

Ethnicity and health in Suriname

Abstract

Suriname is a New World country that became independent of the Netherlands in 1975. It has a diverse population of around 600,000 people reflecting its migrant history particularly the slave trade that provided workers for the plantations. The main ethnic groups are creoles (slaves brought from Africa), maroons (runaway slaves), Hindustani, Javanese (contract labourers), Chinese and Amerindians. Important differences have been demonstrated in epidemiology and pathology of health issues such as cardiovascular disease, infections and obstetrics. Research studies are needed in each ethnic group for a tailor-made approach as results cannot be extrapolated. Ethnic profiling is important to achieve equity in health.

Introduction

We visited Suriname in April 2024 and contributed to under- and postgraduate education in paediatrics, internal medicine and parasitology at the Academic Hospital in Paramaribo and the Anton de Kom Faculty of Medical Sciences. Suriname is a middle-income country with a population of 616,500, with mean age 33 years; it covers 164 square km, and it has a GDP of 14,540 USD per person. The population is a unique mix of people from various ethnic backgrounds. People are invariably friendly and polite; the country has ample natural beauty both in coastal areas, along the rivers, and in the interior that is continuous with the Amazon forest. The architecture in Paramaribo is famous for the wooden buildings.

Suriname became independent from the Netherlands in 1975 and I did my senior clerkship in obstetrics and gynaecology in the Diaconessenhuis (hospital) in 1978. While I was already hooked on internal medicine, it did spark my interest and commitment of pursuing a career in tropical medicine, with the challenges to work in resource-restricted settings, to contribute to health care for those who need it most and to work with the diversity of pathology, both in a general (global) setting and more local settings, such as Suriname.

Ethnic groups

The ethnic breakdown of the population of Suriname is summarized in Table 1. It is not surprising that the slave trade from Africa from the 16th century to its abolition in 1814 played a major role; plantations were run to produce sugar, coffee and tea, among other, and a strong and large labour force was needed. The suffering of those affected in this historically unsurpassed breach of human rights, degradation and humiliation is beyond imagination. After the abolition of slave trade, contract workers were brought in from Java, the Indian subcontinent and lived together with spontaneous immigrants such as Chinese, Europeans and other groups to form the typical Surinamese mixed culture. (Table 1). Some of the ethnic groups such as the Javanese, Hindustani, Chinese and Amerindians have largely preserved their ethnic identity.

The Jewish community deserves a special mention here as in the context of the diaspora, a large Sefardic (Portuguese) Jewish community arrived from 1635 expecting better living conditions under a protestant colonizer and settled along the Surinam River in the so-called Jodensavanne (Jewish Savanna). A synagogue was built here in 1685. This isolated settlement of planters was very successful and essentially ran its own affairs in terms of administration, security and education; it

was no surprise that after World War II the Jodensavanne was one of the options for founding a new Jewish state which was established later in Palestine and became Israel.

What are the implications of the ethnic diversity for health in Suriname? This has been the subject of research in, among other, the epidemiology of cardiovascular disease (hypertension, heart failure), diabetes mellitus, metabolic syndrome, infection (tuberculosis) and obstetrics. (Table 2)

Ethnic group	When arrived, from where	Number, occupation	Details	% *
Hindustani	1868-1916: recruited from British India	34,000 arrived	Largest population group in people count 2014	27%
Maroons	Runaway slaves (literally "runaway cattle"), settled in the jungle	Founded their own communities in the jungle	Re-instated rites and traditions from Africa	22%
Creoles and Africans	1651-1825: brought by force and under cruel conditions from Africa	250,000 arrived	Forced to work on plantations as slaves	16%
Javanese	1890-1939: arrived from Java as contract labourers	33,000 worked in agriculture and cultivation of rice	Still live in closed communities on former plantations	14%
Mixed	All immigrants including also Haitians and Guyanese mixed with other ethnic groups	Widespread	Unique for Surinam: mixture of culture and folklore (festivities, food, music)	13%
Indigenous population (Amerindians)	Tribes: Trio, Wayana, Arowaks, Caraïbes	Live far in deep jungle (traditional) or in coastal areas (partly westernized)	Original inhabitants	4%
Chinese	From 1953; contract labourers from Java; later free immigrants also from Macao, Hong Kong and Kanton	Urban areas Run shops and supermarkets	Large influence on social society	1%
Boeroes	From 1845; immigrants from the Netherlands	Ran plantations without slave labour	Successful in farming and obtaining high offices	<1%
Libanese	From 1890	Total of 500; retail and textile shops		<1%
Brazilians	A suburb of Paramaribo is called "little Belem"	20,000 - 40,000	From 1990 "garimpaieros" – gold diggers; live inland	<1%
Europeans	16 th - 19 th century; various nationalities, ran plantations	> 700 plantations in northern part	Aimed to run Surinam as colony for home country	<1%

Table 1. Breakdown of Surinamese population by ethnic group, principal characteristics and percentage of total. Source: Fort New Amsterdam, Commewijne District, Suriname

* % of total population [1]

Implications of ethnicity for health - the example of hypertension

Among cardiovascular diseases, hypertension has higher prevalence among adults from African descent followed those of Asian or Hispanic background, compared to Caucasians.[2] In Suriname, cardiovascular disease is the main cause of mortality in each ethnic group. [3]. Historical data from 1973 indicate that in a sample of 243 people (55% of African ancestry) 44% had hypertension and 13% diabetes; 52% had ever smoked.[4].

