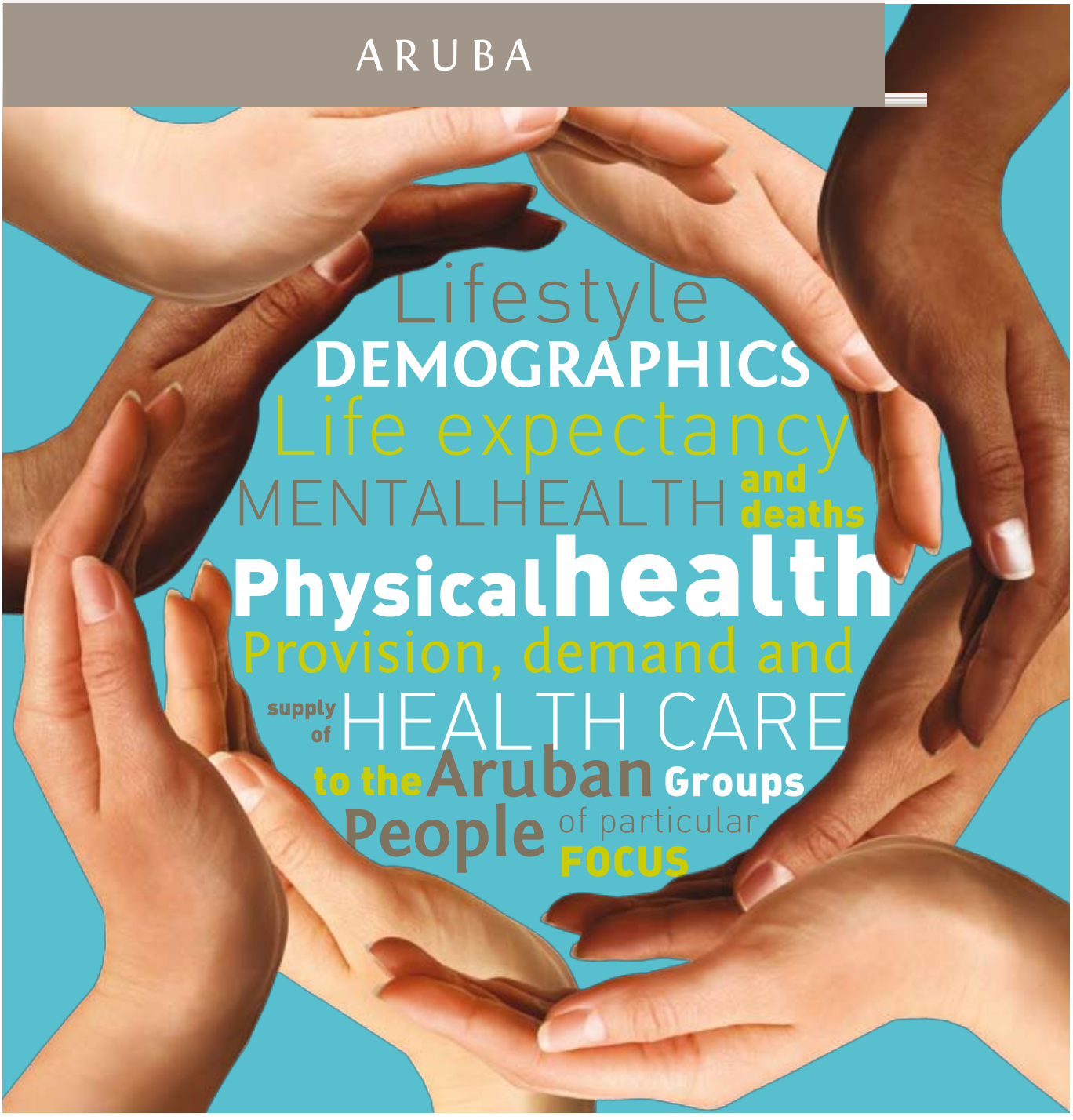
Ministry *of* Public Health
and Sports

Health monitor

2013

ARUBA



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PREFACE

It is with great pleasure that as the Minister of Health and Sports I can present to you the very first edition of the Health Monitor 2013 Aruba.

We are living in an age where the overall wellbeing of our citizens and the economy of the nation are being challenged by the effects of chronic diseases, reemerging infectious diseases, and rising health care costs among other factors. In order to be able to address these issues responsibly and effectively and to develop "healthy" policies and programs it is therefore critical not only to have a mechanism in place that systematically monitors the health status and behavior of the population but also to present these in an overview.

The Health Monitor 2013 has been developed having the above in mind and following the strategic direction mentioned in the "Kaderbrief Publieke Gezondheid 2011-2013" which states the need for an overview of health data and information that will assist the decision-making process regarding healthcare in general and also the development of health policies. This document will be published every four years and will provide invaluable information regarding factors associated with the health of our inhabitants such as lifestyle, health care, health care providers, mental health and the social environment.

The health gains acquired by the various applied health policies and preventive programs will be visible by upcoming publications of this Health Monitor. However the measurement of health gains and progress obviously varies by subject. It is of utmost importance to monitor the trend of the health of the Aruban population in time.

This publication has been coordinated by the Epidemiology and Research unit of the Department of Public Health in cooperation with the Ministry of Health and also with the valuable contribution of the different representatives of the various units and services within the Department of Public Health, Central Bureau of Statistics (CBS) and the National Health Insurance (AZV). I am grateful for everyone's participation in this magnificent publication.

I would encourage all organizations whether they are governmental or private to use this document not only as a basis for prioritizing and making the right choices regarding health policies and programs, but also as a compass for rational planning, implementation, and intervention regarding the prevention and control of disease and injury.

Dr. Richard Visser
Minister of Public Health and Sports

INTRODUCTION

In front of you lies the first Health Monitor for Aruba. This Health Monitor will be published every 4 years and will give an overall impression of the health of the Aruban population.

This monitor not only provides vital information about the physical health and lifestyle of the total population, but it also gives you an overview of the health and/or risk behavior of specific population groups.

Aruba has known a rapid economic development which brought all types of influences from around the world, together with the phenomenon of globalization. The same as in many countries worldwide, these developments had their positive influence on health with its scientific and technical advances for earlier detection of diseases or improving care. But on the other hand it also had its negative influence on the health of the population. With the introduction of fast food chains, a considerable growth in tourism among other factors, Aruba has been exposed to all types of cultures, norms and values and consequently a drastic change in lifestyle. As a result Aruba faces an overweight epidemic that has been in development for the past 10 years and continues to maintain its course. Infectious diseases that were forgotten have been reemerging. Not to mention the pressure of this development on the mental health of the Aruban population.

This Health Monitor represents a valuable tool which will give the necessary information and guidance in order to prioritize processes for effective policy development at the Department of Public Health but also to provide guidance to other Governmental departments and services.

The Department of Public Health has developed a strategic policy for Health Promotion 2011-2015; From facts to actions. Hereby the Department of Public Health aims mainly at using population targeted prevention strategies to minimize the risk factors the Aruban population is exposed to which stimulates the development of e.g. non-communicable diseases. The information provided in the Health Monitor underscores the strategies developed in this document and the decision of the Department of Public Health to focus on targeted prevention.

DESPA

MANAGEMENT TEAM
DEPARTMENT OF PUBLIC HEALTH ARUBA, 2013

ACKNOWLEDGEMENT

The Department of Public Health of Aruba would like to thank the steering committee, the work group and all who were involved in the development of this Health Monitor Aruba 2013. Without the support and motivation for realizing this publication, it would not have been achievable.

Also the Ministry of Health and Sports who believed in the capacities of both committees for the development of this document, which is the first one ever developed and published.

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LIST OF ABBREVIATIONS

AIDS	:	Acquired Immunodeficiency Syndrome
AMIS	:	Aruba Migration and Integration Survey
AZV	:	Algemene Ziektekosten Verzekering
BMI	:	Body Mass Index
CA	:	Cancer
CBDB	:	Coördinatie Bureau Drugsbestrijding
CDC	:	Centre of Disease Control
CVD	:	Cerebrovascular heart disease
DALY's	:	Disability-adjusted Years of Life
DEN	:	Dengue
DOW	:	Dienst Openbare Wegen
DP	:	Diphtheria and Polio Vaccine
DPH	:	Department of Public Health
DPT	:	Diphtheria, Polio, Tetanus
DPTP	:	Diphtheria, Polio, Tetanus and Pertusis vaccine
EU	:	European Union
FCSW	:	Female Commercial Sex Workers
g	:	grams
GDP	:	Gross Domestic Product
GP	:	General Physicians
HBV	:	Hepatitis B virus
Hep B	:	Hepatitis B
HIB	:	Hemophilus Influenza B type vaccine
HIV	:	Human Immunodeficiency Virus
IARC	:	International Agency for the Research on Cancer
ICD-10	:	International Statistical Classification for Diseases and Related Health Problems; 10th revision
IHD	:	Ischemic Heart Disease
IPV	:	Polio vaccine
LBW	:	Low Birth Weight
MAVO	:	Middelbaar Algemeen Voortgezet Onderwijs
MMR	:	Measles, Mumps and Rubella vaccine
PAAZ	:	Psychiatrische Afdeling Algemeen Ziekenhuis
PAHO	:	Pan American Health Organization
PCV	:	Pneumococcal conjugate vaccine
PEP	:	Post exposure Prophylaxis
PLHIV	:	People Living with HIV
PYLL	:	Potential Years of Life Lost
SPD	:	Sociaal Psychiatrische Dienst
STI's	:	Sexual Transmitted Infections
ULBW	:	Ultra Low Birth Rate
USA	:	United States of America
VLBW	:	Very Low Birth Weight
WHO	:	World Health Organization
WYC	:	White Yellow Cross
YDC	:	Youth Dental Care

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1. DEMOGRAPHICS

1.1 THE POPULATION OF ARUBA BY AGE AND SEX

On December 31st 2011, the population of Aruba consisted of 103,504 inhabitants, of which 49,075 (47.4%) were male and 54,429 (52.6%) female. Aruba is a densely populated island with an average of 575 persons per km2, the majority living on the northern side of the island (see Figure 1).

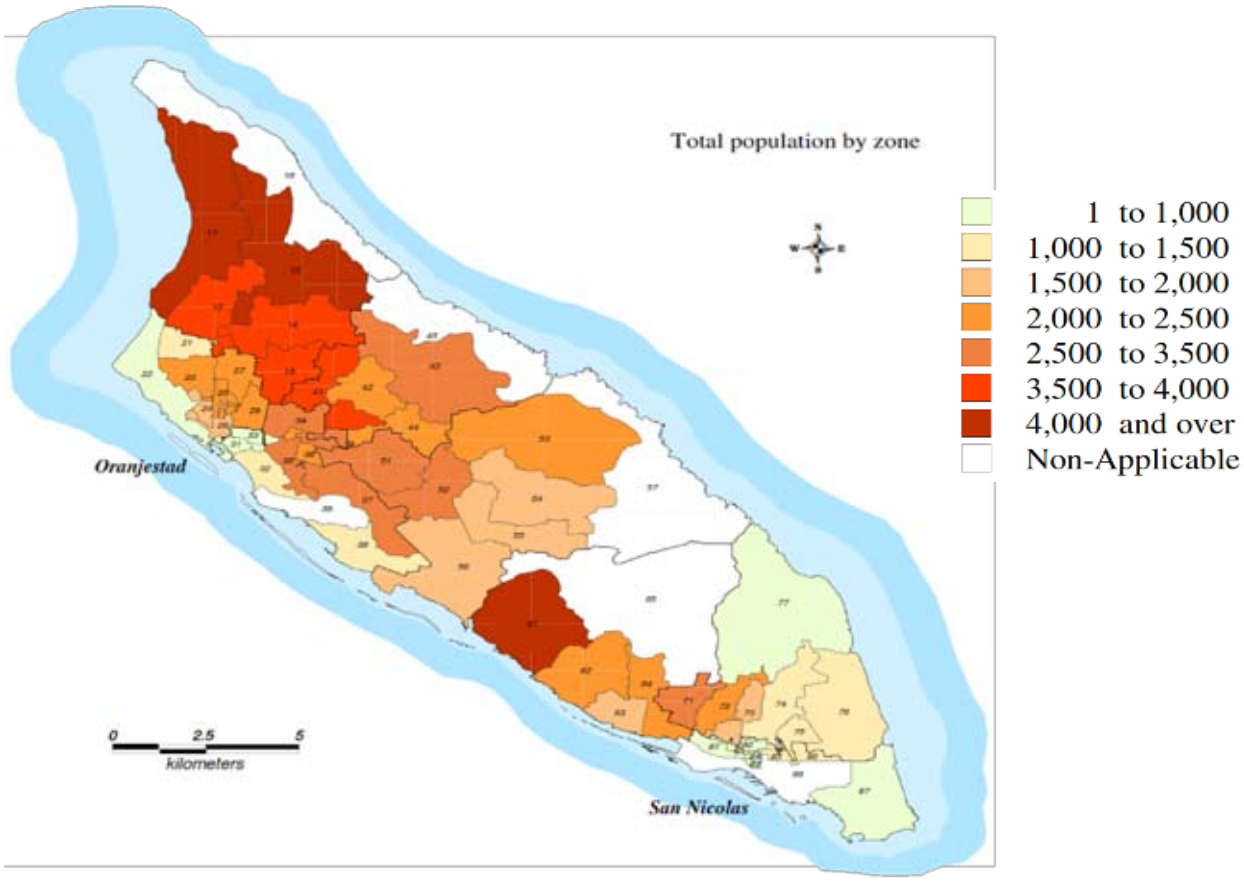


FIGURE 1. POPULATION DENSITY ARUBA, 2011.

The age composition of the population of Aruba shows a binominal distribution. The largest segment of the population consists of inhabitants between 5 and 19 years of age and inhabitants between 40 and 54 years of age. Between these two segments a significant gap is formed, in particular, by a lack of inhabitants between ages 20 and 34 years (see Figure 2). The marked lack of women in the childbearing ages will almost certainly impact the number of newborns in the years to come, following the national and global trend of a declining fertility rate.

On the other hand, the proportion of 65+ in the population of Aruba has been rising rapidly. According to the 2010 Census, 10.4 percent of the population is 65+, compared to 7.3 percent in the year 2000, an increase of 45.2 percent.

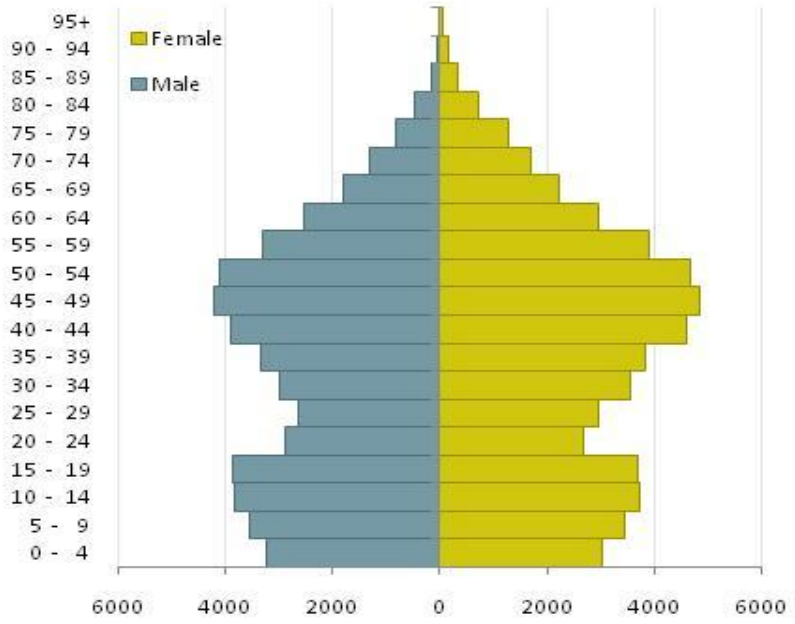


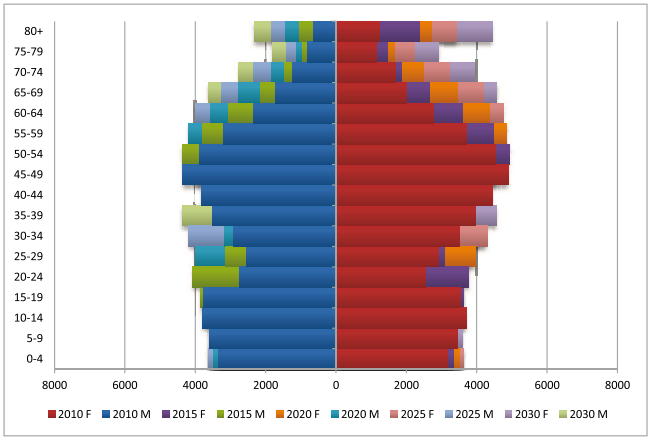
FIGURE 2. POPULATION PYRAMID OF THE POPULATION OF ARUBA, 2011.

1.2 POPULATION PROJECTIONS

With fairly constant levels of fertility and mortality, population dynamics in Aruba are largely dependent on levels of immigration and emigration, which are linked to the performance of the local economy. Based on 2010 Census data, information about key economic parameters provided by the Department of Economic Affairs, Trade and Industry, and migration characteristics retrieved from the 2003 Aruba Migration and Integration Survey (AMIS), three scenarios were created by the Central Bureau of Statistics for a twenty-year period (2010-2030) with four five-year progressions: a low scenario, a medium scenario, and a high scenario (see Figure 3 A, B & C).

The three scenarios show two important trends. Firstly, the aging of the population will continue at a quick pace during the next twenty years, having serious consequences for the Aruban society in the next twenty years. More and more people will be using services that are geared towards the elderly, the number of persons with chronic diseases will grow rapidly, as the prevalence of many of these diseases is higher among the elderly, and pension schemes will have to deal with more and more persons who reach retirement age.

A



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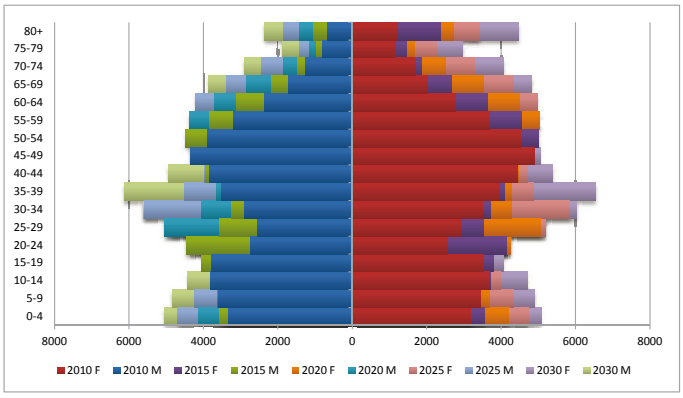

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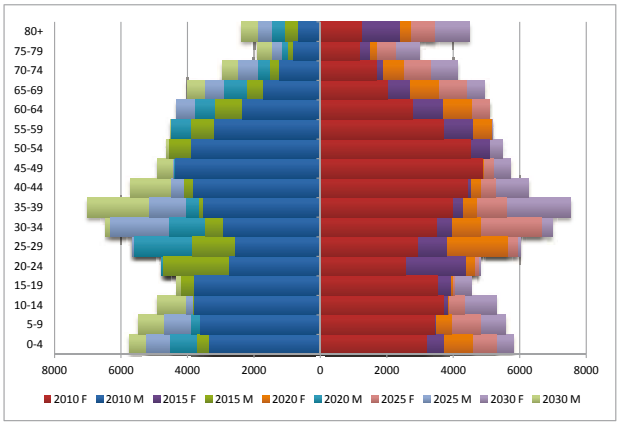


FIGURE 3. POPULATION PROJECTIONS, 2010-2030: A. LOW SCENARIO; B. MEDIUM SCENARIO; C. HIGH SCENARIO

Secondly, because of the aging of the population of Aruba and the consistent low levels of fertility, an insufficient number of local laborers will be available to fill all the positions created by a growing economy. A moderate to rapid growth of real GDP will lead to a high demand of laborers and consequently to high levels of immigration.

1.3 LEVEL OF EDUCATION

The school participation rate in Aruba is high and has been that way for decades (see Table 1.). However, after completing secondary education, a significant number of young adults leave the island to continue their studies abroad. Only a few return to the island after obtaining their diploma. This may be the reason why, according to data gathered during the 2010 Census, 69.1 percent of the population of Aruba 14 years and older did not attend school and has a lower secondary education, MAVO level or lower (see figure 4).

Females between 14 and 34 years of age are the most educated group of people in Aruba, with 27.2 percent having an education at an intermediate level and 14.3 percent having a higher education.

Year	Age (years)	Male (%)	Females (%) 1991
1991	0-5	55	56.2
	6-11	99	99
	12-17	93.4	92.9
	18+	3.7	3.3
2000	0-5	57.9	56.3
	6-11	98.3	98.1
	12-17	94.5	94.4
	18+	4.2	4.6
2010	0-5	64.0	64.8
	6-11	98.7	98.9
	12-17	95.7	96.4
	18+	5.5	5.7

TABLE 1, SCHOOL PARTICIPATION RATE OF THE POPULATION OF ARUBA BY AGE CATEGORY AND SEX, ARUBA 1991-2010.

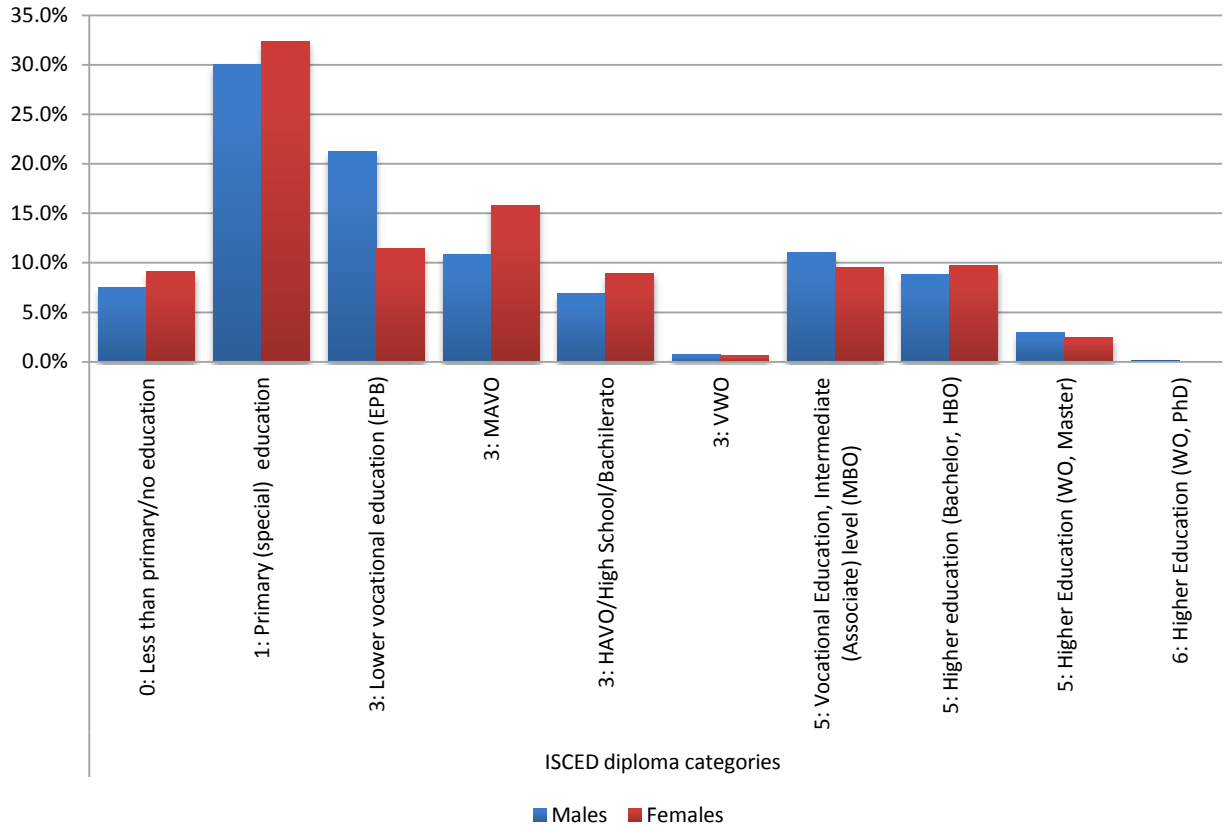


FIGURE 4 LEVEL OF EDUCATION ATTAINMENT OF THE POPULATION OF ARUBA NOT ATTENDING SCHOOL BY SEX, 2010.

