51
		other heart disease	37.71	40.19
		stomach cancer	7.75	4.83
		lung cancer	68.35	31.88
		other cancers	126.79	127.35
		diabetes	14.03	14.75
		cirrhosis of liver	10.31	4.94
		cerebrovascular	4.92	7.49
		motor vehicle accs.	19.13	8.00
		acc. falls	6.20	6.57
		suicide	22.14	5.40
		suicide+undet.	23.47	5.95
		homicide	2.84	1.57
		other accs/violence	18.08	5.96
		residual	196.63	195.59
	OLD Wave	total	1575.00	1475.00
		ischemic heart disease	389.68	344.31
		other heart disease	92.30	114.04
		stomach cancer	26.72	15.04
		lung cancer	132.83	52.67
		other cancers	290.24	273.55
		diabetes	28.67	36.35
		cirrhosis of liver	20.26	8.81
		cerebrovascular	16.37	27.97
		motor vehicle accs.	14.27	7.91
		acc. falls	17.74	23.98
		suicide	20.57	6.25
		suicide+undet.	21.87	6.88
		homicide	2.19	1.44
		other accs/violence	17.73	9.46
		residual	483.55	546.31
	NEW Wave	total	234.00	191.54
		ischemic heart disease	48.63	33.24
		other heart disease	13.72	14.17
		stomach cancer	4.20	2.94
		lung cancer	15.96	7.46
		other cancers	43.27	42.53
		diabetes	6.67	7.16
		cirrhosis of liver	2.97	1.57
		cerebrovascular	1.11	1.60
		motor vehicle accs.	5.79	3.61

		acc. falls	2.42	2.36
		suicide	4.95	2.72
		suicide+undet.	5.32	2.98
		homicide	3.13	1.01
		other accs/violence	5.35	1.70
		residual	70.51	63.05

APPENDIX F: CAUSE-SPECIFIC INDIRECTLY STANDARDIZED MORTALITY RATIOS FOR OLD AND NEW WAVE IMMIGRANTS, 1991 (Canadian Born as standard)

	Males		Females	
Cause of Death	Old Wave	New Wave	Old Wave	New Wave
IHD	.817	.364	.907	.370
Other HD	.799	.456	.889	.479
Stomach Cancer	1.298	.658	1.232	.764
Lung Cancer	.774	.284	.812	.267
Other Cancers	.868	.413	.908	.391
Diabetes	.725	.597	.889	.647
Cirrhosis of Liver	.866	.298	.852	.343
Cerebrovascular	.866	.292	.944	.306
MVA	.701	.273	.812	.433
Accidental Falls	.897	.448	1.015	.491
Suicide	.733	.182	.898	.414
Suicide + Undetermined	.736	.187	.890	.416
Homicide	.729	.930	.961	.573
Other Accidents/Violence	.710	.270	.919	.314
Residual Causes	.813	.422	.926	.460
Total SMR	.820	.381	.909	.416
CDR per 1000	15.75	14.75	2.34	1.95

Note: Total populations included in the computations of the ISDRs.

APPENDIX G: CRUDE AND DIRECTLY STANDARDIZED DEATH RATES (PER 100,000) FOR THE CANADIAN BORN, OLD AND NEW WAVE IMMIGRANTS; FOUR BROAD CAUSES OF DEATH

Table G(a): Crude Death Rates (per 100,000)

	Canadian Born		Old Wave		New Wave	
Cause of Death	Males	Females	Males	Females	Males	Females
Heart Disease	204.35	163.70	481.98	458.36	62.35	47.41
Cancer	202.89	164.06	449.79	341.26	63.43	52.92
External	69.71	28.09	73.80	55.92	22.01	11.66
Other	248.12	228.06	563.68	619.43	82.30	76.79
Total	725.00	584.00	1575.00	1475.00	234.00	195.00

TABLE G(b): Directly Standardized Mortality Rates (per 100,000)

	Canadian Born		Old Wave		New Wave	
Cause of Death	Males	Females	Males	Females	Males	Females
Heart Disease	242.39	136.80	194.64	118.14	96.20	55.25
Cancer	231.94	148.26	198.20	130.31	90.31	56.74
External	72.10	26.32	50.71	21.50	22.74	11.57
Other	301.40	199.75	230.74	166.76	129.61	89.72

Total	847.83	511.13	674.29	436.71	338.86	213.28

*The Canadian Population is the standard population. The standard weights applied are: <15 = .2416; 15-19 = .0753; 20-24 = .0751; 25-29 = .0883; 30-34 = .0927; 35-39 = .0821; 40-44 = .0710; 45-49 = .0550; 50-54 = .0437; 55-59 = .0403; 60-64 = .0386; 65-69 = .0345; 70-74 = .0275; 75-79 = .0199; 80-84 = .0098; 85+ = .0048.

APPENDIX H: DISTRIBUTIONS OF DEATHS (1990-92) AND 1991 CENSUS POPULATIONS FOR THREE BROAD CLASSES OF NATIVITY.