More recent studies, carried out in Suriname, showed that prevalence of hypertension (26% in 5748 people examined) was in range with developing countries, while there was variation within ethnic groups; it was more common in Creoles, Hindustani and Javanese while it was lowest among Amerindians, Maroons and Mixed.[5] Even more worryingly, half of those diagnosed with hypertension was not diagnosed previously and only a quarter was treated effectively.[5] But it is not only the awareness, prevalence, compliance or drug availability that determines outcome efficacy; Amerindians have highest efficacy of treatment while this is lowest for Maroons suggesting an ethnic specific approach for treatment of hypertension that may include selection of drugs and determining a cut-off point to start treatment.[5]

Health literacy is an independent risk factor for cardiovascular disease; individuals who are female, have low education level and who live in a rural setting have lowest health literacy which needs to be taken into account while delivering health care.[6]

Explanations vary

Table 2 indicates that Hindustani have highest risk of cardiovascular disease, including hypertension (together with Creoles and Javanese), ischaemic heart disease, diabetes mellitus and metabolic syndrome which is in line with data from Asia.

Another interesting finding is the difference in hypertension between creoles and maroons; while both are from African descent and share biological characteristics, creoles live predominantly in urban coastal areas (86%) vs 14% in rural areas with higher levels of education and income, while for Maroons the geographical distribution is equal with lower levels of income and education, suggesting that demographic, life style and anthropometric factors associated with living under urban conditions may be important (fast food, sedentary work, smoking).

For tuberculosis the high prevalence among Amerindians may reflect late presentation because of poor access to care; undiagnosed and untreated patients may facilitate spread in the community.

Yet other explanations need to be considered in the obstetric studies, where the difference in caesarean section rate may be explained by local hospital practices while the high stillbirth rate among Maroons (only Haïti has a higher rate in the region) is still unexplained.

Also, in obstetrics ethnic differences exist that need clarification; for example, Maroons had the highest stillbirth rate and Javanese women the lowest; the caesarean section rate was 24% and highest in Hindustani women (32%) and lowest in Maroons (17%). [7]

The need for ethnic profiling

In daily life, ethnic profiling makes us feel uneasy and often causes feelings of discrimination. However, it is important to understand what ethnic diversity means for health care delivery. Epidemiological research helps to understand where the differences in prevalence are and the underlying risk factors; from there targeted interventions may be initiated.

Similarly, there may be a difference in response to treatment between ethnic groups for the same condition within the region or globally; this may result in variable efficacy and adverse drug reactions. Pharmacogenomics is the study of how genes determine the response to drugs; this applies to individuals in the same population as well as on a global scale. There are many studies that report on these differences, between for example, Asian, African or Latin-American populations including those of mixed background.[8-11] It follows that extrapolation of drug response from one

population to another (region, ethnic group, minority) should be done with caution and introduction of any new treatment should ideally be based on locally performed research.

It is important to note that the study of epidemiology of disease among ethnic groups and the principles of pharmacogenomics form the basis of equity in health.[12]

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Health topic [ref]	How studied	Main Outcome	Interpretation
Hypertension [13]	5641 patients from Suriname Health study (SuHS)	Overall 26% Creoles, Hindustani, Javanese: most common Amerindians, Maroons, Mixed: lowest	Demographic, lifestyle and anthropometric factors associated with living under urban conditions may be important (fast food, sedentary work, smoking)
Heart failure [14]	Cross-sectional in 889 admitted patients (Suriname Heart Failure Study - SUHF-I study)	Ischaemic Heart Disease Asian 52% African descent 12% Hypertensive Heart Disease Asian 11% African descent 39%	Risk factors are common: <ul style="list-style-type: none"> • hypertension (63%) • diabetes mellitus (39%) • smoking (17%)
Diabetes mellitus [15]	3393 patients from Suriname Health Study (SuHS)	Prevalence of pre-diabetes 7.4% diabetes 13% Hindustani 23% Other ethnic groups 4.7-14.2%	Association of BMI with pre-diabetes or diabetes, that occurred at lower BMI values in Creole and Hindustani people compared to Javanese and Mixed people.
Metabolic Syndrome [16]	2946 patients from Suriname Health Study (SuHS)	Prevalence Overall 39% Hindustani 53% Maroons 24%	Risk factors Female sex, low income, poor living conditions, married status
Tuberculosis [17]	662 patients extracted from TB registry	Prevalence <ul style="list-style-type: none"> • Amerindians 280/100,000 • Creole 271/100,000 • Hindustani 69/100,000 	Risk factors <ul style="list-style-type: none"> • live in remote, rural areas with poor access to health services, low socio-economic status • live in urban areas, HIV infection (38% HIV+ve) • live in rural areas
Caesarean rate [7]	18290 births analysed from nationwide birth registry study	Overall 24% Hindustani 32% Maroons 17%	May partly reflect ethnic distributions between hospitals
Stillbirth rate [7]		Overall 15% Maroons 25/1000 births Javanese 6/1000 births	Stillbirth rate is second highest of the region, causes unknown

Table 2. Selected studies in various health topics that show variation among ethnic groups



Figure 1. Fort New Amsterdam is strategically located at the confluence of the Suriname and the Commewijne rivers. Photo credit: Nationaal Archief Suriname. (<https://nationaalarchief.sr/erfgoed-en-slavernij/fort-nieuw-amsterdam>)

Figure 2. Typical wooden architecture of a colonial style house in Paramaribo, now the Ministry of Social affairs and Public Housing.



Upper: before renovation. Photo credit: Daily Krijnen (2023)



Lower: after renovation. Photo credit: Rotterdam Center for Tropical Medicine (2024)