1.4 HOUSEHOLD COMPOSITION

Households in Aruba consist, on average, of 2.9 persons. Large households consisting of 5 persons or more are in the minority, representing less than 15 percent (14.8 percent) of the total number of non-collective households. The majority of persons live in a nuclear household (46 percent), composed in most cases of a married couple with children (22 percent, see Figure 5). In total, 62.6 percent of children (up to 17 years of age) live with both parents.

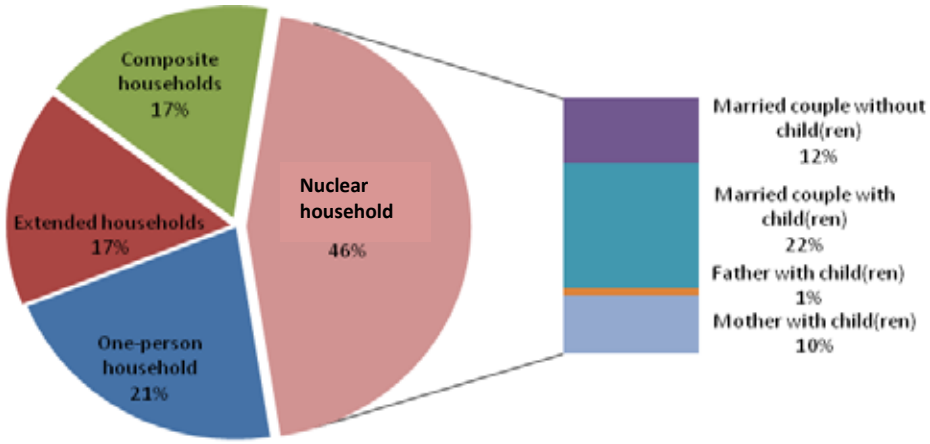


FIGURE 5. PERCENTAGE OF THE POPULATION BY TYPE OF (NON-COLLECTIVE) HOUSEHOLD.

As age increases, the type of household persons live in, is subject to important changes. The proportion of the population living in a one-person household increases dramatically as age increases, as well as the proportion of the population living in extended households.

Compared to a decade ago, the composition of households in Aruba has changed significantly:
- the size of households has decreased from an average of 3.1 persons to an average of 2.9 persons per household
- the share of one person households has increased from 19 percent in 2000 to 21 percent in 2010
- the share of married couples with children has decreased from 26 percent in 2000, to 22 percent in 2010
- there are more mothers with children
- there are more fathers with children.

1.5 EMPLOYED/NOT EMPLOYED POPULATION

In total, in 2010, 58.2 percent of the population of Aruba (15 years and older) was employed, 6.9 percent was unemployed and 34.9 percent was inactive. It is important to mention that, in 2010, there were more females in the labor market than males (n=22,761 and n=22,676, respectively, see Figure 6).

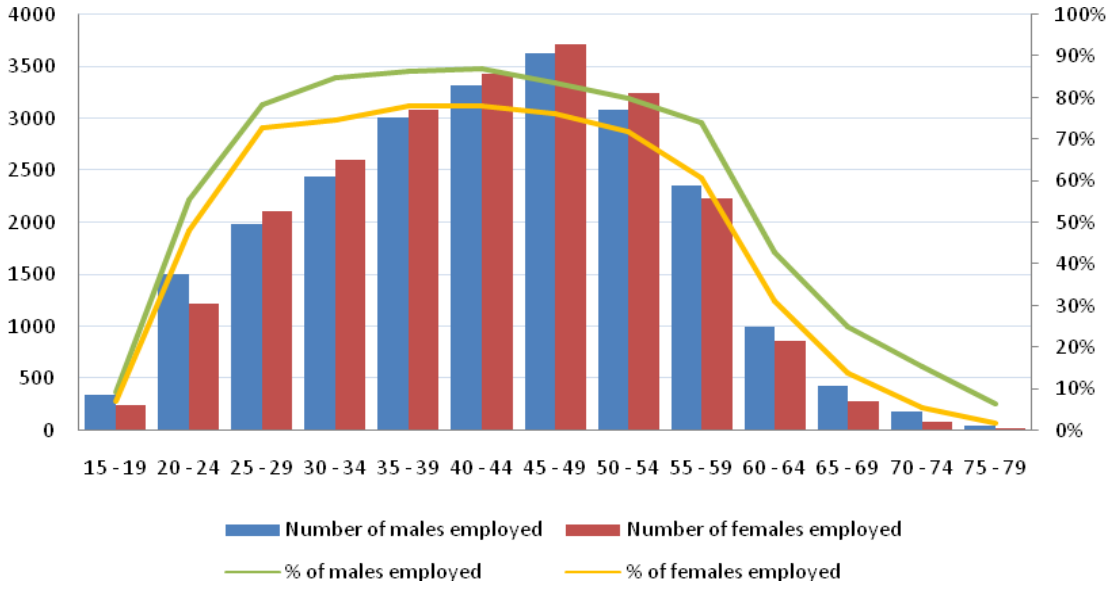


FIGURE 6. EMPLOYED POPULATION BY AGE AND SEX, 2010.

The top five sectors employing persons in Aruba were, in order of importance: hotels and restaurants, trade, public administration, real estate, and construction, employing respectively 20.6 percent, 16.2 percent, 9.9 percent, 9.1 percent and 8.3 percent of the employed population.

1.6 IMMIGRATION/EMIGRATION

In 2010, 34 percent of the population of Aruba was foreign-born. The percentage of foreign-born was highest in the population of working age 15 to 64 years, 41.6 percent. Between ages 35 and 44 years more than 50 percent (53.9 percent) of the population of Aruba was foreign-born (see Figure 7).

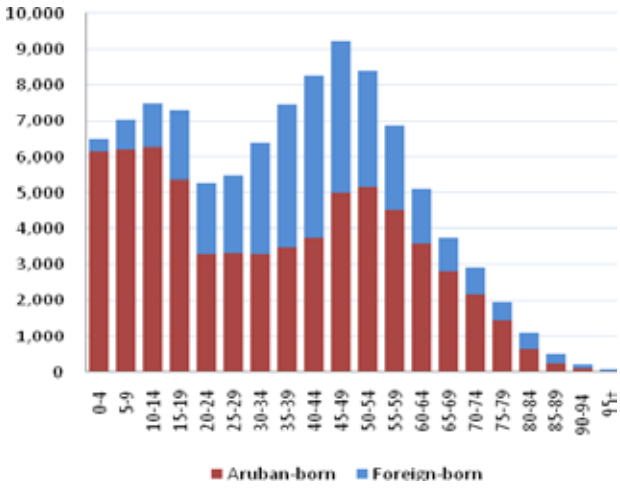


FIGURE 7. THE ARUBAN- AND FOREIGN-BORN POPULATION BY AGE, 2010.

On the other hand, the percentage foreign born was relatively low in the young and in the elderly. In children up to 14 years of age, 11.4 percent was foreign-born. In the group of 65 years and older, 28.8 percent was foreign-born.

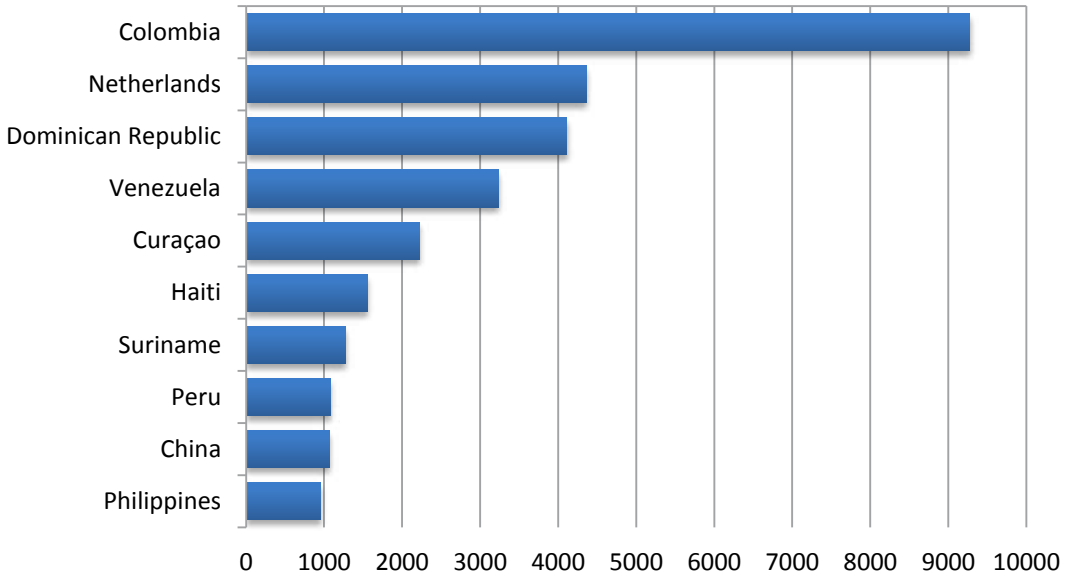


FIGURE 8. FOREIGN-BORN POPULATION (TOP 10 COUNTRIES), 2010.

The foreign-born population consisted primarily of persons born in Colombia, who represented 26.9 percent of the foreign-born population, persons born in the Netherlands (12.7 percent), and persons born in the Dominican Republic (11.9 percent; see Figure 8).

In ten years (2000 to 2010), the percentage of persons born in China and in Haiti increased the most, with 68 percent (n=1,071) and 52 percent (n=1,551), respectively, whereas persons born in Colombia increased the most in numbers (with 2088 persons). In 2010, 52.2 percent of foreign-born persons had a Dutch nationality.

2

2. LIFE EXPECTANCY AND DEATHS

2.1 LIFE EXPECTANCY

Life expectancy is the average number of years a person is expected to live. It is a good indicator of the standard of living in a country and of the overall health of the inhabitants. Important societal changes combined with significant advances in medicine, improved access to health care services, better access to clean water and better hygiene have contributed to a dramatic increase in life expectancy, worldwide.

2.1.1 LIFE EXPECTANCY AT BIRTH

The life expectancy at birth reflects the overall mortality level of a population. In 2009, the global life expectancy at birth was 68 years, 57 years in low-income countries and 80 years in high income countries. In Aruba, in 2010, the life expectancy at birth was 76.9 years. Females were expected to live 6.1 years longer than males, living to become 79.8 years, compared to 73.9 years in males, Figure 9 illustrates that with increasing age, the difference in life expectancy between males and females showed a gradual decrease.

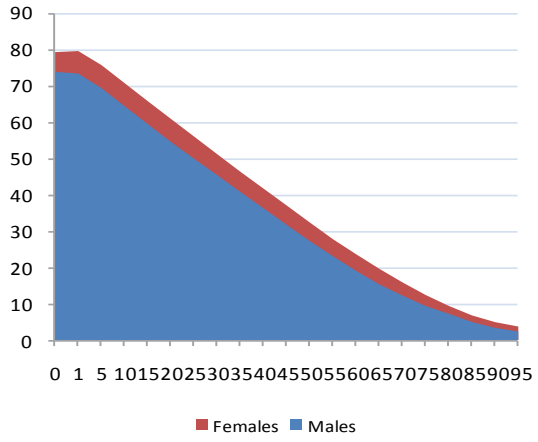


FIGURE 9. LIFE EXPECTANCY BY AGE AND SEX, 2010.

Since the 1960's when the life expectancy was first computed for Aruba, it has known a steady increase until the end of the 20th century and the beginning of the 21st century, when the life expectancy in Aruba dropped with a year.

From 2005 to 2010, the life expectancy increased with nearly two years to 76.9 years. The life expectancy in Aruba is higher as compared to in the Caribbean and is comparable to the life expectancy in more developed regions of the world, see figure 10.

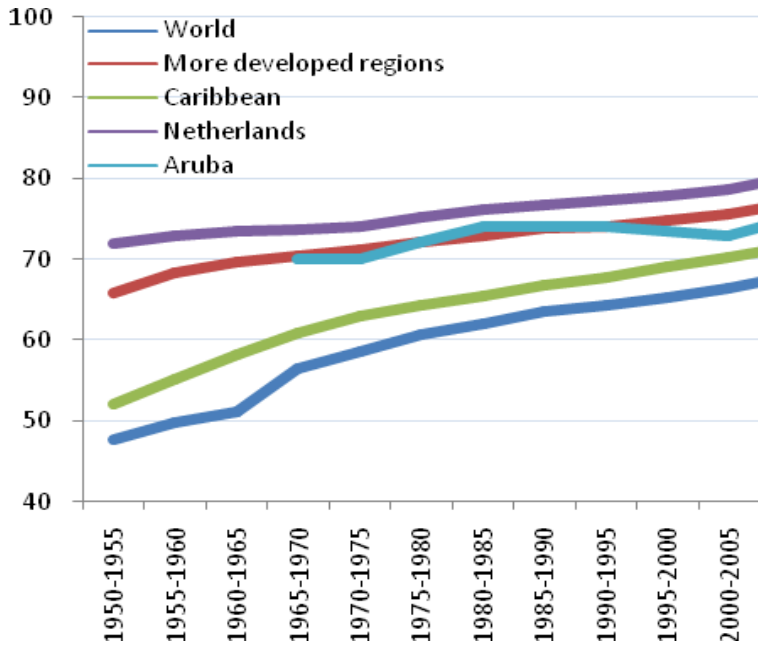


FIGURE 10. THE LIFE EXPECTANCY AT BIRTH IN ARUBA COMPARED TO OTHER REGIONS OF THE WORLD.

2.1.2 LIFE EXPECTANCY AT 65 YEARS

The global population is aging at an unprecedented rate. According to the most recent estimations of the World Health Organization, within the next five years, the number of adults 65 years and older will outnumber the number of children under the age of 5. By 2050, these adults will outnumber all children under the age of 14.

Aruba, following the global trend, the life expectancy at 65 years has known a steep increase in the last decade. In 2010, persons aged 65 years had, on average, 17.6 more years to live, females having 4.4 more years to live than males. Compared to the year 2000, the life expectancy of males aged 65 years increased with 2.2 years (16.8 percent) and that of females with 3 years (18.0 percent). Compared to other regions in the world, the life expectancy at age 65 years in Aruba is comparable to that in more developed regions.

A growing elderly population will inevitably be associated with higher costs of health care. Therefore it is important to take into account the health of the elderly population. In 2010, more than one third of the males and females older than 65 years were expected to continue living were to be spent in poor health see Figure 11.

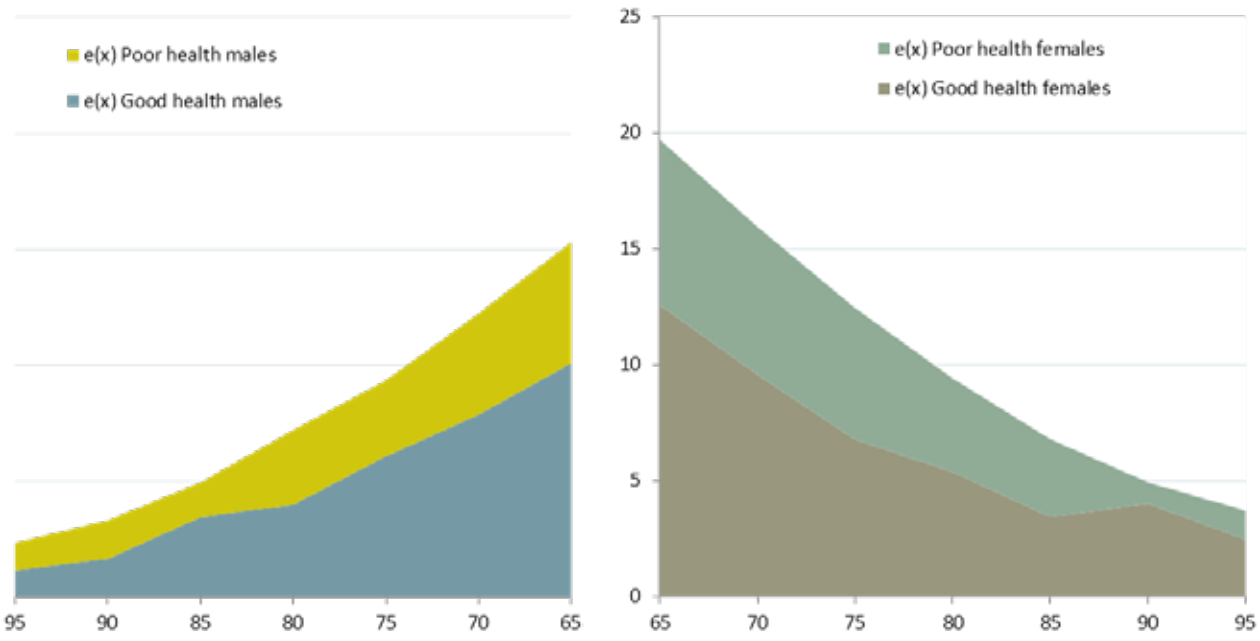


FIGURE 11. NUMBER OF YEARS SPENT IN GOOD HEALTH AND IN POOR HEALTH BY SEX AND AGE, 2010.

2.2 POTENTIAL YEARS OF LIFE LOST

Potential Years of Life Lost (PYLL) occurs when individuals die at an early age with the consequence of a greater loss of individuals' productivity. The PYLL per 100.000 population is calculated as stated below:

$$\frac{\text{(Estimated life expectancy-mean age death for premature deaths) x Number of premature deaths}}{\text{Population under estimated life expectancy}} \text{ x } 100{,}000$$

Premature deaths are deaths which have occurred before the estimated life expectancy.

The graph below illustrates the different causes of death that are under surveillance with their respective PYLL per 100,000. On average the different causes of death have a PYLL lower or around 400 years. Cancer of the digestive system followed by cerebral vascular disease (CVD) have PYLL's higher than 400 years, 511 and 417 respectively. Not to mention external causes with a PYLL of 1,965 years.

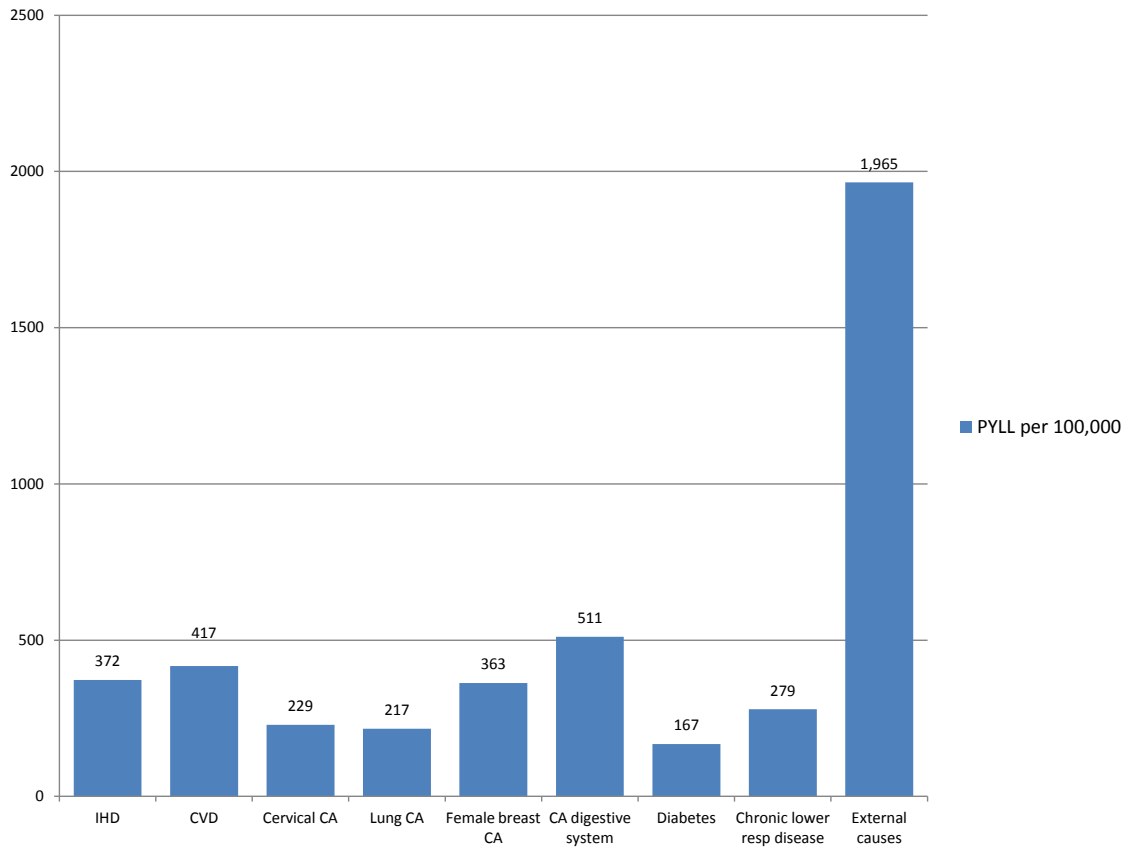


FIGURE 12. POTENTIAL YEARS OF LIFE LOST PER 100,000, ARUBA 2010.

External causes include for example transport accidents (land transport accidents), intentional self-harm (suicide), assault (homicide) and drowning. A total of 1,965 of potential healthy life years were lost due to external causes, this is mainly due to land transport accidents where young adults are mostly involved. Death at a young age increases the PYLL. These causes are responsible for most of the premature deaths on Aruba.

Further analysis of the external causes shows that land transport accidents claims for the highest PYLL in this category, see figure 13.

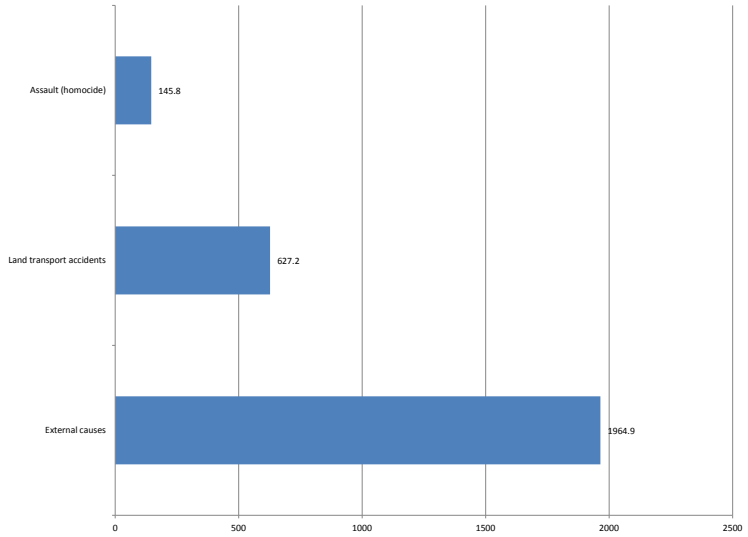


FIGURE 13. PYLL EXTERNAL CAUSES OF DEATH, 2010.