This Appendix consists of the table below, and eight graphs. The table displays the distribution of deaths by nativity and four broad causes of death for the Canadian Born, the Old Wave and the New Wave immigrants. The deaths are for the three-year period 1990-92. The population is from the 1991 census. As can be seen from the table, the vast majority of deaths belong to the Canadian Born population (about 75%). Only about two per cent of general and cause-specific deaths are New Wave immigrants. In total, Heart Disease accounts for 29 per cent of all deaths in Canada, followed by another 28 per cent attributable to Cancer. External conditions represent about 8 per cent of total deaths. The population of these nativity groups is distributed in a similar fashion. Approximately 80 per cent of the total population of Canada are Canadian Born. Of the approximately 17 per cent that is foreign born, about 10 per cent is Old Wave, and just under 7 per cent New Wave.

Table I 1: Distribution of Deaths During 1990-92 by Four Broad Causes of Death and 1991 Population; Three Nativity Groups (Ages 15 and Older)

	Canadian Born	Old Wave Immigrants	New Wave Immigrants	Total
Heart Disease	%	%	%	N
Males	75.9	22.2	1.9	90,313
Females	72.5	25.8	1.7	77,361
Total	74.3	23.9	1.8	167,674

Cancer				
Males	76.8	21.2	2.0	88,512
Females	77.5	20.5	2.1	72,543
Total	77.1	20.9	2.0	161,055
External				
Males	86.4	11.4	2.2	27,059
Females	79.4	17.9	2.7	12,106
Total	84.2	13.4	2.4	39,165
Other Causes				
Males	76.4	21.6	2.1	108,939
Females	72.8	25.1	2.0	107,247
Total	74.6	23.3	2.1	216,186
Total Deaths				
Males	77.2	20.8	2.0	314,822
Females	74.3	23.7	2.0	269,257
Total	75.9	22.1	2.0	584,079
Population 15+				
Males	82.9	10.3	6.8	13,485,235
Females	82.7	10.5	6.8	13,811,626
Total	82.8	10.4	6.8	27,296,861

It is interesting to note that the four broad causes of death do not follow a uniform age pattern of distribution. For instance, proportionately, there are few incidences of heart disease and cancer mortality in the ages below 40. Most deaths due to heart disease and

cancer are heavily concentrated in the post-retirement ages. External deaths follow a very different distribution over age. In this case there is a heavy concentration of deaths in the ages between 15 and 40, which reduces gradually thereafter. Except for the presence of a gentle rise in the older ages, External types of deaths for females tend to represent a generally "flat" distribution across age. Concerning nativity, the most noticeable differential is with regard to Old Wave immigrants. They consistently show, irrespective of gender, a pronounced rise in the percentage of cause-specific mortality in the oldest ages. Since the percentage distribution of deaths for any population is strongly related to population composition, it is clear that this tendency in the Old Wave immigrant is largely a reflection of their much older population structure as compared to the Canadian Born and the New Wave migrants. It is for this reason that age-specific death rates are computed, and further, age standardization when comparing mortality across populations.

Graphs are not available electronically.

Hard copies are available upon request.

APPENDIX I: MORTALITY IN THE AGES 0-14

Below, deaths for 0-14 year olds were classified into three categories: complications of the heart, accidents/violence, and other causes. This was necessary due to the relatively few numbers of deaths in this age range. Deaths in the early years of life are unevenly distributed. The rate of death (per 1000) is highest in infancy. Group-specific geometric means follow an expected rank order, as noted in connection with adult mortality: Canadian born have the highest risk, followed by the Old Wave and New Wave immigrants.

	Canadian Born		Old Wave		New Wave	
Cause	Male	Female	Male	Female	Male	Female
Complication of the Heart	.10	.09	.00	.08	.00	.04
Accidents/Violence	1.44	.88	1.08	.38	.52	.21
Other Causes	6.31	5.18	.87	.91	.42	.60
Total	*7.923*	*6.150*	*1.950*	*1.370*	*0.940*	*0.850*

In the multivariate analysis below, males are at a higher risk of dying. As far as the three causes of death are concerned, complications of the heart are relative rare in this age range, while accidents and violence and "other" causes are more fruequent. Looking at the interaction effects, New Wave immigrants share a greater risk of death from complications of the heart than either Old Wave and Canadian born. However, in the remaining two interactions, the risk is lowest for the New Wave.

Table I 1: Log-Linear Equations; Mortality in the Ages 0-14

Effects	(1)	(2)	(3)	(4)
Intercept	-10.10194	-10.29637	-10.33167	-10.45521
Canadian Born	1.166*	.624*	.624*	.411*
Old Wave	-.275*	-.035	-.035	.100
(New Wave)	-.891*	.589*	.589*	-.511*
Age 0		2.132*	2.131*	2.132*
1-4		-.817*	-.817*	-.817*
(5-14)		-1.315*	-1.315*	-1.315*
Male		.116*	.112*	.116*
(Female)		-.116*	-.112*	-.116*
Cause 1: Complication of the Heart			-2.203*	-2.141*
Cause 2: Accidents/Violence			.311*	.722*
(Cause 3): (Other Causes)			1.892*	1.419*
Cause 1 x Canadian Born				-.061
Cause 1 x Old Wave				-.420*
Cause 1 x (New Wave)				.481*
Cause 2 x Canadian Born				.083
Cause 2 x Old Wave				.215
Cause 2 x (New Wave)				-.298
Cause 3 x Canadian Born				-.022
Cause 3 x Old Wave				.205
(Cause 3) x (New Wave)				-.183
L^2M/ df	44177.72/ 51	16971.50/ 48	3611.57/ 46	3573.57/ 42
Pseudo R^2	.38	.92	.96	.98

* p< .05