Land transport accidents claims the highest PYLL in the Aruban male population. This means that males die at a very young age due to land transport accidents. In 2010 the PYLL for land transport accidents claimed 1077.7 years in the male population. If we compare this PYLL to Ischemic Heart Disease for the male population (PYLL=559.3), land transport accidents claimed almost double the PYLL. Cancer of the digestive system claimed 481.7 PYLL in the male population, see figure 14.

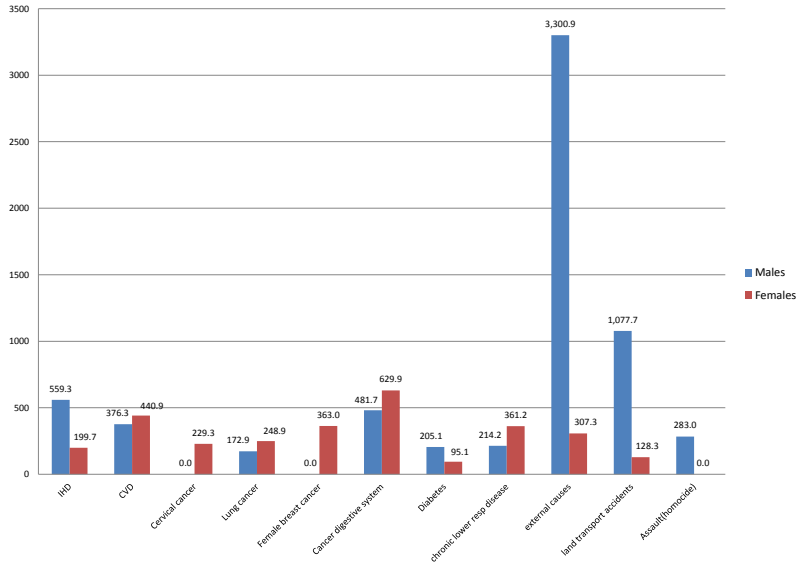


FIGURE 14. PYLL BY GENDER ARUBA, 2010.

For the female population, cancer of the digestive system claimed the highest number of PYLL in 2010 (PYLL= 629.9) followed by cerebral vascular disease (PYLL= 440.9), female breast cancer (PYLL= 363.0) and chronic lower respiratory diseases (PYLL=361.2).

2.3 CAUSES OF DEATH

Mortality is an index of the severity of a problem from both clinical and public health standpoints (Gordis, L. 2009). Mortality trends show the leading cause of death in a population. This information is used for development of prevention and intervention programs on a public health level. However mortality data relies directly on the quality of data received on the death certificate. The International Classification of Diseases, ICD-10 coding system by the WHO is used to code the different causes of death.

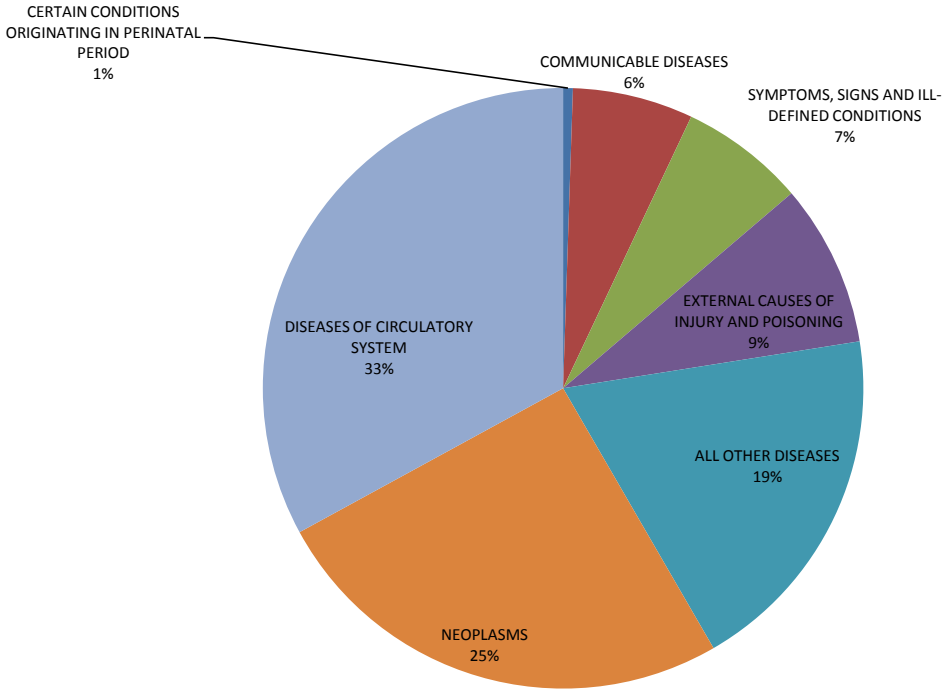


FIGURE 15. MORTALITY BY CAUSES OF DEATH (ICD-67), ARUBA PERIOD 2000-2010.

For the period from 2000 up to 2010, the leading causes of death for the Aruban population are diseases of the circulatory system, which covers 33 percent of the total deaths during the above mentioned period. Diseases in this category include ischemic heart disease (IHD), cerebral vascular disease (CVD) and pulmonary heart diseases among others. The second leading cause of death is neoplasm, which covers 25 percent of the total registered deaths during the reported period. Malignant neoplasm of the trachea, bronchus and lung, of the digestive organs and peritoneum (excluding stomach and colon cancer) and of the female breast are among the most causes of death due to neoplasm in Aruba.

Figure 16 presents the leading causes of death for the age category 25 to 44 years. As this figure shows the trend for mortality due to land transport accidents has decreased from 2004 to present. The highest death rate registered for land transport accidents during this period was in 2003 of 37 per 100,000, while this rate has decreased to 21 per 100,000 deaths in 2010. Even though the overall death rate has decreased since 2004, there has been an increase from 2007-2010.

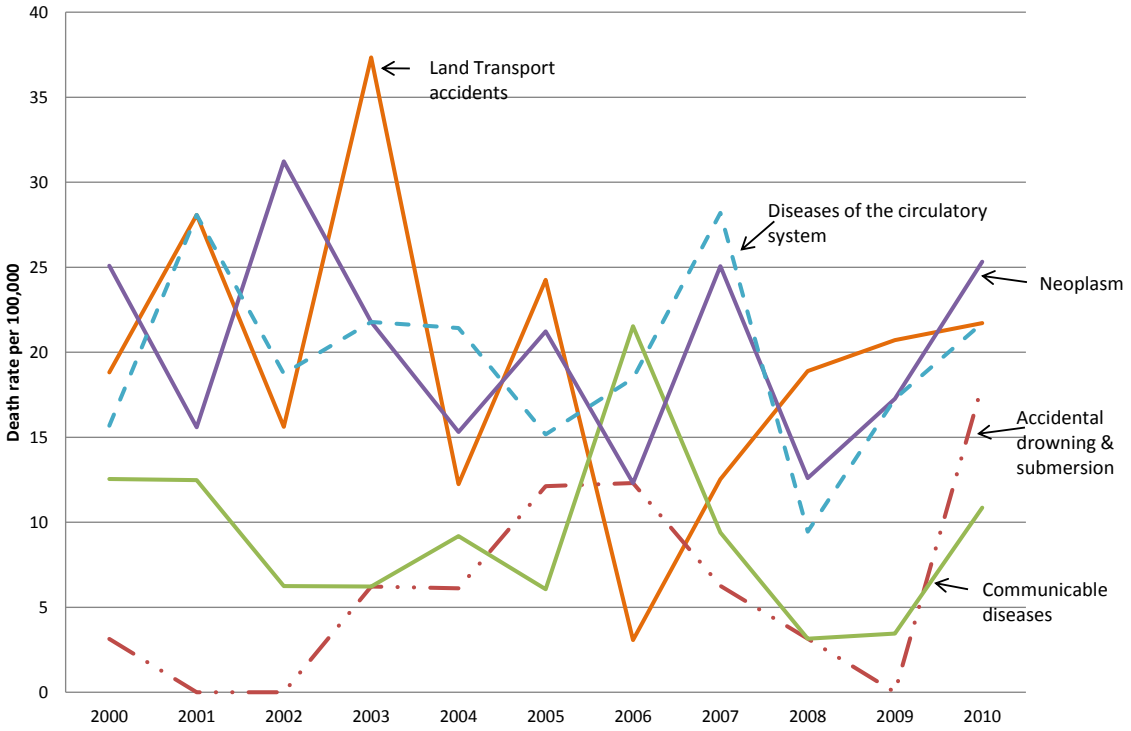


FIGURE 16. DEATH RATES CAUSES OF DEATH BY AGE CATEGORIES, ARUBA PERIOD 2000-2010.

Death rates, due to diseases of the circulatory system, have been almost steady for the 25-44 years age category during this period of time. The death rate varies between 10 and 30 deaths per 100,000.

The trend for mortality due to Neoplasm is almost similar to diseases of the circulatory system, where the death rates vary between 10 and 30 deaths per 100,000 during this period of time.

Land transport accidents together with diseases of the circulatory system and neoplasm remain the three highest causes of death in this productive age category of the Aruban population.

2.4 PERINATAL DEATH

Perinatal death is the total number of fetal deaths (stillbirths after at least 22 weeks of gestation) and early neonatal death (death of a live birth within 1 week of life).

As stated by the WHO in the Neonatal and Stillbirths World report, neonatal deaths and stillbirths stem from poor maternal health, inadequate care during pregnancy, inappropriate management of complications during pregnancy and delivery, poor hygiene during delivery and the first critical hours after birth, and lack of newborn care.

Several factors such as women's status in society, their nutritional status at the time of conception, early childbearing, too many closely spaced pregnancies and harmful practices are deeply rooted in the cultural fabric of societies and interact in ways that are not always clearly understood. (WHO, 2006)

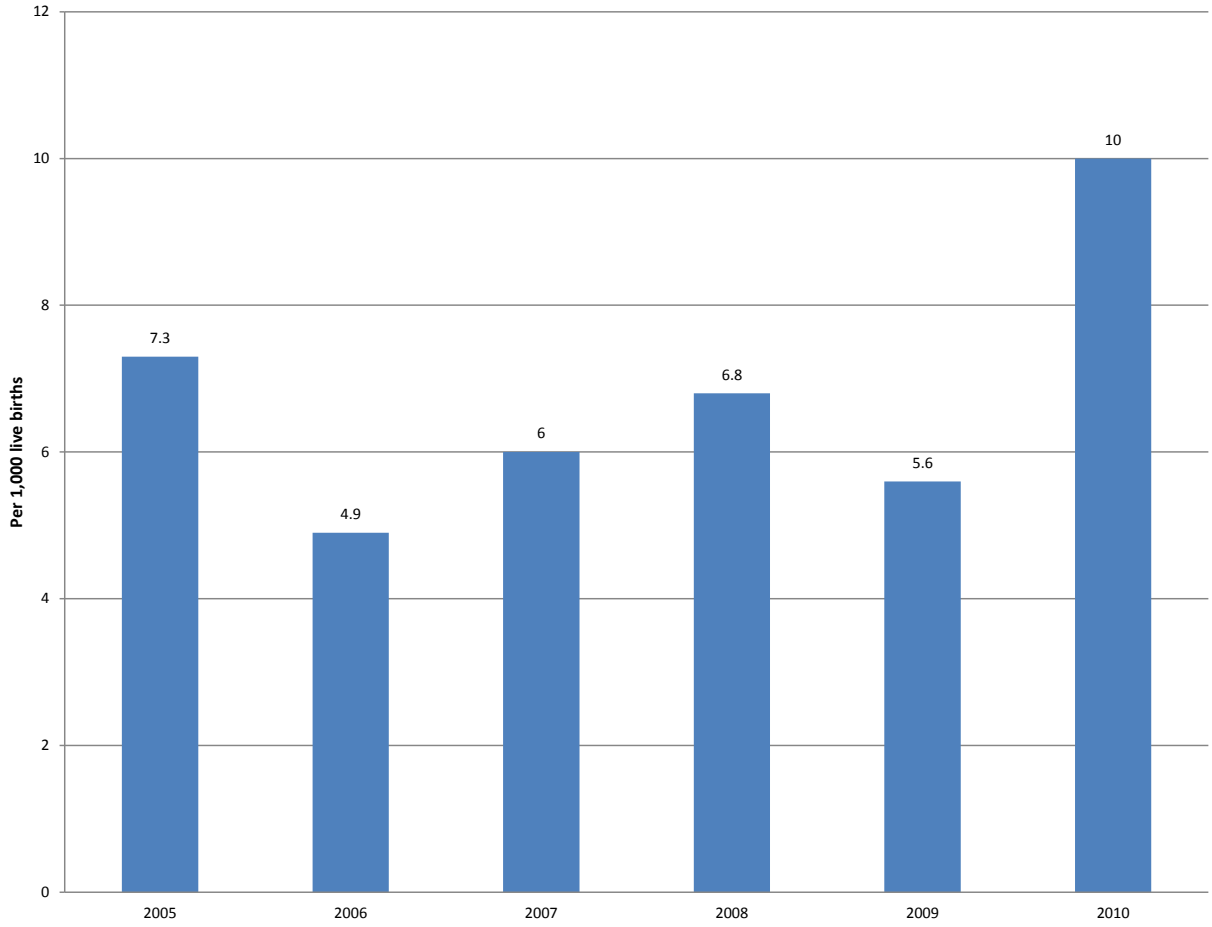


FIGURE 17. PERINATAL DEATH RATE PER 1,000 LIVE BIRTHS, ARUBA 2005-2010.

A perinatal death rate is also used as a summary statistic for evaluating the effectiveness of perinatal care. The perinatal death rate for Aruba fluctuates between 7 and 10 fetal deaths per 1,000 live births per year, see figure 17. However from 2006 to 2010 there is a tendency of increase in this rate per year. In 2010 the perinatal death rate increased to 10 per 1,000 live births. This is the highest registered rate in the past 5 years in Aruba.

Aruba accounts yearly with an average of 1,200 live births. The number of deaths per specific cause of death is small, resulting in very small death rates per specific cause. However the trend in specific cause of death will give an overview of the different causes of perinatal deaths.
Causes of perinatal deaths can be various but the most common cause of perinatal deaths registered worldwide are complications during birth, such as obstructed labour and fetal malpresentation, however these are in the absence of obstetric care. Birth asphyxia and trauma often occur together and therefore it is difficult to obtain separate estimates. In the most severe cases, the baby dies during birth or soon after, due to damage to the brain and/or other organs. Less severe asphyxia and trauma will cause disability. Modern obstetric practices have almost eliminated birth trauma. (WHO, 2006)

Conversely, where modern obstetric care is not available, intra partum or early postnatal deaths are very frequent. It is estimated that in developing countries asphyxia causes around seven deaths per 1000 births, whereas in developed countries this proportion is less than one death per 1000 births. The majority of deaths occur soon after birth, some just before birth. (WHO, 2006)

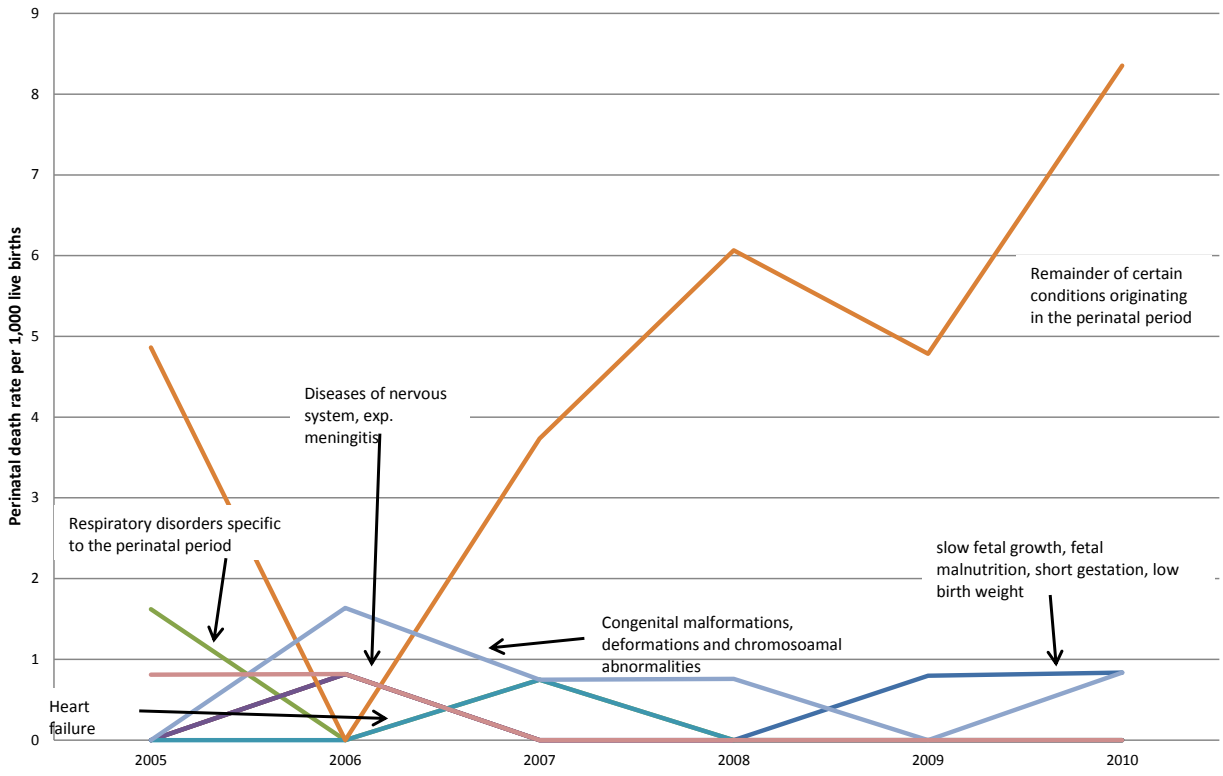


FIGURE 18. PERINATAL DEATH RATES BY CAUSES PER 1,000 LIVE BIRTHS.

The causes for perinatal deaths in Aruba are various and there is no clear trend of the specific cause, due to the small number of cases per specific cause, see figure 18. However the group "Remainder of certain condition originating in the perinatal period" has known an exponential increase from 2006 until 2010.

'Slow fetal growth', 'fetal malnutrition', 'short gestation or low birth weight' and 'congenital malformations, deformations' and 'chromosomal abnormalities' are the two most common specific cause of perinatal death in Aruba.

2.4.1 BIRTH WEIGHT

Low birth weight has long been debated as one of the causes of neonatal deaths. It is associated with the death of many newborn infants, but is not considered a direct cause. Around 15 percent of newborn infants weigh less than 2500 g, the proportion ranging from 6 percent in developed countries to more than 30 percent in other parts of the world. The main "culprit" is preterm birth and the complications stemming from it, rather than low birth weight itself.

Important determinants of weight at birth are maternal health and nutrition at conception. (WHO, 2006)

Aruba accounts yearly with an average of 1,200 live births. The birth weight is further analyzed using the standard worldwide cut off points.

Proportion of birth weight		Number of births	%
Low birth weight (LBW)	< 2500 gram	84	6.7
Very low birth weight (VLBW)	< 1500 gram	28	2.2
Ultra low birth weight (ULBW)	< 1000 gram	21	1.7

TABLE 2. DISTRIBUTION OF BIRTH WEIGHTS FOR ARUBA, 2010.

As table 2 shows, Aruba is comparable with other developed countries in the world in birth weight. In 2010 6 percent of all births weighted less than 2500 grams. It has to be noted that these births include the stillbirths.

3

3. PHYSICAL HEALTH

3.1 PERCEIVED HEALTH

Perceived health is a good indicator of actual health. Since the year 2000, a question on perceived health was included in the Population and Housing Census of Aruba, thus making important information available on the overall health of the population of Aruba.

Comparing data obtained from the 2010 Census to data from 2000 Census, the conclusion can be drawn that notwithstanding the rise in life expectancy observed in the last decade, the overall health of the population of Aruba has declined, (see table 3). The decline was most prominent in young persons (between ages 15 and 24 years), in males and in persons not born in Aruba.

On the other hand, 2010 Census data revealed a slight improvement of the overall health of the middle aged and a substantial improvement of the overall health of the elderly relative to the year 2000.

This is a valuable finding when taking into account the (financial) challenges to be met in the upcoming years as a result of the rapidly ageing of the population of Aruba. However, in 2010, still one third of the elderly population reported having bad or very bad health.

	Perceived health	
	2000	2010
	Good / Very Good	Good / Very Good
Total	88.2	85.8
Age		
0-14	98	96.3
15-24	96.3	93.8
25-44	92.3	90.6
44-64	78.4	78.2
65+	54.2	67
Sex		
Males	90.3	87
Females	86.2	84.8
Level of education		
Low level of education		79.3
Intermediate level of education		88.1
High level of education		91.3
Country of birth		
Aruba-born	87	85
Foreign-born	90.7	87.6

TABLE 3. PERCEIVED HEALTH BY AGE, SEX LEVEL OF EDUCATION AND COUNTRY OF BIRTH, ARUBA 2000-2010.

Overall, children, males, persons with a high level of education and foreign-born individuals experienced best health. As could be expected, the percentage of the population that reported being in good to very good health decreased with increasing age. Compared to other countries, the overall perceived health of the population of Aruba was relatively better (see Figure 19).

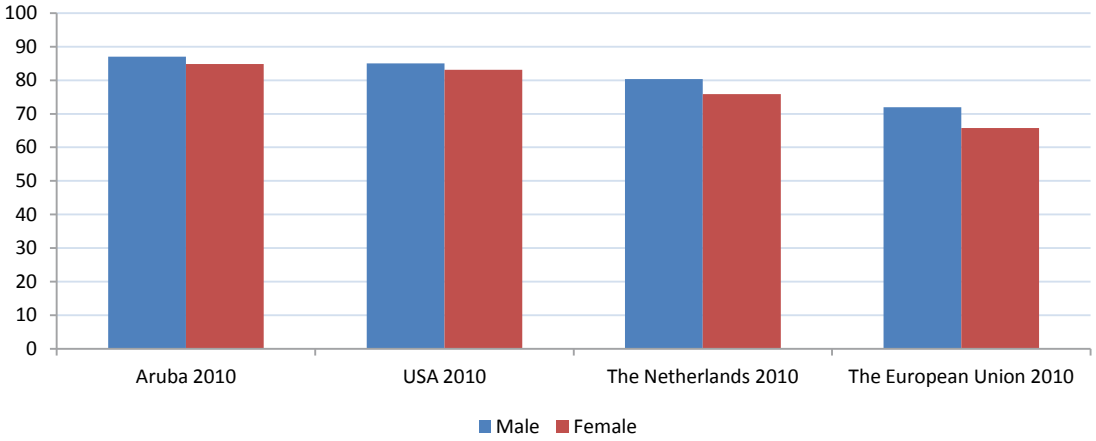


FIGURE 19. PERCEIVED HEALTH FOR DIFFERENT COUNTRIES/REGIONS, 2010: PERCENTAGE OF THE POPULATION PERCEIVING THEIR HEALTH AS BEING GOOD/VERY GOOD.

3.2 SELF-REPORTED DISEASES AND HEALTH CONDITIONS

According to Census data, in 2010, 31.8 percent of the population of Aruba was suffering from at least one chronic health condition. With increasing age the prevalence of chronic health conditions increased substantially with almost half of all persons 65+ suffering from at least one chronic health condition. Women were significantly more affected by chronic health conditions than men, 35.6 percent of women suffering from chronic health conditions compared to 27.5 percent of men (see Figure 20 A).

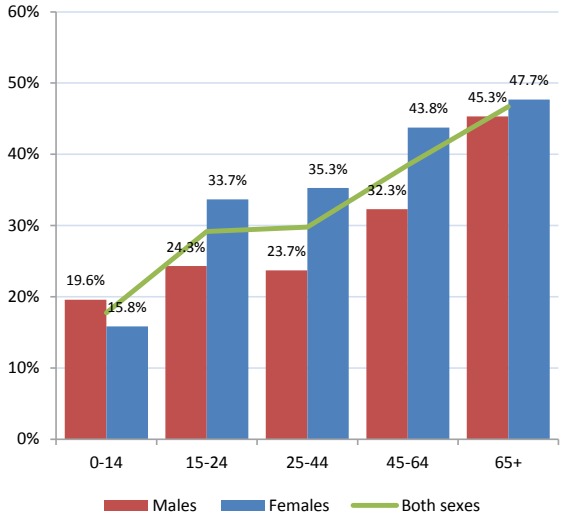


FIGURE 20 A. THE PREVALENCE OF CHRONIC HEALTH CONDITIONS IN ARUBA BY AGE GROUPS AND SEX.

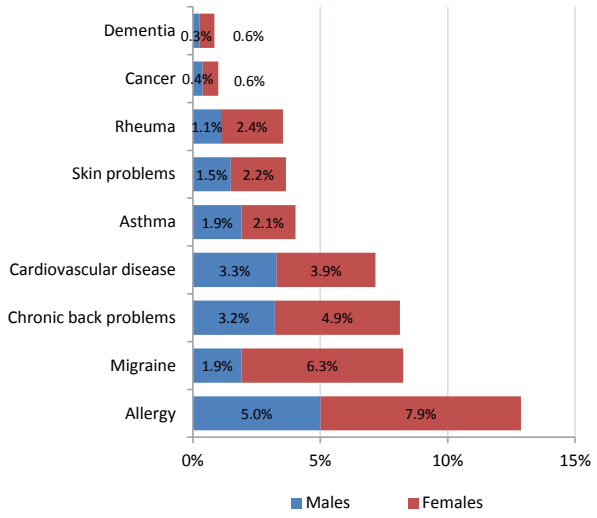


FIGURE 20 B. THE PREVALENCE OF CERTAIN CHRONIC HEALTH CONDITIONS IN ARUBA BY SEX.

Of the chronic health conditions included in the Census questionnaire, allergy was most often reported by both males and females, affecting 10.6 percent of males and 14.9 percent of females. In males, cardiovascular disease was the second most prevalent chronic health condition, reported by 7.0 percent of males, followed by chronic back problems (6.8 %) and migraine or severe headaches (4.1 %). In females on the other hand, migraine was the second most prevalent chronic health condition reported by 12.0 percent of females, followed by chronic back problems (9.3 percent) and cardiovascular disease (7.3 %).

In persons 65+, cardiovascular disease was the most prevalent chronic health condition, reported by 21.5 percent of persons 65+ (23.7 percent males and 19.9 percent females), followed by chronic back problems 14.2 percent (13.7 percent males and 14.6 percent females) and rheumatoid arthritis 12.1 percent (7.5 percent males and 15.4 percent females).

3.3 CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other tissues. Cancer cells can spread to other parts of the body through the blood and lymph systems.

Cancer is the leading cause of death worldwide, accounting for 7.6 million deaths in 2008. The main types of cancer causing deaths are lung cancer with 18.2 % of the total deaths worldwide, followed by stomach cancer (9.7 % of total deaths worldwide) and liver cancer (9.2 % of total deaths worldwide). Figure 21 illustrates an overview of the total cancer cases worldwide for both sexes (age standardized incidence- and mortality rate)

In the Americas cancer is the second leading cause of death, with an estimated 2.5 million new cancer cases and 1.2 million deaths during 2008. The most common cancers in the American region include: prostate, lung, colorectal and stomach cancers in men. In women: breast, lung, colorectal and cervical cancers (see figure 22).

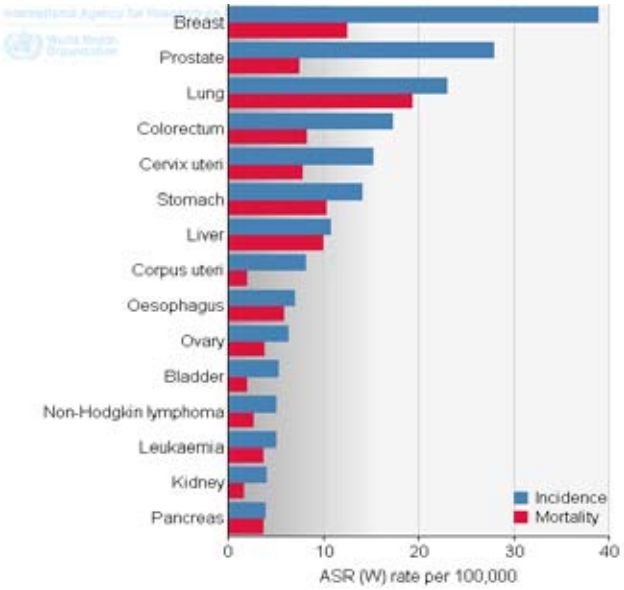


FIGURE 21. OVERVIEW OF CANCER INCIDENCE AND MORTALITY RATES (AGE STANDARDIZED)

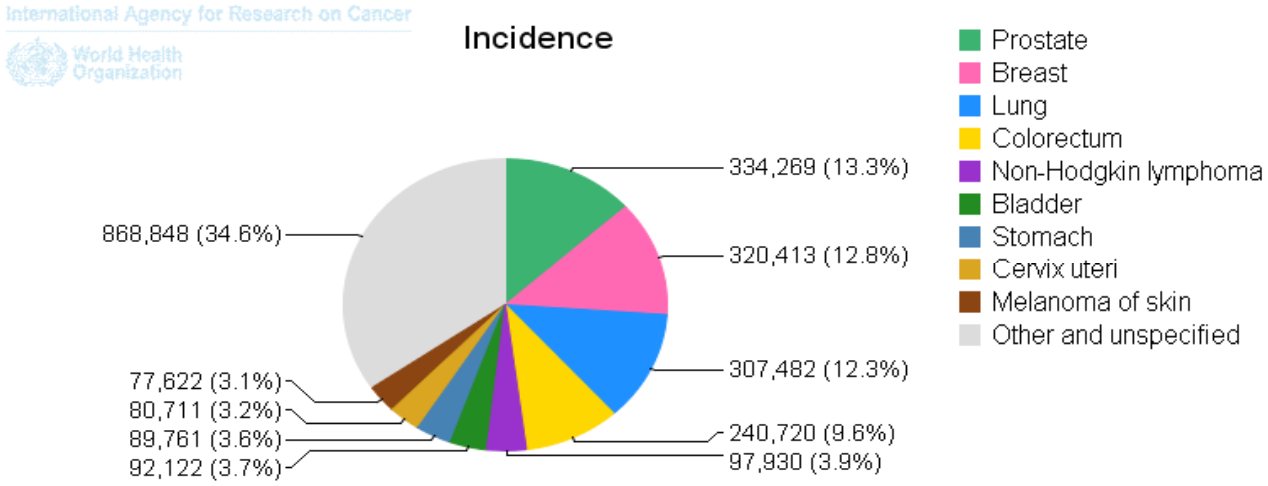


FIGURE 22. OVERVIEW OF NEW CANCER CASES FOR THE AMERICAN REGION, 2008.

3.3.1 CANCER IN ARUBA

According to data received from the Pathology section of the National Laboratory of Aruba during the period of 2007 until 2010, skin cancer is the number one diagnosed cancer in Aruba for both sexes, with a total of 611 new diagnosed cases during the reported period (42.3% of the total primary diagnosed cancer in Aruba).

The cancer dictionary of the International Agency for the Research on Cancer (IARC) only includes the malignant melanoma as skin cancer in their data base. During the period 2007-2010, there was a total of 12 malignant melanoma's diagnosed (2% of total skin cancer diagnosed), from which 5 males and 7 females (41.7% and 58.3% respectively).

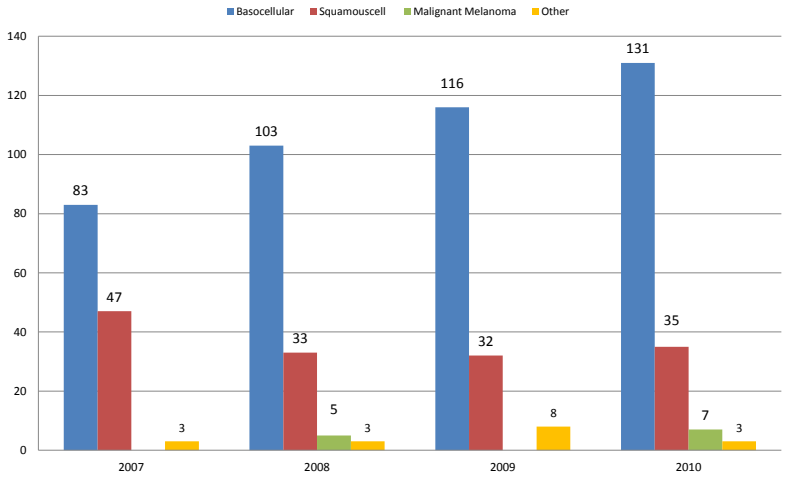


FIGURE 23. OVERVIEW OF THE TOTAL PRIMARY DIAGNOSED SKIN CANCER IN ARUBA.

3.3.2 CANCER IN BOTH SEXES

There were a total of 832 newly diagnosed cancer cases for both sexes during the period of 2007-2010 (excluding the non-melanoma skin cancers). Of this total, 54.8% of these cases are female and 45.2% are male. As shown in the figure 24, most of the new cancer cases in women are diagnosed in the age category of 15-59 years (n=219), whereas in men this is in the age category of 60-74 years (n=270). When added together, 73.6% of all the primary diagnosed cancer types are in the age category of 55-75+ years.

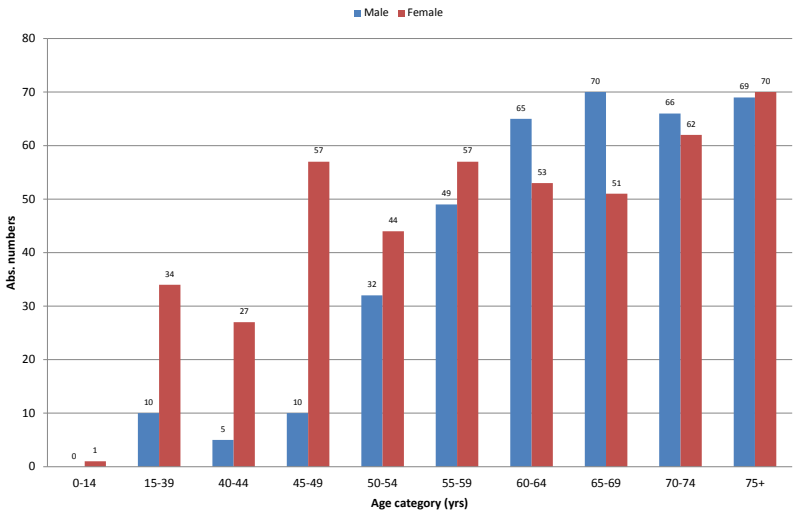


FIGURE 24. PRIMARY DIAGNOSED CANCER BY AGE CATEGORY FOR BOTH SEXES, ARUBA 2007-2010.

For both sexes, the number one diagnosed type of cancer is breast cancer in women with 212 new cases, followed by prostate cancer in men with 151 cases. Colorectal cancer is in the third place with a total of 119 cases (see table 4).

Figure 25 shows the trend of the top 10 diagnosed cancer in Aruba for the years 2007 -2010.

There is a steap increase in both breast and prostate cancer cases. In addition, there is also an increase in primary cases of trachea/bronchus and lung cancer.

Type of cancer	n
Breast	212
Prostate	151
Colorectum	119
Cervix uteri	37
Stomach	36
Trachea/bronchus/lung	34
Corpus uteri	32
Bladder	25
Oesaphagus	19
Thyroid	18

TABLE 4. OVERVIEW OF THE TOP 10 DIAGNOSED TYPE OF CANCER FOR BOTH SEXES, ARUBA 2007-2010.

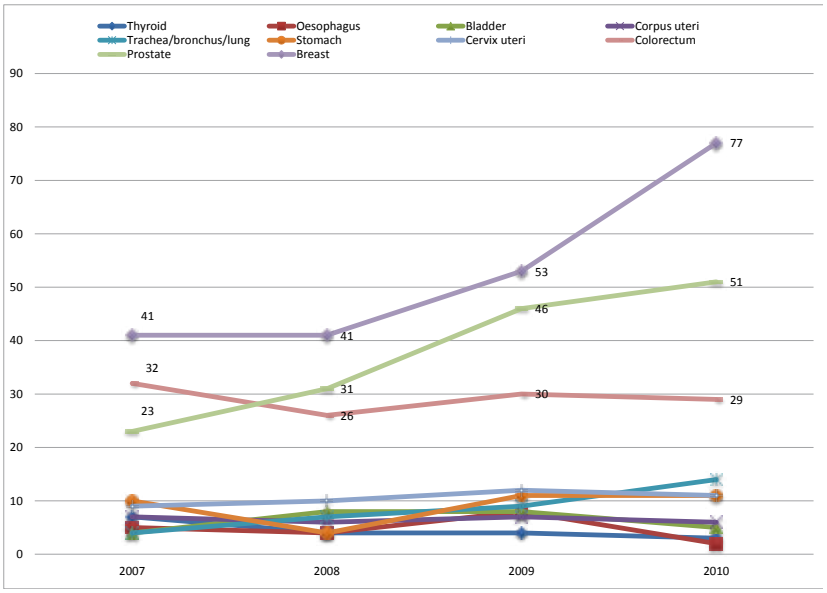


FIGURE 25. TRENDS IN TOP 10 NEW DIAGNOSED CANCER FOR BOTH SEXES, ARUBA 2007-2010.

3.3.3 CANCER IN MALES

Prostate cancer is the most diagnosed type of cancer in males on Aruba, with 18.1 percent of the total male cancers and with an average of almost 38 new cases diagnosed each year. In 2010, there were 51 new prostate cancer cases diagnosed, a two-fold increase as compared to 2007 (23 new cases).

The age standardized rate has also increased, from 44 cases per 100.000 in 2007 to 87.1 cases per 100.000 in 2010. This type of cancer concentrates itself in males starting at the age of 50 years, with an average age of 75 years at time of diagnosis and with a median age of 68 years.

Colorectal cancer is the second most diagnosed type of cancer in males on the island, with a total of 65 new cases during 2007-2010 (7.8 % of the total new cancer cases during the reported period).

Stomach cancer is the third most diagnosed type of cancer in males, with an average of 6 new cases during the reported year. The average age is 66.4 years and the median age for stomach cancer is 64 years. The minimum age at time of diagnosis was 35 years and the maximum age was 86 years old in 2009.

Figure 26 illustrates the incidence rate for the top 5 primary diagnosed type of cancer in males from 2007 till 2010 and table 5 shows the minimum-maximum age per type of cancer and also the average and median age for each primary diagnosed cancer for males in Aruba.

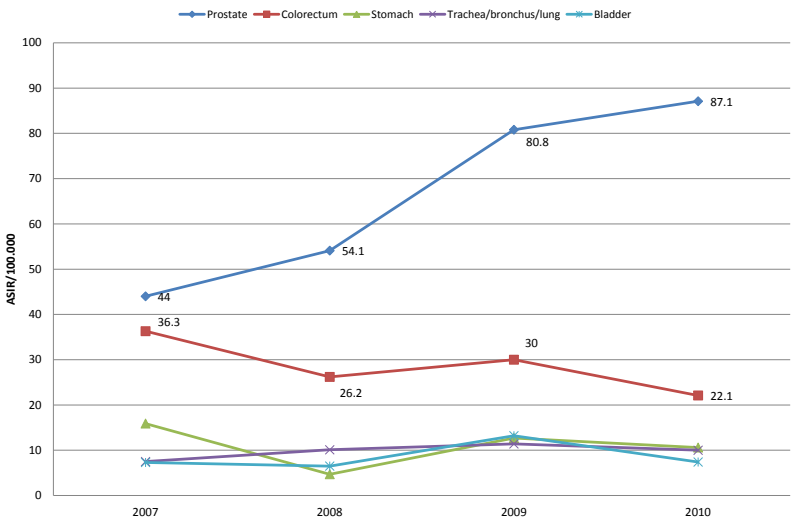


FIGURE 26. INCIDENCE RATE OF THE TOP 5 MALE CANCER TYPES IN ARUBA, 2007-2010.

Type of cancer	Total new cases	Min age (yrs)	Max age (yrs)	Average age (yrs)	Median age (yrs)
Prostate	151	50	89	75	68
Colorectal	65	31	91	64.4	66
Stomach	24	35	86	66.4	64
Trachea/Bronchus/Lung	23	39	74	64	67
Bladder	18	55	87	69	70

TABLE 5. OVERVIEW OF THE MINIMUM-MAXIMUM-MEDIAN AND AVERAGE AGE FOR MALES AT TIME OF DIAGNOSIS FOR THE TOP 5 CANCER.

3.3.4 CANCER IN FEMALES

The top 5 diagnosed cancers in females are skin cancer, breast cancer, colorectal cancer, cervical-endometrial cancer and ovarian cancer.

Breast cancer is, besides skin cancer, the most diagnosed type of cancer in females, with a total of 212 new cases from 2007-2010. This type of cancer comprises 46.5 percent of the total diagnosed new cancer cases in females. Of these 212 new cases, 75.9 percent are in the age category of 45-74 years (n=161). The average age for females diagnosed with breast cancer is 59 years, while the median age of 60 years. This explains the concentration of the disease in women aged 60 years.

There is a steep increase in the number of new breast cancer cases from 2009 to 2010 due to the introduction of the Mamma Policlinic at the Dr. Horacio Oduber Hospital. The introduction of this clinic contributed to earlier detection of breast cancer in women. The minimum age a female was diagnosed with breast cancer was at the age of 24 years, while the oldest female with breast cancer was at the age of 98 years.

Colorectal cancer is also in the top 5 diagnosed cancers in females, with an average of 13 new cases per year, mostly in the age category of 55-74 years (67.3%), see figure 27.

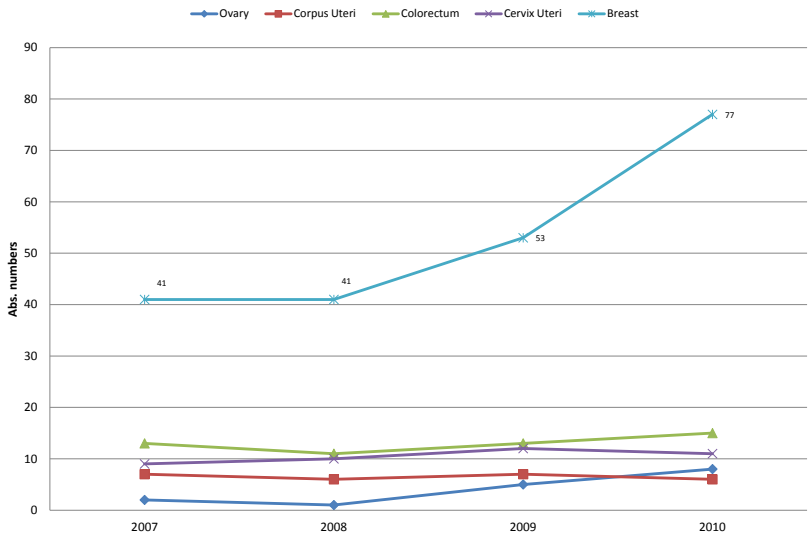


FIGURE 27. INCIDENCE RATE OF THE TOP 5 FEMALE CANCER TYPES IN ARUBA, 2007-2010.

Ovarian cancer shows an exponential increase from 2007 to 2010, with an incidence rate in 2007 of 3.7 per 100,000 to an incidence rate of 15 cases per 100.000 in 2010, a fourfold increase. There is an increase in the number of cases in the age category of 45-49 years and in the age category of 70+ years.

Cervical-endometrial and ovarian cancer belong to the gynecological cancer. With a total of 37 new cases of cervical cancer during 4 years (8.1 % of the total female cancer cases), the youngest female diagnosed was at the age of 24 years, while the oldest female was diagnosed at the age of 92 years.

The average age is 48.8 years while the median age is 47 years, see table 6.

Type of cancer	Total new cases	Min age (yrs)	Max age (yrs)	Average age (yrs)	Median age (yrs)
Breast	212	24	98	59	60
Colorectal	52	33	89	62.3	61
Cervix uteri	37	24	92	48.8	47
Corpus uteri	31	36	88	56	58
Ovary	16	41	82	61.3	59

TABLE 6. OVERVIEW OF THE MINIMUM-MAXIMUM-MEDIAN AND AVERAGE AGE FOR FEMALES AT TIME OF DIAGNOSIS.

During 2007 till 2010 there were a total of 31 endometrial (corpus uteri) cancer cases diagnosed (6.8 % of the total female cancer). Of the total registered cases, 80.6 % are in the age category of 45-74 years, with a minimum age at diagnosis of 36 years and a maximum age of 88 years.

3.4 INFECTIOUS DISEASES

The Department of Public Health monitors infectious diseases which can be a threat to the Public Health of Aruba, using a surveillance system. This surveillance system is based on the National Ordinance for Infectious Diseases; this supports the mandatory notifications of infectious diseases. The surveillance system is based on a communication network consisting of public health authorities and care givers.

Together with the Caribbean Public Health Association (CARPHA) and the Pan American Health Organization (PAHO), Aruba is part of the Caribbean regional surveillance system.

3.4.1 DENGUE

Dengue is one of the most prevalent infectious diseases in the Caribbean region. Dengue is prevalent from 1970 in Aruba. Also it is prevalent throughout the tropics and subtropics. Outbreaks have occurred frequently in the Caribbean, including Puerto Rico, the U.S. Virgin Islands, Cuba, Venezuela (South America), Paraguay (South America) and Costa Rica (Central America).

In 1986 Aruba experienced its first major Dengue outbreak. It has been calculated that during this epidemic more than 40,000 people were infected with the virus. Since 1986 Aruba has experienced more Dengue outbreaks during the rainy season. Such outbreaks became an annual event dating back to 2003, see figure 28.

Dengue fever is a disease caused by a virus that is transmitted by the *Aedes aegypti* mosquito. The virus is transmitted to humans through the bites of infected female mosquitoes. After virus incubation of 4–10 days in the mosquito, this infected mosquito is capable of transmitting the virus for the rest of its life. Dengue is caused by one of four serotypes of Dengue fever virus(DEN-1, DEN-2, DEN-3 and DEN-4). Recovery from infection with one Dengue serotype provides lifelong immunity against that particular serotype to which the patient was exposed. Subsequent infections by other serotypes increase the risk of developing Severe Dengue (Dengue Hemorrhagic Fever and Dengue Shock Syndrome).

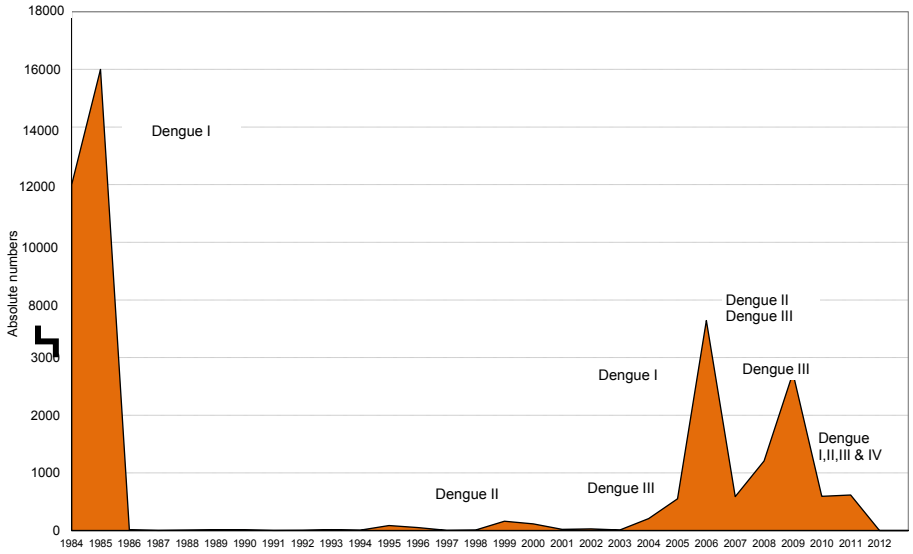


FIGURE 28. DENGUE OUTBREAKS ARUBA, 1984-2012.

Dengue has become endemic on the island during the past 5 years, where viral activities are monitored even during the dry periods on the island.

In 2010 Aruba detected all 4 serotypes of the Dengue fever virus in circulation during the same period of time on the island. This increases the risk for developing severe Dengue. The most affected age category by the Dengue fever virus is the category of 25-64 years.

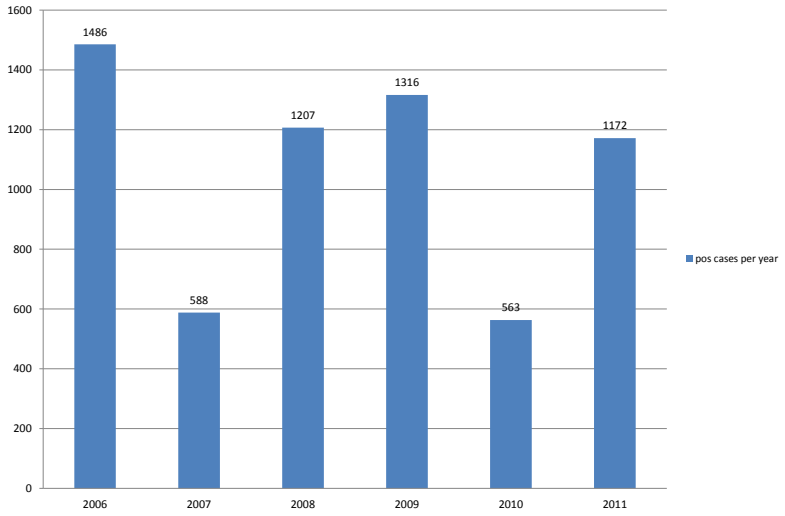


FIGURE 29. NUMBER OF LABORATORY CONFIRMED CASES PER YEAR ARUBA, 2006-2011.

Figure 29 shows the number of laboratory confirmed Dengue cases per year. The number of cases per year exceeds 500 cases. Not to mention the high numbers during outbreaks, which are above not less than 1000 confirmed cases per year.

The Dengue surveillance system shows how Dengue manifests itself periodically through the years. As figure 30 shows, Dengue has the highest prevalence during the end and beginning of the year. This specific period of time is considered as the rainy season of Aruba. This rain season runs from October through February the following year.

To maintain monitoring on the Dengue outbreaks on the island, the Epidemiology Unit maintains three curves the lower endemic curve, endemic curve and epidemic curve. These curves will give a weekly overview and gives the possibility to make projection of the Dengue situation on the island.

From 2010 to 2011 Dengue activities were observed during the dry periods, see figure 30.

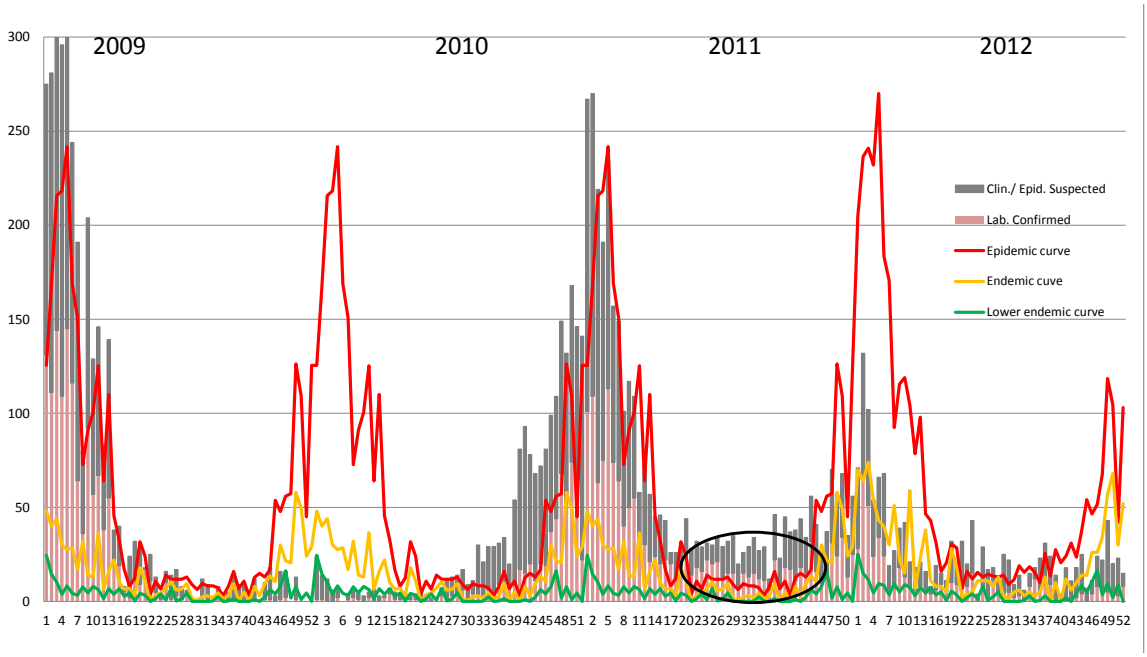


FIGURE 30. EPIDEMIC AND ENDEMIC DENGUE CHANNELS ARUBA, 2009-2011.

3.4.1.2 AEDES AEGYPTI INDEX

The Department of Public Health also monitors the indices of the vector transmitting the Dengue virus, the *Aedes aegypti* mosquito.

The three indices that are monitored throughout the year are the house index (figure 31), the container index (32) and the breteau index. The house index is the percentage of houses infested with A. aegypti larve or pupae. The container index is the percentage of water holding containers infested with larvae and/or pupae. The Breteau Index provides the number of positive containers per 100 houses.

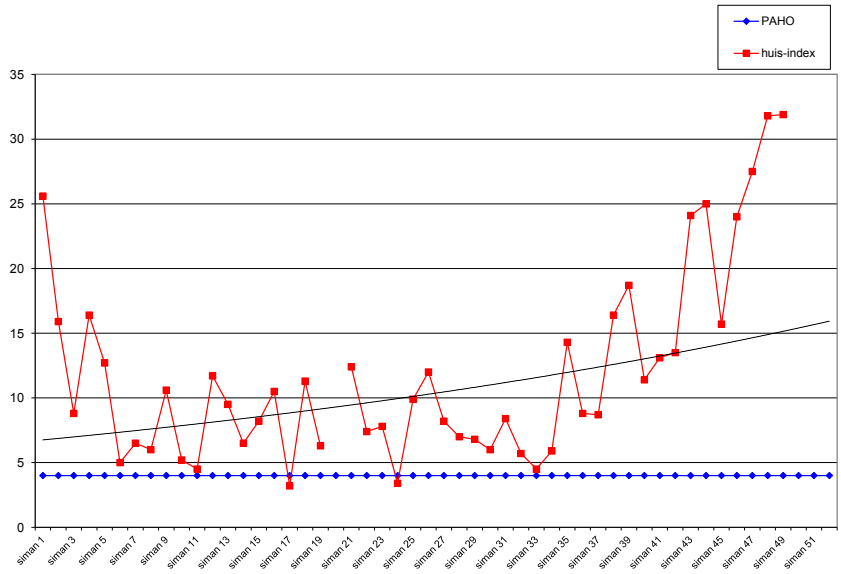


FIGURE 31. HOUSE INDEX ARUBA, 2011.

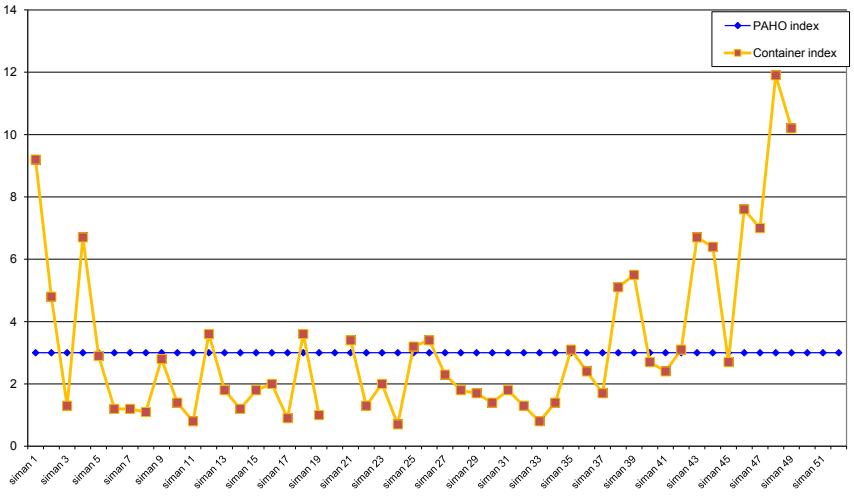


FIGURE 32. CONTAINER INDEX ARUBA, 2011.

The Pan American Health Organization (PAHO) uses the standard limit of 4 percent of houses positive for containers being the maximum percentage of houses. When this limit is surpassed the area is considered high risk for prevalence of the A. *aegypti* mosquito. As figures 31 and 32 show in the beginning of the year and at the end of the year the indices recorded in Aruba are above the PAHO limits.

3.4.2 TUBERCULOSIS

Tuberculosis is a serious infectious disease caused by the *Mycobacterium tuberculosis*. Tuberculosis is considered worldwide one of the re-emerging diseases during the past years.

Pulmonary tuberculosis is the most common form in Aruba. Open pulmonary tuberculosis is the most contagious form of tuberculosis. The bacterium is spread through the air by droplets formed during coughing or sneezing. The highest risk for contamination is in poorly ventilated or confined spaces. People with poorly functioning immune systems are more likely to get the disease.

Tuberculosis is seen in Aruba mainly in immigrants and travelers who come from endemic areas. Therefore it can be stated that tuberculosis is not an endemic but an imported disease in Aruba.

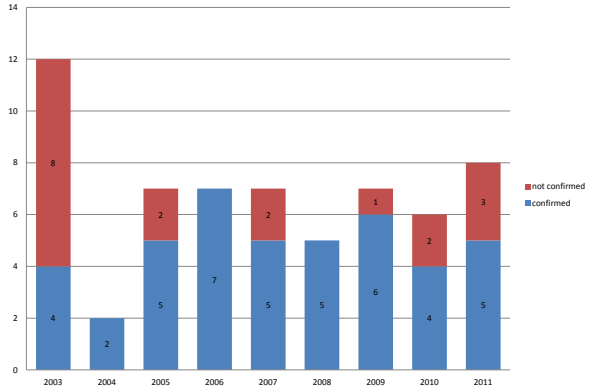


FIGURE 33. TUBERCULOSIS CASES PER YEAR ARUBA, 2003-2011.

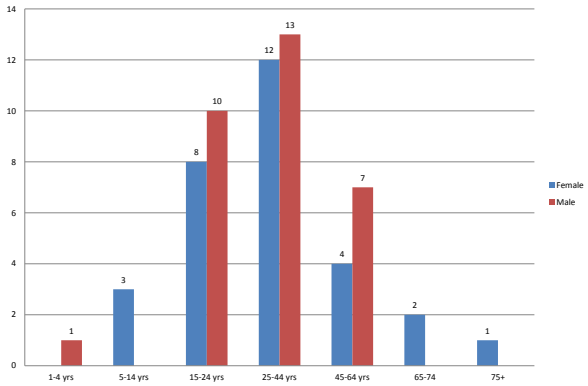


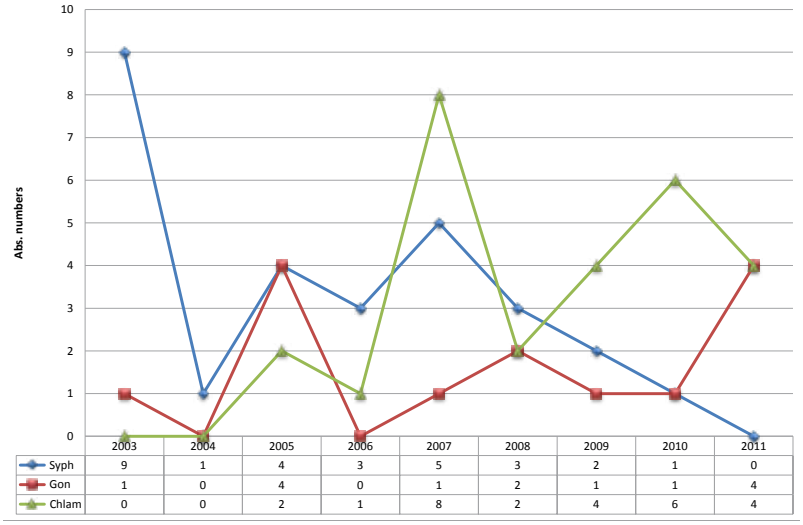
FIGURE 34. TUBERCULOSIS CASES BY AGE CATEGORY AND GENDER IN ARUBA, 2003-2011.

Figure 33 pointed that from 2003 to 2011 Aruba experienced an average 6.8 new cases of TB yearly; about 95 percent are imported cases. In figure 34 confirmed cases and not confirmed cases are presented. The confirmed cases are confirmed by laboratory tests and chest X-rays, whereas the not confirmed cases are confirmed clinically by the pulmonologists. The clinically confirmed cases are also registered as TB this engaging the necessary close contact investigation.

3.4.3 SEXUALLY TRANSMITTED INFECTIONS

Sexually Transmitted Infections (STI's) are infectious diseases that are primarily transmitted through unprotected sexual contact by anal, oral or vaginal contact. In most cases, the organisms that cause STI's enter the body through the mucous membranes. Some STI's can also be transmitted through other routes such as "from mother to child" during pregnancy or birth. STI's can also be transmitted through blood transfusions or the use of contaminated needles. Their effects are not always limited to the reproductive organs. STI's can cause serious complications, including infertility in women and men.

Reporting of STI's to the Service of Contagious Diseases is not optimal. Data presented in this chapter are indicative because of underreporting. It gives an indication of the different risk groups in the Aruban population exposed to STI's. International indicators consider the age category 15 to 24 year as the most sexually active age category. STI's are detected in the very early age of sexual activities, overall females are infected at an earlier age compared to males (WHO, 2011).



	2003	2004	2005	2006	2007	2008	2009	2010	2011
Syph	9	1	4	3	5	3	2	1	0
Gon	1	0	4	0	1	2	1	1	4
Chlam	0	0	2	1	8	2	4	6	4

FIGURE 35. ABSOLUTE NUMBERS OF REPORTED STI'S BY YEAR IN THE AGE CATEGORY 15-19 YEARS ARUBA, 2003-2011.

Figure 35 illustrates the absolute numbers of reported STI's per year in the age category 15 to 19 years. Syphilis is the most reported STI followed by Chlamydia. Overall, Syphilis, Gonorrhea and Chlamydia are the most common reported STI's at the Service for Infectious Diseases.

3.4.3.1 SYPHILIS

Syphilis is one of the oldest STI's known worldwide. In 2005 syphilis accounted for a global prevalence of 36 million cases (WHO, 2011). Although the global incidence for syphilis has been declining from 12.2 million new cases in 1995 to 10.6 million new cases in 2005, for the American region this is not the case. Instead the incidence for syphilis has been on a rise from 1.26 million cases in 1995 to 2.39 million new cases in 2005 for the Latin American Region and the Caribbean (WHO,2001; WHO; 2011).

Yearly there is an average of 30 new cases of syphilis reported to the Service for Infectious Diseases in all age categories. The male gender is the most affected by this STI, see figure 36.

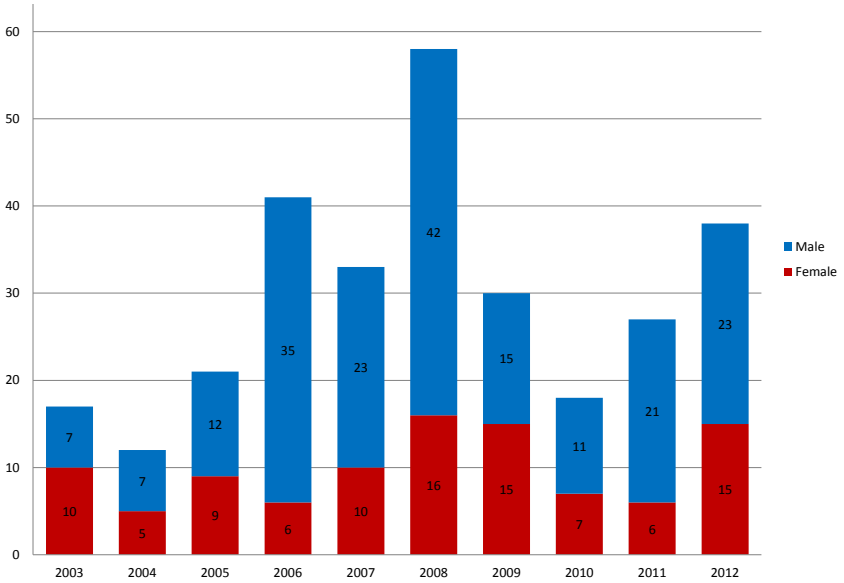


FIGURE 36. ABSOLUTE NUMBER OF NEW SYPHILIS CASES BY GENDER PER YEAR, ARUBA 2003-2012.

The males in the age group 25 to 44 years are the most affected by syphilis followed by the age category 45 to 64 years. It is also important to notice that young female adults in the age category of 15-24 years are the most affected by syphilis compared to the males, see figure 37.

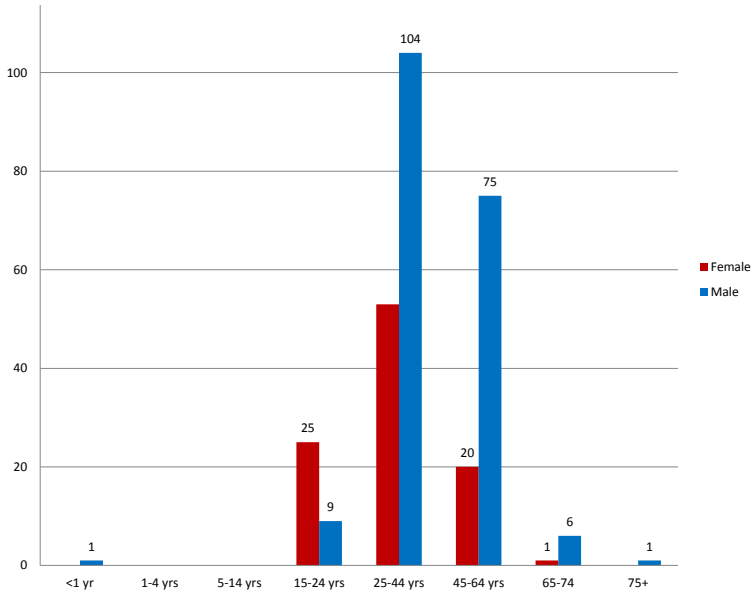


FIGURE 37. NEW SYPHILLIS CASES PER AGE CATEGORY, ARUBA 2003-2012.

3.4.3.2 CHLAMYDIA

The second most common STI in Aruba is Chlamydia. In 2005 the global incidence for Chlamydia was 101.5 million cases; the American continent had the highest incidence (22.5 million). Women are the most affected by Chlamydia, see figure 38.

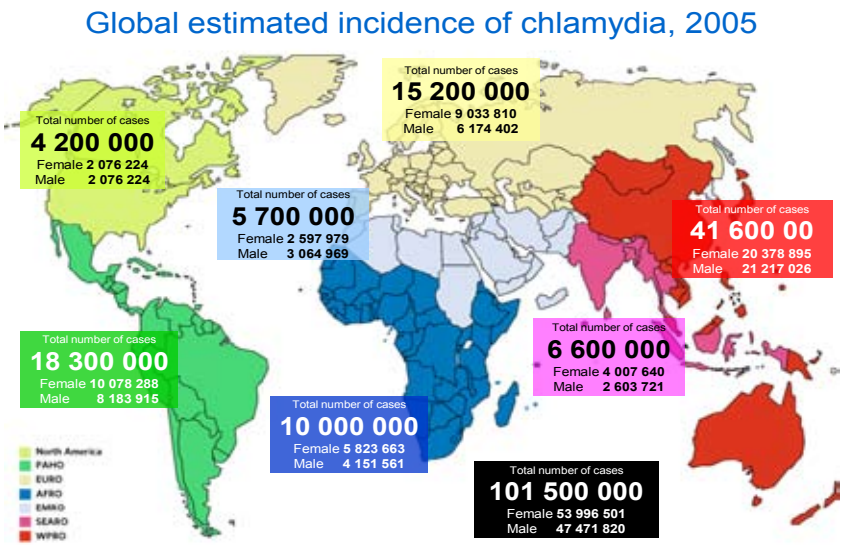


FIGURE 38. GLOBAL ESTIMATED COMMON CHLAMYDIA INCIDENCE, 2005.

In Aruba, from 2003 to 2011 there was an average of 7 new cases of Chlamydia per year. Similar to the worldwide incidence, the female gender is the most affected by this STI, see figure 39.

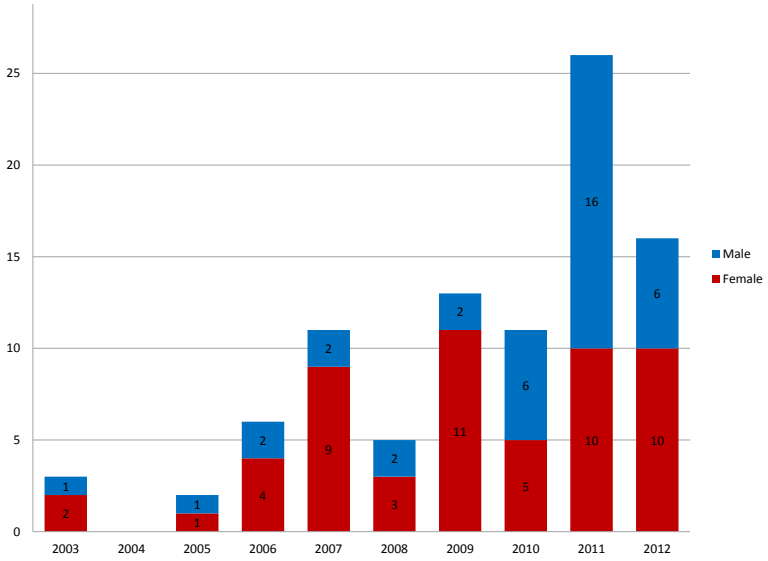


FIGURE 39. CHLAMYDIA INCIDENCE BY GENDER PER YEAR, ARUBA 2003-2011.

3.4.3.3 GONORRHEA

WHO stated that Gonorrhea is a common STI, however up to 80% of women and 10% of the men are asymptomatic. Complications of Gonorrhea infections may lead to infertility in women, even blindness in the new born infant.

Worldwide the incidence of Gonorrhea has dropped during the 1980 to 1990 down to less than 20 per 100,000 cases worldwide. However from 1990's up till 2011 the incidence has been increasing in many different countries of the world and reached a global incidence of 62 million new cases in 1999 (WHO, 2001).

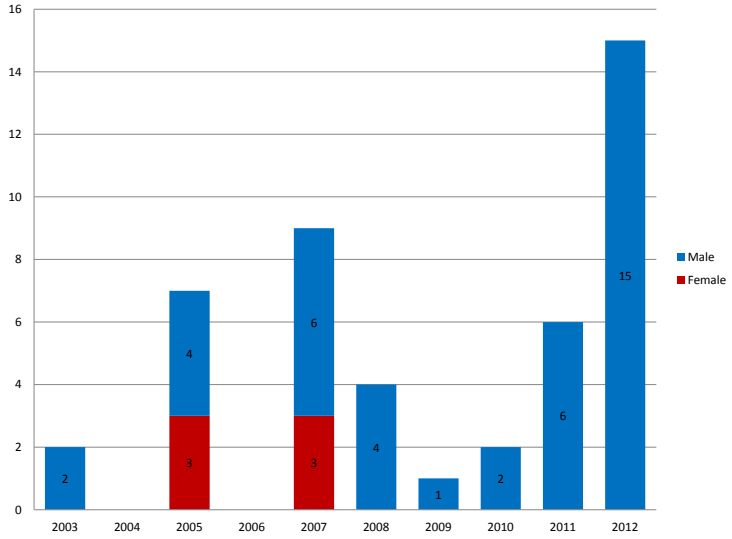


FIGURE 40. ABSOLUTE NUMBER OF NEW CASES OF GONORRHEA BY GENDER, ARUBA 2003-2011.

In Aruba, Gonorrhea is the least reported STI at the Service for Infectious Diseases, with an average of only 4.6 new cases per year during the past 10 years. Males accounted for the most reported cases of gonorrhea, see figure 40.

During this same period the most affected population with Gonorrhea were in the age category 15 to 44 years. It is important to notice that during this period only 1 case in the age category of 5-14 years was reported. However one need to take into account the underreporting of Gonorrhea, see figure 41.

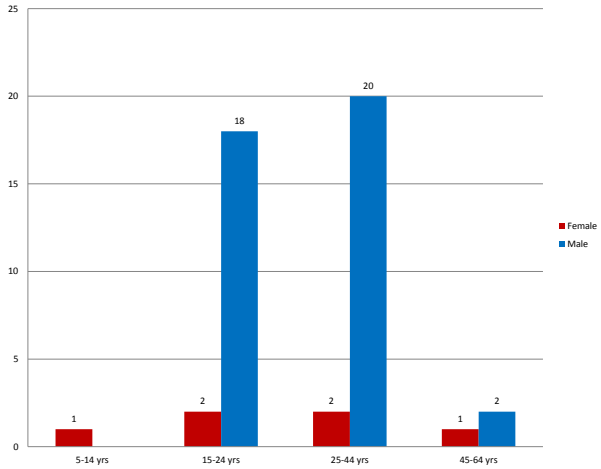


FIGURE 41. TOTAL NUMBER OF NEW CASES OF GONORRHEA BY AGE CATEGORY, ARUBA 2003-2011.

3.4.3.4 HIV/AIDS

Acquired immunodeficiency syndrome (AIDS) is caused by human immunodeficiency virus (HIV). HIV is transmitted through unprotected sexual contact, but also through blood contact, blood products and also from mother to child during pregnancy and lactation.

HIV/AIDS is not curable but treatable. There are medications available that inhibits multiplication of the HIV-virus in the body. This leads to less often HIV infection or delayed progression to AIDS.

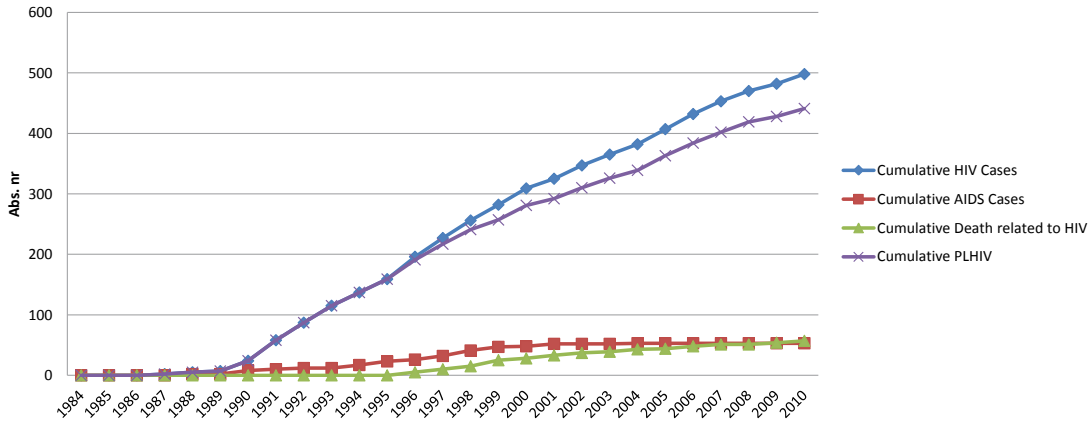


FIGURE 42. CUMULATIVE HIV CASES, AIDS CASES, HIV DEATHS & PLHIV IN ARUBA, 1984-2010.

The trend of cumulative cases of HIV, AIDS and death related to HIV and People Living with HIV (PLHIV) per year is presented in figure 42. Each year there is an average of 26 new cases per year, with a minimum of 12 new cases and a maximum of 28 new cases in a year. As this trend illustrates the incidence for HIV is on a rise together with the incidence for PLHIV. In addition the AIDS cases have been stable over the past 10 years. Deaths related to AIDS/HIV have also been stable over the past 5 years.

More than 30 percent of the registered cases from 2000 to 2010 are born in Aruba and 70 percent of the cases are male and 27 percent are female. This information indicates that the epidemic in Aruba manifests itself mainly in the male gender. This finding is opposite to the rest of the Caribbean. In the Caribbean HIV cases are mostly in women. However it is important to mention that these numbers represent only the HIV cases that are registered.

The most common mode of transmission of the HIV virus reported was heterosexual contact (59 percent) followed by men having sex with men (MSM) (29 percent). HIV affects mostly the young productive population between 25 to 44 years.

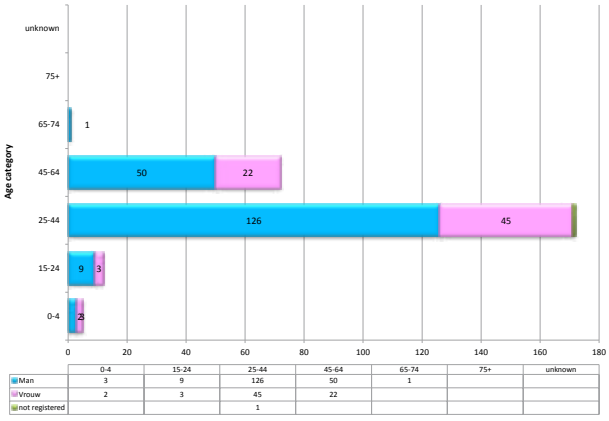


FIGURE 43. HIV CASES BY AGE CATEGORY, ARUBA 2000-2010.

3.4.4 HEPATITIS B

Hepatitis B is an infection of the liver caused by the hepatitis B virus (HBV). The virus is primarily found in the liver but is also present in the blood and certain body fluids. It is estimated that 350 million individuals worldwide are infected with the virus, which causes 620,000 deaths worldwide each year.

In Aruba an average of 35 new cases of Hepatitis B are registered yearly. Most cases are in males. During the past 5 years the most Hepatitis B cases were detected in the year 2009, see figure 44 A en 44 B.

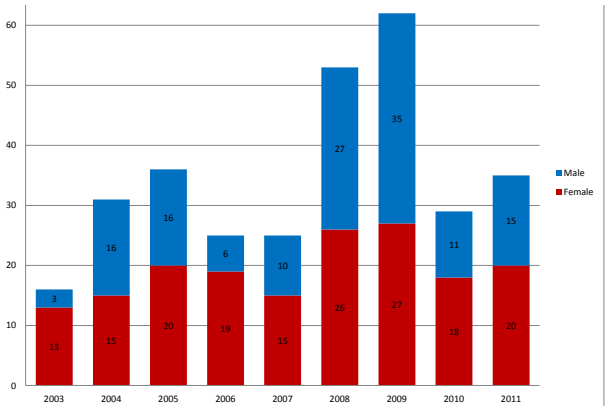


FIGURE 44 A. TOTAL NUMBER OF HEPATITIS B CASES BY GENDER YEARS, ARUBA 2003-2011.

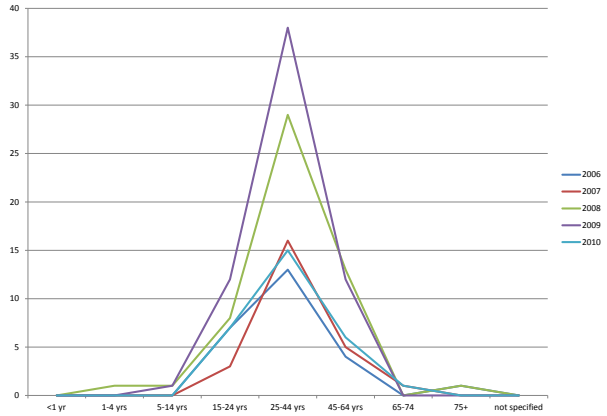


FIGURE 44 B. HEPATITIS B CASES BY AGE CATEGORIES

Most of the cases are imported cases and are in the age category of 25-44 years. In Aruba Hepatitis B vaccination is offered to all infants born after 2004.

The Services of Infectious Diseases handle the vaccination for:

- people working in risk groups; health care and public safety (police, ambulance personnel, firefighters, prison guards)
- household contact
- students who are going to study abroad
- sexual partners of carrier of HBV
- HIV patients

The Service of Infectious Diseases is also in charge of the Post-exposure prophylaxis (PEP) treatment. This treatment is used after possible exposure to the hepatitis B virus through sex, drug injection or injury such as needle stick injury. PEP is given to decrease the risk of infection with the hepatitis B virus. Stick needle injury PEP treatment is the most common type of HBV treatment requested at the Service for Infectious Diseases of the Department of Public Health.

3.4.5 FOOD BORNE DISEASES

3.4.5.1 SALMONELLOSIS

Salmonellosis is a food borne illness caused by the *Salmonella* bacteria carried by some animals, which can be transmitted from kitchen surfaces and can be in water, soil, animal faeces, raw meats and eggs.

Salmonellosis, as with many other food borne diseases, is also present on the island. To prevent transmission of these bacteria the Service of Infectious Diseases of the Department of Public Health carries out a yearly screening of the people working in the HORECA industry. This screening is under the regulation "PersoneelsBesluit en Waren Verordening GT2". Among the many tests included in this screening, a faeces smear on Salmonella, Shigella and Campylobacter is also included. Only HORECA personnel with a "Health Certificate" are allowed to work.

SALMONELLOSIS IN ARUBA

Yearly there are about an average of 30 notifications of Salmonella cases. As it is illustrated in figure 45, 2005 had the largest number of notifications of Salmonella infection, in this year Aruba experienced a Salmonella outbreak with the Salmonella Oranienburg bacteria at a local restaurant.

From 2005 to 2010 a selection was made of the Salmonella cases which were detected in the regular community acquired, and food handlers. These cases were analyzed by age categories.

As figure 46 shows Salmonellosis notification from the community are present in each age category varying from babies to the elderly. As expected, the age category of Salmonella cases among food handlers varied between the ages of 15 to 64 years. During this same period notifications from the regular community were higher as compared to the food handlers, 59.1percent and 40.9 percent respectively.

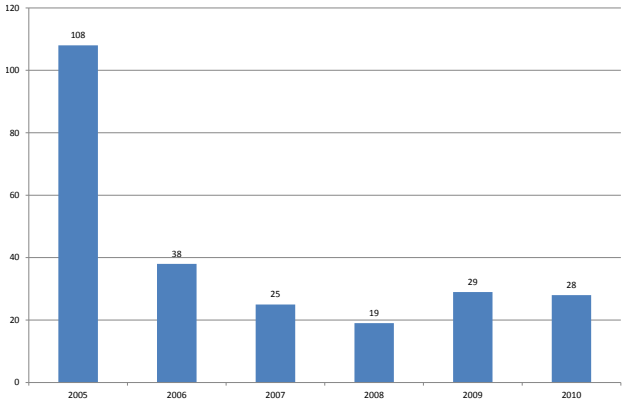


FIGURE 45. NOTIFIED SALMONELLA CASES, ARUBA 2005-2010.

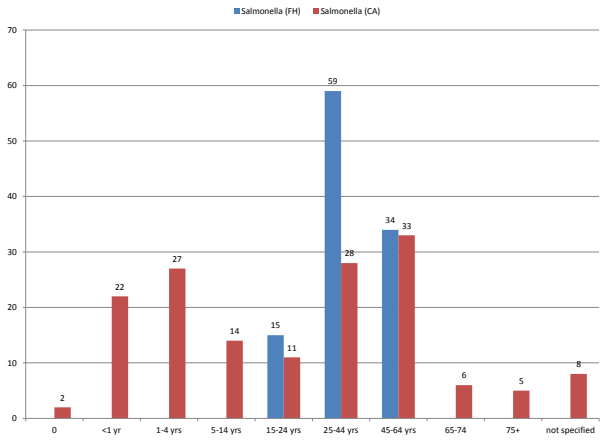


FIGURE 46. NOTIFIED SALMONELLA CASES BY AGE CATEGORY, ARUBA 2005-2010.

3.4.5.2 SHIGELLOSIS

Shigellosis is also a food borne disease but is caused by a group of bacteria called Shigella. Shigellosis presents itself with bloody diarrhea. Among the few symptoms present are fever and stomach cramps. Some individuals who are infected may not develop any symptoms, but may still infect others with the bacteria. Transmission occurs from person to person but also through contaminated food.

Yearly there is an average of 14 notifications of Shigellosis. Compared to Salmonellosis the prevalence of Shigellosis is lower.

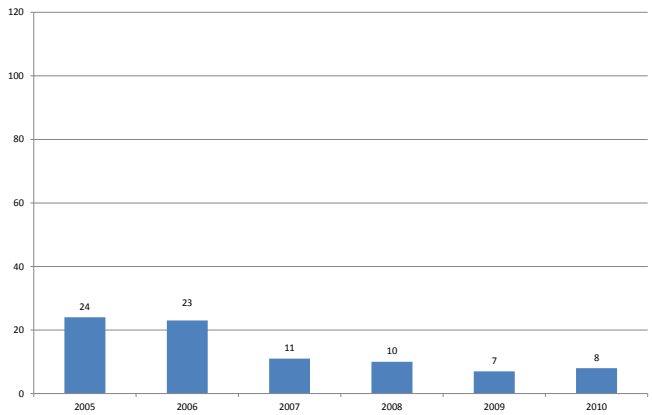


FIGURE 47. SHIGELLOSIS NOTIFICATIONS PER YEAR.

Based on figure 48 below, we conclude that the majority of the community acquired Shigellosis cases are between 1-14 years of age. Furthermore, the food handlers Shigellosis cases are all between the ages of 15-64 years, with a peak occurrence of Shigellosis cases in the 25-44 age categories.

However the percentages of Shigellosis notifications between food handlers and community acquired differ from the Salmonellosis percentages. Food handlers accounted for only one third of the notifications during 2005 to 2010, while the regular community acquired accounted for about 70 percent of the notifications.

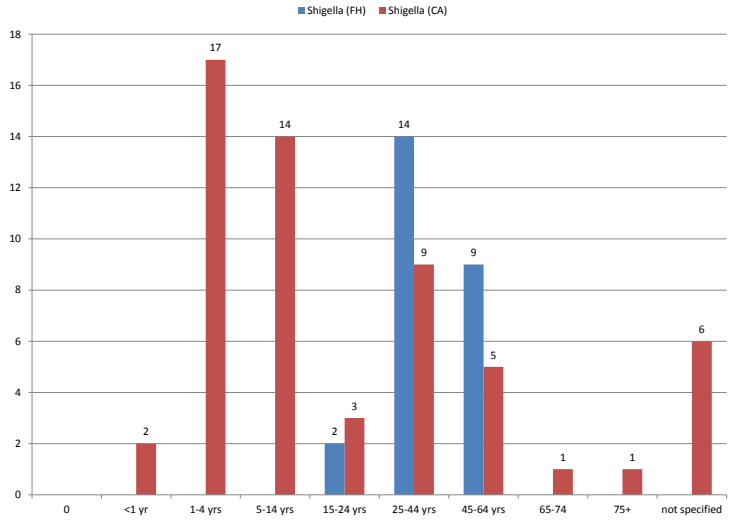


FIGURE 48. SHIGELLOSIS NOTIFICATIONS BY AGE CATEGORY, ARUBA 2005-2010.

3.5 VACCINATIONS

3.5.1 VACCINATIONS INFANTS

Through the years, vaccination has proven to be among the most cost-effective, cost-beneficial, high-impact action most widely accepted by society for the improvement of the people's health. More than half of the gains in reducing child mortality in Latin America and the Caribbean in recent years are attributable to immunization.

Basic vaccination services are free in Aruba. The Youth Health Care Unit of the Department of Public Health vaccinates infants at the White and Yellow Cross clinics located at the six different districts on the island. Even though these vaccinations at the clinics are also available to the four year olds, only 70% are actually vaccinated here. The remaining 30% receive their vaccines through the yearly school vaccination-campaigns which are also managed by the Youth Health Care Unit of the Department of Public Health.

Children are vaccinated against the following diseases; *Diphtheria, Pertussis, Tetanus, Poliomyelitis (DPTP), Hepatitis B, Pneumococcal disease, Heamophilus influenza type b infections (Hib), Measles, Mumps and Rubella (MMR)*. Table 7 shows the different vaccine phases by age and vaccine.

Phase	Age	Vaccine 1	Vaccine 2
Phase 1	1 month	Hep B	
	2 months	DPT/IPV/HIB	PCV
	3 months	Hep B	
	4 months	DPT/IPV/HIB	PCV
	6 months	DPT/IPV/HIB	
	9 months	Hep B	
	12 months	PCV	MMR
	15 months	DPT/IPV/HIB	
Phase 2	4 years	DP/IPV	
Phase 3	10 years	MMR	DP/IPV

TABLE 7. VACCINATION PROGRAMME YOUTH HEALTH CARE OF THE DEPARTMENT OF PUBLIC HEALTH.

Basic vaccinations consist of three DPTP Hib and Hepatitis B vaccinations, and one MMR vaccination. This basic vaccination should be completed by the age of 2. In the fifth year of life the DP/IPV booster should be administered.

Coverage of babies/toddlers registered at WYC (undocumented children excluded)*

2 years	2007	2008	2009	2010	2011
DPTP HiB3 (basic cover-age)	98,9%	98,7%	98,7%	98,8%	96,8%
DPTP HiB 4	96,1%	96,2%	96,0%	94,9%	92,4%
MMR1	94,8%	95,2%	96,0%	92,7%	93,4%
HEP B3	97,2%	97,2%	96,7%	96,6%	93,9%

TABLE 8. VACCINATION COVERAGE 2 YEAR-OLDS.

A 95 percent vaccine coverage is considered a high density of immunized persons in a population, which offers sufficient protection for the unvaccinated, this is called herd immunity. This high coverage has been maintained in Aruba throughout the past years except during 2010/2011 for the Measles, Mumps and Rubella vaccine and in 2011 for the Hepatitis B vaccine.

3.5.1.1 VACCINATION PRESCHOOL AND PRIMARY SCHOOL CHILDREN

Pre-school and primary school children are vaccinated during the school-based vaccination campaign which is held yearly. This campaign targets children in the second year of preschool, and in the first and fifth grade of primary school. The coverage of MMR and DP/IPV of the school population after school vaccination campaign is illustrated in tables 9 and 10.

5 years	2007-2008	2008-2009	2009-2010	2010-2011
DP/IPV	97,4%	98,5%	97,1%	96,5%
MMR	98.3	97.8	98.2	98.5

TABLE 9. VACCINE COVERAGE IN 5 YEAR OLD BY TYPE VACCINE PER SCHOOL YEAR.

10 years	2007-2008	2008-2009	2009-2010	2010-2011
DP/IPV	98,1%	97,8%	95,8%	97,0%
MMR	98,2%	97,8%	96,0%	97,4%

TABLE 10. VACCINE COVERAGE IN 10 YEAR OLD BY TYPE VACCINE PER SCHOOL YEAR.

Children with learning-difficulties attending special schools in Aruba are vaccinated at the age of 10.

3.5.2 VACCINATION RISK GROUPS

Vaccination of risk groups such as international travelers and work related high risk group is a highly effective method of preventing certain infectious diseases. In terms of public health, prevention is better and more cost-effective than cure. These vaccinations not only protect against many travel-related infections, such as yellow fever, tetanus and hepatitis A, but also prevent the importation of these rare diseases onto the island.

Protection against work related risk infections, such as Hepatitis B and Tetanus is also achieved with vaccination of this risk group.

International travel is overwhelmed by a large and increasing number of individuals for professional, social recreational and humanitarian purposes. Travelers are as such exposed to a variety of health risk in unfamiliar environments.

Healthcare workers, law enforcement and other type of personnel may be exposed to risks of contracting infections with certain vaccine preventable diseases. The Services of Infectious Diseases of the Department of Public Health sells vaccinations to travelers, work related risk groups and individuals.

In Aruba the most common reason for the request of a vaccination amongst the adult population are international Travel vaccinations for students, USA Visa requests and travels for vacation purposes.

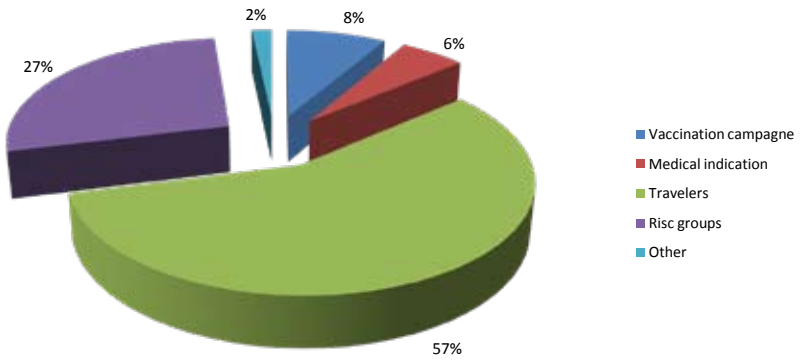


FIGURE 49. DIFFERENT REASONS FOR VACCINATION REQUEST, ARUBA 2010.

Figure 50 shows the many different types of vaccines sold during 2010 by the Service of Infectious Diseases. The most common vaccine sold is against Yellow Fever followed by DTP, Hep B and Vaxigrip.

As mentioned above, the Service of Infectious Diseases sells to and vaccinates work groups who are at risk. These include governmental organizations as well as nongovernmental organizations.

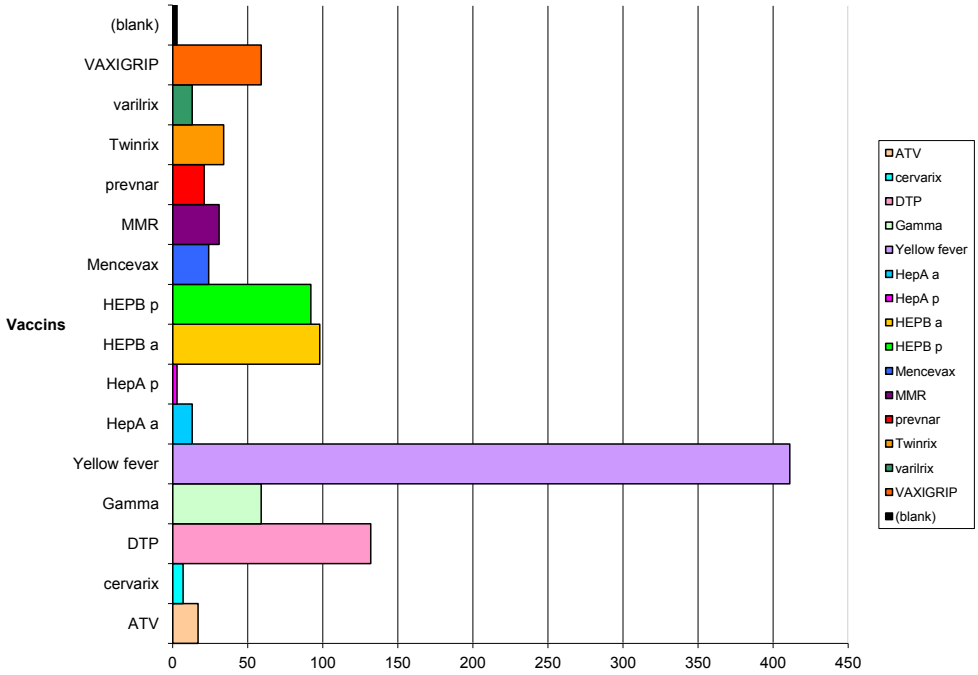


FIGURE 50. SOLID VACCINE DURING 2010

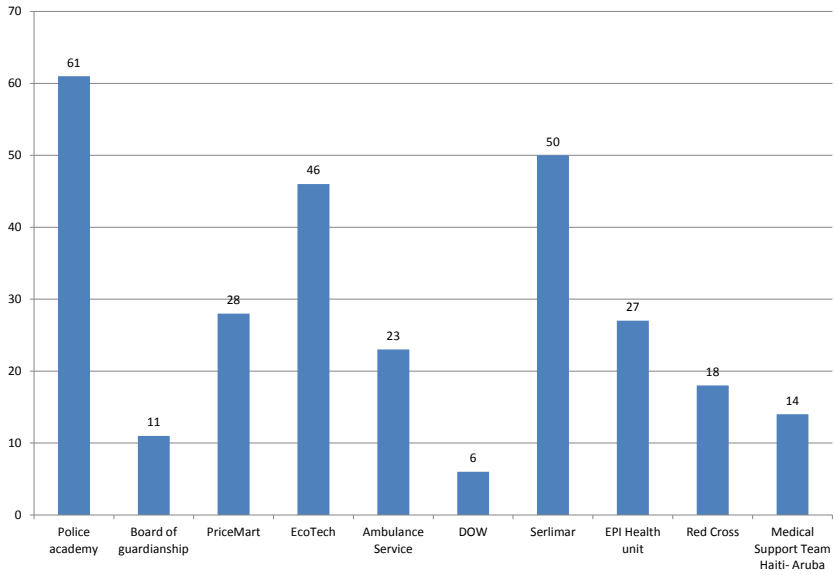


FIGURE 51. DIFFERENT SECTORS RECEIVING VACCINATIONS, ARUBA 2010.

Figure 51 illustrates the different sectors receiving vaccinations on a routine basis. To make vaccines accessible to the population of Aruba, the Department of Public Health purchases vaccines through the revolving funds of PAHO. This purchase through PAHO makes vaccines more accessible because of the attractive price offered.

4

4. MENTAL HEALTH

According to World Health Organization, the burden of mental health illnesses is continuously growing. Mental and behavioral health disorders are common, affecting more than 25 percent of all people at some time during their lives and are present at any point in time in about 10 percent of the population. Depression is an important global health problem due to both its relatively high lifetime prevalence and the significant disability that it causes. By 2030, depression will be one of the leading causes of disease along with HIV/AIDS and heart disease (VicHealth, 2012).

4.1 PSYCHIATRIC CARE

The only authorized organizations in Aruba that provide specialized *psychiatric care are the Psychiatrische Afdeling Algemeen Ziekenhuis* (Psychiatric department of the General Hospital / PAAZ), *Sociaal Psychiatrische Dienst* (Social Psychiatric Unit/ SPD of the Department of Public Health), *Vrijgevestigde psychiaters* (Independent Psychiatric Practitioners/ Balance) and the *Coördinatie Bureau Drugs Bestrijding* (Drug Prevention Coordination Bureau/ CBDB). The SPD and Balance are the two organizations that provide specialized service to the majority of the population in need of mental health care. Balance has the highest absolute number of patients (Staring, 2010).

According to the study by J. Staring the two major diagnoses, amongst the participant population (excluding PAAZ patients) 18 years and older, are schizophrenia and have other psychotic disorders and mood disorders as can be seen in table 11. Together these two general diagnoses are responsible for 61.3 percent of the top ten diagnoses studied in the population. Other disorders that follow are bipolar disorders (7 %), anxiety disorders (6 %) and opioid disorders (4 %).

Grouped Diagnoses	n	%
Schizophrenia and other psychotic disorders	284	34.2
Mood disorders	225	27.1
Bipolar disorders	56	6.7
Anxiety disorders	49	5.9
Other/unknown	40	4.8
Opioid-related disorders	34	4.1
Personality disorders	32	3.9
Adjustment disorders	22	2.6
Sleep disorders	13	1.6
Impulse-control disorders *(Not elsewhere classified)*	13	1.6

TABLE 11. FREQUENCY AND PERCENTAGE OF TOP 10 DIAGNOSES.

In the table above, approximately 284 persons were diagnosed with schizophrenia (excluding PAAZ) in the Aruban population. About one in five of the participant population who suffered from schizophrenia and other psychotic disorders was between 50 and 55 years of age (figure 52).

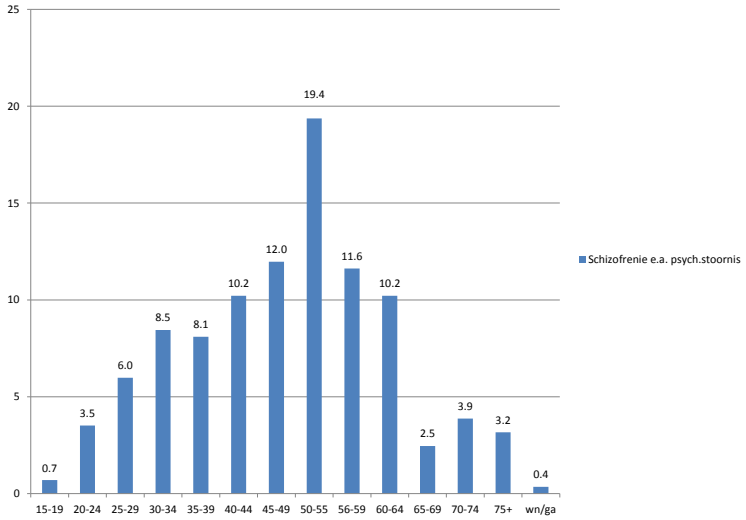


FIGURE 52. SCHIZOPHRENIA AND OTHER PSYCHOTIC DISORDERS BY AGE CATEGORY IN PERCENTAGE, ARUBA 2010.

As shown in figure 53 schizophrenia was more common among men than women. When compared to the United States of America (USA Schizophrenia affects men and women with equal frequency (NHIMH, n.d.). In the Netherlands it is more common among men than women; however this was reversed for the ages 60 years and older.

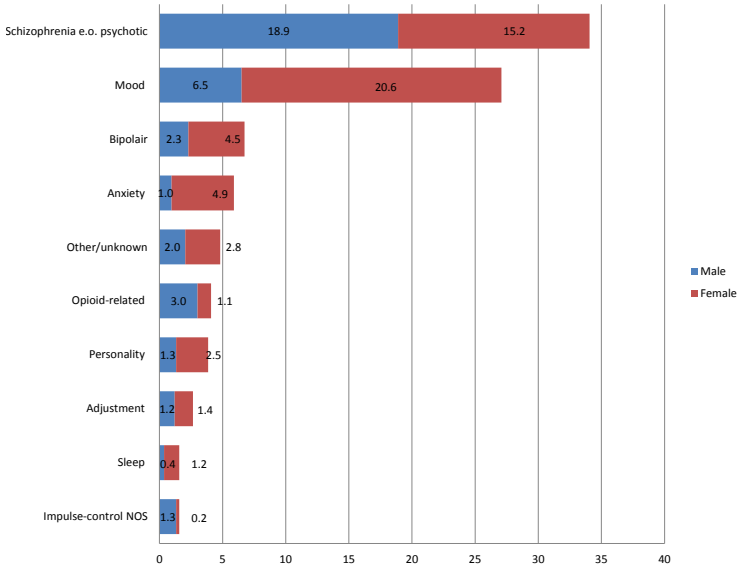


FIGURE 53. PERCENTAGE DIAGNOSES DSMV-IV BY SEX, ARUBA 2010.

As for mood disorders, these disorders may involve depression only (also referred to as "unipolar depression") or they may include manic episodes (as in bipolar disorder, which is classically known as "manic depressive illness"). Individuals with mood disorders suffer significant distress or impairment in social, occupational, educational or other important areas of functioning. Worldwide, major depression is the leading cause of years lived with disability, and the fourth cause of disability-adjusted life years (DALY's) (PHAC, 2002).

As depicted in table 11 approximately 225 persons have mood disorders representing 27 percent of the total diagnoses studied in the Aruban population. As seen in figure 54 these disorders are more frequent in the age group 45-49 years of age. Furthermore, mood disorders are by far more common among the female population than the male population (figure 53).

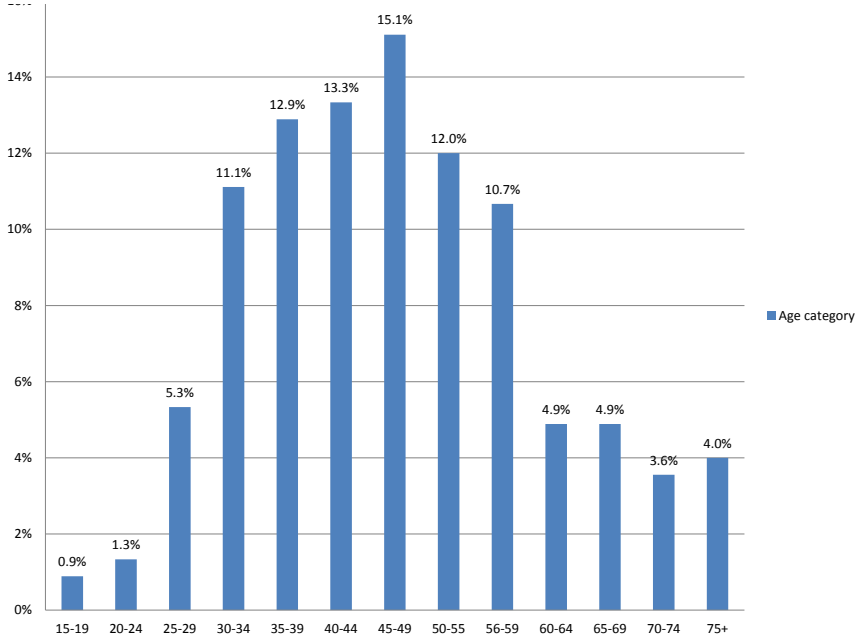


FIGURE 54. MOOD DISORDERS PER AGE CATEGORY

As mentioned before mood disorders include Major Depressive Disorder. According to the National Institute of Mental Health this disorder is the leading cause of disability in the United States of America for ages 15-44. Major Depressive Disorder affects approximately 14.8 million American adults, or about 6.7 percent of the U.S. population age 18 and older in a given year.

4.2 SELF REPORTED MENTAL HEALTH

According to the STEPS survey conducted in 2006 there was an increase recorded in 2006 of number of persons with psychological issues including, loneliness, sleep problems, and anger compared to 2001. The respondents scored particularly high on sleeplessness (18 %), loneliness (19.3 %) and anger (18.6 %). Typically, women have higher rates of depression and anxiety disorders. On the other hand men have higher levels of substance abuse or anti-social disorders.

Self reported psychological problems STEPS investigation 2006:

- 1 in 4 persons aged 25-64 years complained about psychological problems(stress, depression and fear)
- Women have more complaints about their mental well-being than men; and younger adults more than persons 55-64 years of age.
- People with lower education are twice more likely to indicate they have mental problems than persons with VWO or higher.
- People who think of themselves as being fat have twice the likelihood of complaining about psychological problems.
- Psychological complaints are closely related to high blood pressure and cholesterol.
- Psychological well being and physical health proved to be connected. Psychological problems were found to be closely related to headaches/migraines and stomach ailment.
- 1 in 5 persons have problems with sleeping.
- 1 in 5 persons often feel lonely.

4.3 SUICIDAL BEHAVIOR

Every year, almost one million people die from suicide; a "global" mortality rate of 16 per 100,000 or one death every 40 seconds. Although traditionally suicide rates have been highest among the elderly male, rates among young people have been increasing to such an extent that they are now the group at highest risk worldwide.

The countries with the highest suicide rates are those in Eastern Europe such as Estonia, Latvia, and Lithuania.

Mental disorders (particularly depression and alcohol abuse disorders) are a major risk factor for suicide in Europe and North America. Suicide is complexed with psychological, social, biological, cultural and environmental factors involved. The World Health Organization estimates for the year 2020, 1.53 million people will die from suicide, and 10 - 20 times more people will attempt suicide worldwide. This represents an average of one death every 20 seconds and one attempt every 1-2 seconds, making suicide a serious public health issue.

4.3.1 SUICIDE

According to mortality data from the Department of Public Health of Aruba from 2000 through 2009 a total of 61 persons died as a result of suicide, an average of 6 persons per year, see figure 55.

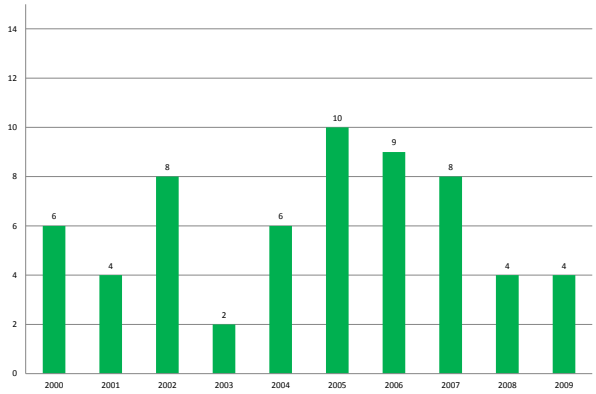


FIGURE 55. NUMBER OF SUICIDES PER YEAR, ARUBA 2000-2009.

It was exceptionally more frequent among men than women, on average 5 males versus 1 female per year. Mortality due to suicide occurred mostly among the age group of 30 – 39 years. The prevalence of suicide in Aruba in 2009 was of 3.6 per 100,000 inhabitants, see figure 56.

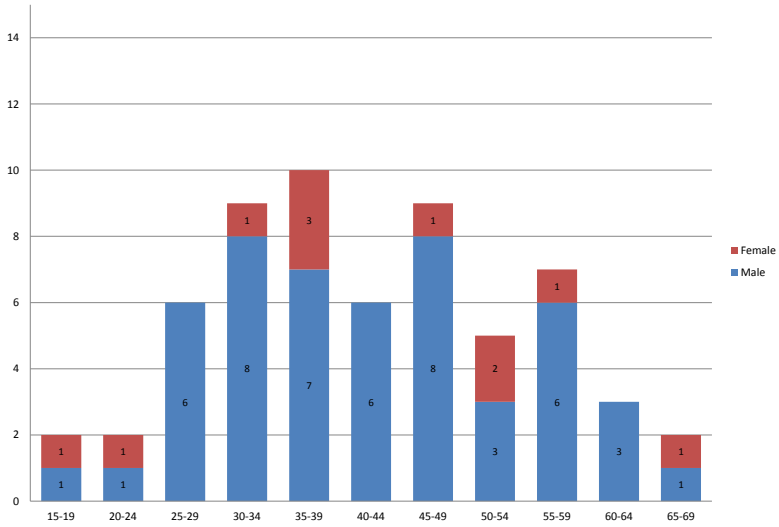


FIGURE 56. SUICIDES BY AGE AND SEX ARUBA, 2000-2010.

In the Netherlands during the period of 2003-2007 an average of 1000 men and 470 women committed suicide. In 2011 the suicide rate was 9.9 per 100.000 inhabitants. Suicide was more frequent among men, mainly between the ages of 40-60 years.

In the U.S. the overall rate was 11.3 suicide deaths per 100,000 people. Almost four times as many males as females die by suicide. In 2007, it was also the third leading cause of death for young people ages 15 to 24.

4.4 PARA SUICIDE (ATTEMPTED SUICIDE)

As many studies done worldwide showed that parasuicide is an apparent attempt at suicide, commonly called a suicidal gesture, in which the aim is not death. For example, a sub lethal drug overdose or wrists slash. Parasuicidal behavior refers to suicidal attempts or other deliberate self-inflicted injuries with or without suicide intent. Parasuicide behavior is considered as a risk factor for suicide. Borderline personality disorder (BPD) is highly associated with parasuicidal behavior.

Para suicide is more common among women, particularly women younger than 45 years, and to be more specific those women between the ages of 15 and 25 years. This is in contrast with suicide, where men are the majority. The highest rates of parasuicide are found in divorced women, single, or teenage wives, and is often linked to poverty. Most cases of parasuicide are associated with mental health problems, particularly: depression, alcoholism and personality disorder.

Other factors that make an act of parasuicide more likely include:

- Relationship Problems
- Being Unemployed
- Being Physically ill, particularly epileptic
- Being Mentally Handicapped
- Being Neglected or Abused by Parents
- Having a Parent deceased at a young age
- Coping with a loved one's illness

According to data obtained from the H. Oduber Hospital 38 persons were hospitalized in 2009 for attempted suicide of which 21 were female and 17 were male. In 2010 this number increased to 53 persons, of whom 31 were female and 22 male (Figure 57).

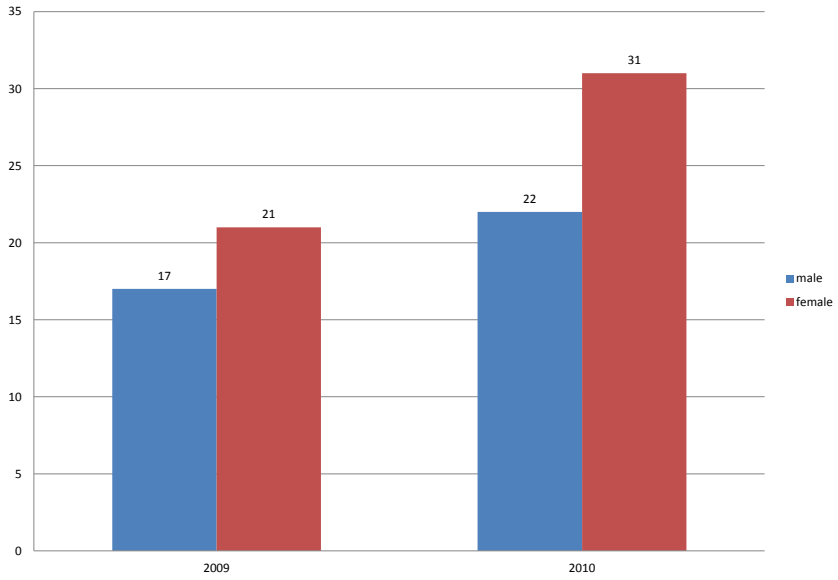


FIGURE 57. ATTEMPTED SUICIDES BY GENDER, ARUBA 2009.

During 2009 most of the cases of attempted suicide, 23.6%, occurred in the age category of 25-29 years. In 2010 the age category in which most of the cases occurred, 26.4%, was 15-19 years, see figure 58.

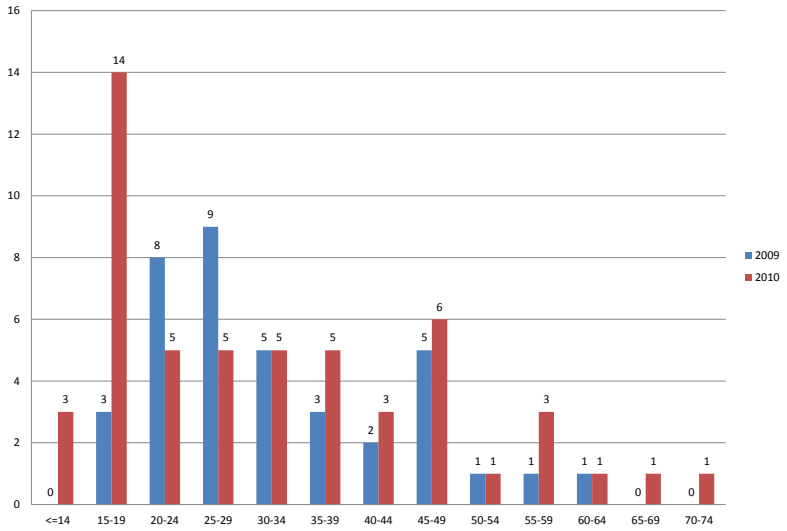


FIGURE 58. TEMPTED SUICIDE BY AGE CATEGORY, ARUBA 2009-2010.

The most frequent means used to attempt suicide in 2009 was by ingesting analgesics, antipyretics and antirheumatics. In 2010 the most frequent means were other specified drugs and medicinal substances, see figure 59 below.

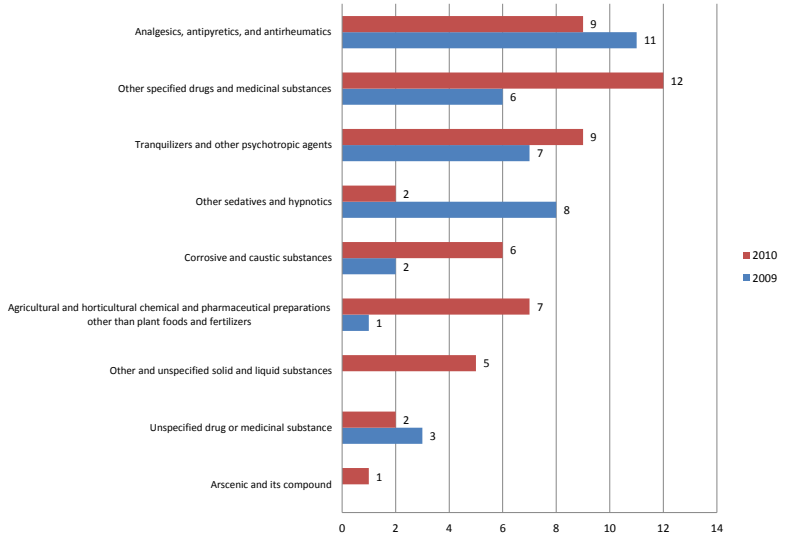


FIGURE 59. MEANS TEMPTED SUICIDE, ARUBA 2009-2010.

5

5. LIFESTYLE

5.1 PHYSICAL ACTIVITY

Lack of physical activity is a major risk factor for developing chronic non-communicable diseases. According to estimations of the WHO, physical inactivity is the direct cause of 10 to 16 percent of all cases of breast cancer, colon cancers, and diabetes and of 22 percent of all cases of ischemic heart disease (WHO, 2003). On the other hand, regular physical activity is associated with a wide range of physical, social, economic, and mental health benefits.

In Aruba, the most recent figures on the physical activity of the population were obtained via the 2006 STEPS Aruba Risk factor & Behavior Survey which assessed the risk factors associated with the development of chronic non-communicable diseases in persons between 25 and 64 years of age. The data obtained indicated that these individuals spent, on average, 2 hours and 17.7 minutes per day on physical activity, which included time spent doing physical activity at work, travelling from one place to another and recreating. The majority of this time was spent on low and moderate levels of physical activity. Only 9.5 minutes per day were spent on high levels of physical activity (see Figure 60 A).

On the other hand, more than 4 hours and 58.6 minutes per day were spent on sedentary activities, including sitting and reclining at home, sitting at a desk, travelling in a car, watching television (see Figure 60 B). Overall, those who reported spending significantly less time on physical activities were: women, persons born in Aruba, persons between 55 and 64 years of age and persons who were not employed.

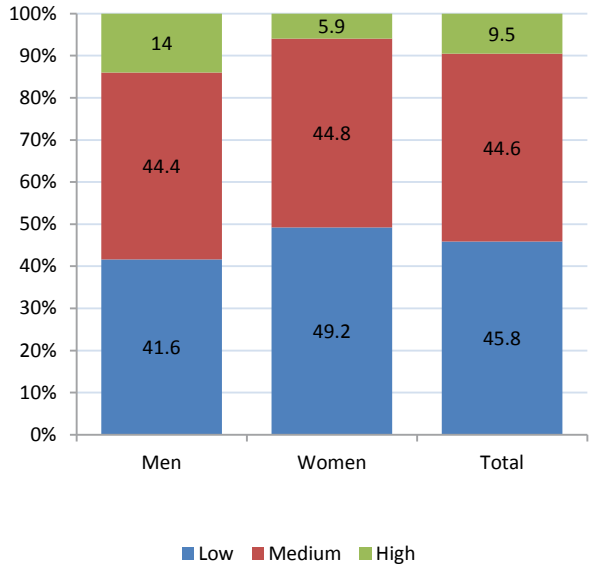


FIGURE 60 A. THE PROPORTION OF TIME SPENT PER DAY ON LOW, MODERATE AND HIGH LEVELS OF PHYSICAL ACTIVITY.

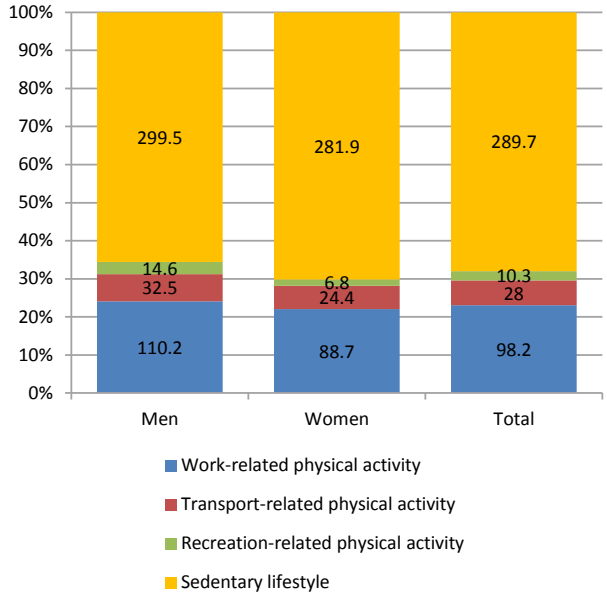


FIGURE 60 B. THE PROPORTION OF TIME SPENT PER DAY ON DIFFERENT TYPES OF PHYSICAL ACTIVITY.

5.1.1 WORK-RELATED PHYSICAL ACTIVITY

In a typical week, persons between 25 and 64 years of age reported spending 1 hour and 38.2 minutes per day on work-related physical activity. The time spent on work-related physical activity was primarily related to occupation, skilled agricultural workers and fishery workers, craft and related trade workers and persons with elementary occupations reported spending significantly more time per day on work-related physical activity. Those who reported spending significantly less time per day on work-related physical activities were: professionals, associate professionals, technicians and clerks.

Overall, more time was spent per day on moderate levels of work-related physical activity (57.4 minutes per day) than on vigorous levels of work-related physical activity (40.4 minutes per day), women spending twice as much time on moderate levels of work-related physical activity than on vigorous levels of work-related physical activity.

5.1.2 TRANSPORT-RELATED PHYSICAL ACTIVITY

For transport-related physical activity, persons between 25 and 64 years of age reported spending, in a typical week, 28.0 minutes per day on activities such as walking or using a bicycle to travel from one place to another. Overall, the results of the STEPS 2006 Risk Factor Behavior Survey showed that employed persons, persons living in the upper central area of Aruba (Santa Cruz), and persons with a low personal income reported spending significantly more time on transport-related physical activity.

5.1.3 RECREATION-RELATED PHYSICAL ACTIVITY

On average, the STEPS 2006 revealed that 10.3 minutes per day were spent on recreation-related (leisure) physical activities, such as walking, cycling, swimming, volleyball and football. Men reported spending significantly more time on recreation-related physical activities than women and younger persons reported spending more time on recreation-related activities compared to older persons.

5.1.4 SEDENTARY ACTIVITIES

Overall, persons between 25 and 64 years of age reported spending the majority of their time on sedentary activities, such as sitting and reclining at home, or with friends, sitting at a desk at work, travelling in a car, reading, playing computer games, and watching television. In total, 4 hours and 49.7 minutes per day were spent on sedentary activities. Persons between 35 and 44 years of age, persons born in Aruba, and persons with a high level of education reported spending significantly more time on sedentary activities.

5.2 NUTRITION

Unhealthy diet is clearly related to a range of risk factors that are directly or indirectly related to the development of chronic health conditions, such as cardiovascular disease, stroke, high blood pressure, high blood cholesterol, type 2 diabetes, bowel conditions, and certain types of cancer.

Overconsumption of foods in general and of energy-rich products in particular, is the root of the problem. Food products high in fats, salt and sugar, and low in dietary fibers, complex carbohydrates, and essential vitamins and minerals are nowadays in most westernized countries part of the daily menu.

5.2.1 THE CONSUMPTION OF FRUITS AND VEGETABLES

According to the World Health Organization, low fruit and vegetable intake is among the top 10 risk factors contributing to global mortality. Nutritional experts (WHO, CDC) recommend consuming at least 400 grams (5 servings) of fruits and vegetables per day for the prevention of chronic diseases. In Aruba, the STEPS 2006 Health Survey revealed that persons between 25 and 64 years of age reported consuming fruits on an average 4 days per week and vegetables on an average of 6 days per week. Compared to data obtained during the 2001 Health Survey this indicates a slight decrease in the consumption frequency of fruits and a slight increase in the consumption frequency of vegetables (see Figure 61 A).

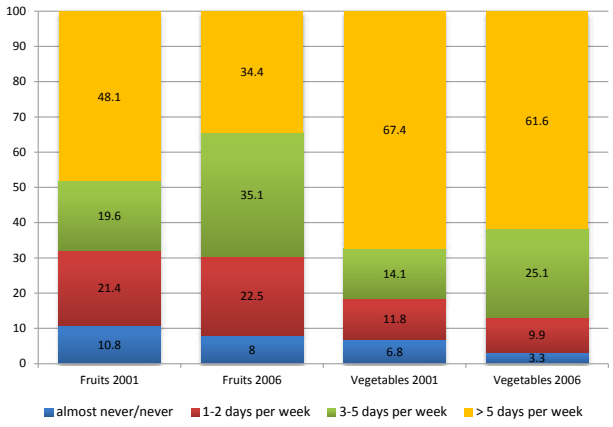


FIGURE 61 A. THE FREQUENCY OF CONSUMPTION OF FRUITS AND VEGETABLES, ARUBA 2001-2006.

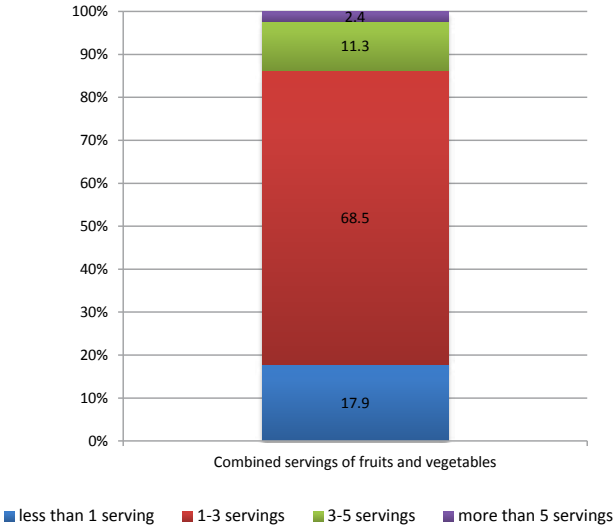


FIGURE 61 B. THE NUMBER OF COMBINED SERVINGS OF FRUITS AND VEGETABLES, 2006

However, participants to STEPS 2006 reported consuming on average only 0.8 servings of fruit and 1 serving of vegetables per day. The majority reported consuming between 1 and 3 combined servings of fruits and vegetables per day. Only 2.4 percent reported adhering to the recommended 5 combined serving of fruits and vegetables per day. The results indicated furthermore that both the frequency and the number of fruits consumed were related to age, sex, country of birth, and level of education. Women, persons between 55 and 64 years of age, persons not born in Aruba and persons with a high level of education consumed fruits on a higher frequency and in larger amounts. Where the consumption of vegetables was concerned, the level of education was the sole variable related to both the frequency and the number of vegetables consumed. Persons with a higher level of education reported consuming vegetables on a higher frequency and in larger amounts.

5.2.2 USE OF OIL OR FAT FOR MEAL PREPARATION

The relationship between the intake of dietary fats and chronic non-communicable diseases has been extensively studied, particularly where cardiovascular disease is concerned. Research indicates that the intake of dietary fats strongly influences the risk of cardiovascular disease. The intake of saturated fatty acids, in particular, is directly related to cardiovascular risk. In addition, a high intake of saturated fats has been linked to a higher risk of impaired glucose tolerance, and higher fasting and insulin levels. The STEPS 2006 revealed that the majority (82.4 percent) of persons between 25 and 64 years of age used vegetable oil for meal preparation. Only 0.4 percent reported using mostly lard (see Figure 62).

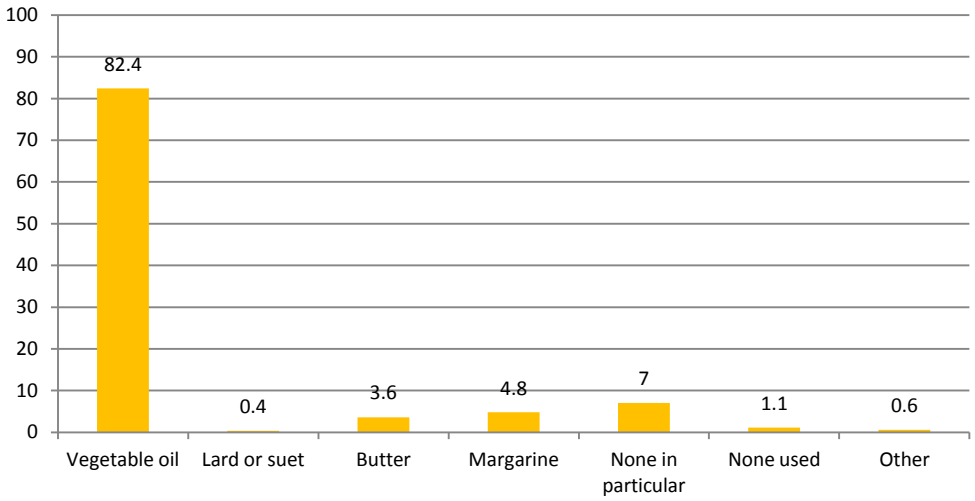


FIGURE 62. PERCENTAGE USING CERTAIN TYPES OF OIL OR FAT MOST OFTEN FOR MEAL PREPARATION.

5.3 WEIGHT AND OVERWEIGHT

Since 1980 obesity has more than doubled worldwide. More than 1.4 billion adults (older than 20 years) were overweight in 2008. Of these, more women compared to men were overweight, 300 million and 200 million respectively (WHO, 2012). 65% of the world population lives in countries where obesity kills more people compared to underweight. Not forget to mention that more than 40 million children under the age of five are overweight (WHO, 2012).

WHO defines overweight as the following:
- BMI greater than or equal to 25 is overweight
- BMI greater than or equal to 30 is obese.

The BMI or Body mass index is a simple index for weight-height used for classification of overweight and obesity.

$$BMI = \frac{\text{Weight in Kg}}{(\text{height in m})^2}$$

5.3.1 OVERWEIGHT AND OBESITY – SCHOOL POPULATION

All school children in Aruba undergo a health-screening at school done by the Youth Health Care Unit of the DPH during the second year of pre-school and in the 5th grade of primary school. Part of this screening consists of weighing, measuring and calculating Body Mass Index (BMI).

Aruba has a high percentage of overweight and obesity among the adult population as showed by the STEPS Aruba Risk Factor & Behavior Survey. Among schoolchildren, the fifth graders, these percentages are also elevated.

Weight status Preschool 2007-2010

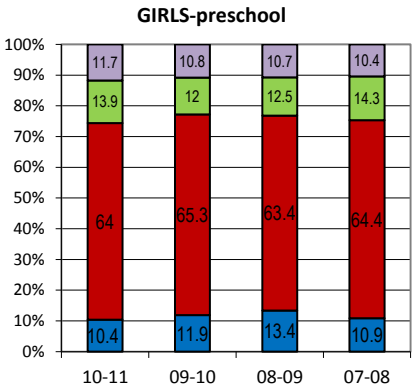
	2007		2008		2009		2010	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
n	624	652	590	619	528	638	633	678
Underweight	10.9%	13.3%	13.4%	14.9%	11.9%	15.7%	10.4%	11.1%
Normal weight	64.4%	61.3%	63.4%	64.1%	65.3%	63.9%	64.0%	71.1%
Overweight	14.3%	12.0%	12.5%	10.2%	12.0%	11.6%	13.9%	9.4%
Obese	10.4%	13.3%	10.7%	10.8%	10.8%	8.8%	11.7%	8.4%

TABLE 12. PERCENTAGE WEIGHT STATUS PRESCHOOLERS BY GENDER, ARUBA 2007-2010.

Table 12 shows that from 2007 to 2010, the percentage of boys who are overweight has slowly decreased, this is the same for boys who are obese. However the decrease in the percentage of obese boys was more steadily as compared to the decrease in the percentage of overweight boys.

The percentage of girls in preschool who are overweight decreased slightly and was followed by an increase during this same period of time. The percentage for obese girls is showing a slight increase from 2007 to 2010, from 10.4 percent to 11.7 percent, see figure 63.

GIRLS IN PRESCHOOL



BOYS IN PRESCHOOL

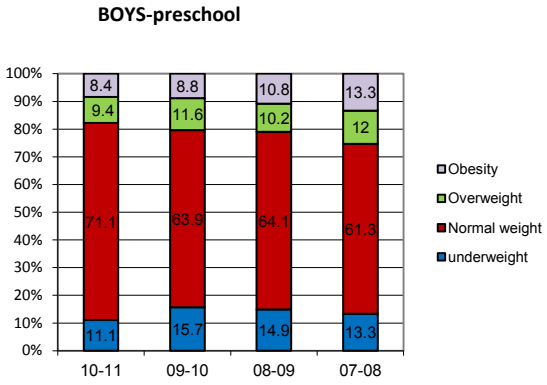


FIGURE 63. PERCENTAGE OF OBESITY AND OVERWEIGHT IN PRESCHOOL CHILDREN, ARUBA 2007-2010.

The percentages of overweight and obese boys seem to decrease over the years contrary to the percentages of the girls which seem to be increasing. Overall the percentages of girls who are overweight and obese are higher than the boys. This is similar to the international findings of Markus and Hirasing 2010 (Markus & Hirasing, 2010).

Weight status 5th grade 2008-2010

	2008		2009		2010	
	Girls	Boys	Girls	Boys	Girls	Boys
n	546	553	703	698	538	557
Underweight	7.3%	6.0%	8.1%	6.6%	6.1%	5.4%
Normal weight	53.8%	54.6%	53.3%	48.1%	50.9%	52.2%
Overweight	23.3%	20.8%	25.2%	26.9%	26.6%	27.5%
Obese	15.6%	18.6%	13.4%	18.3%	16.4%	14.9%

TABLE 13. PERCENTAGE WEIGHT STATUS 5TH GRADERS BY GENDER 2008-2010.

Fifth graders have higher percentages of overweight and obesity as compared to the preschoolers. During 2008 to 2010, the percentage of overweight boys increased from 20.8 percent in 2008 to 27.5 percent in 2010. However the percentage of obese boys have decreased during this same period from 18.6 percent to 14.9 percent, see table 13.

Again girls in the 5th grade show a different trend in overweight and obesity, where the percentage of overweight girls increased from 23.3 percent in 2008 to 26.6 percent in 2010, this is a 3.3 percent increase. Also the percentage of obese girls has also increased during this same period, from 15.6% to 16.4%, see figure 64.

GIRLS IN PRESCHOOL

BOYS IN PRESCHOOL

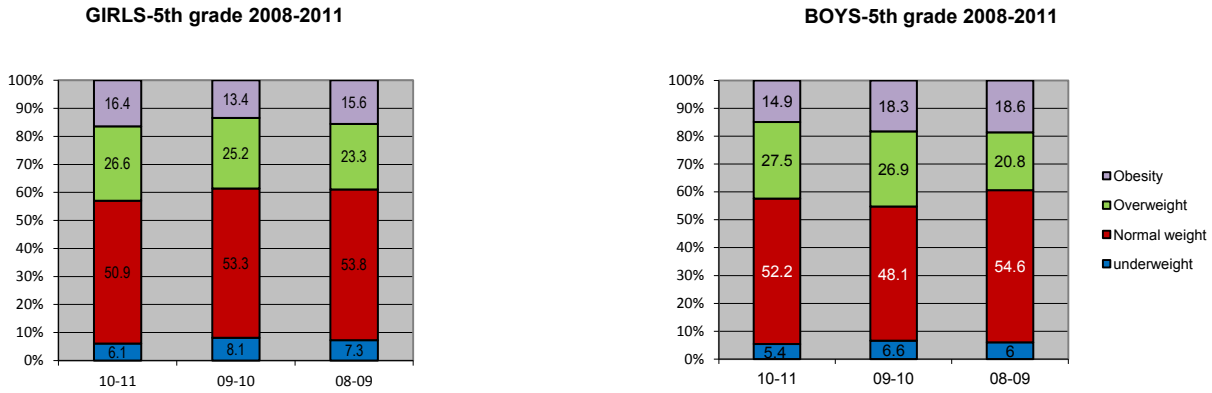


FIGURE 64. PERCENTAGES OF OBESITY AND OVERWEIGHT IN 5TH GRADE SCHOOL CHILDREN, ARUBA 2008-2010.

It is noted overall that preschoolers have a higher percentage of boys and girls who have a normal weight. A proportion of about 10% becomes overweight in the 5th grade. This is showed in the high percentage of overweight boys and girls in the 5th grade.

5.3.2 OVERWEIGHT ADULTS

In 2001, the Health Survey showed that Aruban men between 25 and 64 years old weighed on average 86.6 kg, while women weighed 74.3 kg. Their average lengths were respectively 1.73 and 1.61 meter. The STEPS-survey conducted in 2006 found exactly the same average length for men and women as in 2001. However, the mean weight of men had increased to 90.4 kg. Women remained more or less at the same weight (74.6 kg).

Table 14 presents the average BMI-values for persons by age and sex. The STEPS research shows that in 2006 Aruba has reached the point where the average adult male is obese. The average BMI-value for males aged 25-64 years is currently 30, for females this is 28.8. In 2001, the Health Survey found an average BMI of 29.0 for men and 28.9 for women. From a young age on, the average male is seriously overweight. In age-group 25-34 years, the mean BMI is already 29.8. At that age women are also overweight, but to a lesser extent than men (BMI 27.0).

Average BMI-values by age and sex (2006)			
Age Group	Men	Women	Total
25-34 yrs	29.8	27	28.3
35-44 yrs	30.5	28.4	29.3
45-54 yrs	29	30.3	29.7
55-64 yrs	31.4	30.2	30.7
25-64 yrs	30	28.8	29.3

TABLE 14. AVERAGE BMI VALUES BY AGE AND SEX, STEPS ARUBA 2006.

5.3.2.1 THE SUPER OBESE

The International Classification of adult underweight, overweight and obesity according to BMI of the World Health Organization further divides the obesity group into the following categories:

- Category I with BMI 30 - 34.9
- Category II with BMI 35 – 39.9
- Category III with BMI > 40

BMI-categories including subcategories obesity, by sex			
	Men	Women	Total
	%	%	%
BMI < 20	1.1	4.2	2.8
BMI < 20-24.99	16.1	23.8	20.5
BMI <25-29.99	36.1	36	36.1
BMI <30-34.99	30.8	21.6	25.5
BMI <35-39.99	11.7	7.7	9.4
BMI 40+	4.2	6.8	5.7
Total	100.0	100.0	100.0
No of cases	326	488	814

TABLE 15. BMI CATEGORIES INCLUDING SUBCATEGORIES OBESITY, BY SEX.

The above table shows the percentage of males and females by BMI-categories, including the three obesity subcategories. It is very worrisome that no less than 15.1 percent of Aruba's adult population between 25 and 65 years fall within the categories of obesity with very high or extreme high health risks. A higher proportion of men than women fall within the category of obesity with high health risk (30.8 percent against 21.6 percent). At the very high levels of obesity (Cat. II and III) the total proportion of both sexes is almost equal. Although the percentage with a BMI above 40 is higher for women, the difference is so small that it can easily be attributed to small sample variability.

Although in the Netherlands six in ten men and nearly half of the women are overweight, obesity is more common in other EU countries (Blokstra et al., 2011, IOTF-Prevalence Data, 2012). The most unfavorable situation is in Spain, England, Scotland, and Ireland, with an approximate 70 percent of overweight males.

In the Netherlands 13 percent of men and 14 percent of women are seriously overweight (obese). As in other EU countries this percentage is higher in men (16.4 percent) and women (15.9 percent) with a relatively low educational level (Blokstra et al., 2011). In most other EU countries, obesity is more common than in the Netherlands. England and Scotland have the highest percentages: one in four adults is obese.

5.4 TOBACCO AND ALCOHOL USE

According to the World Health Organization, smoking and other forms of tobacco use are the second major cause of death in the world, given that they are the major cause of many of the world's top killer diseases, such as heart and vascular diseases, different types of cancer, and respiratory diseases. Tobacco is also linked to huge economic costs, given high public and private expenses to treat tobacco-caused diseases, decreased productivity of ill tobacco users, and untimely death of tobacco users.

On the other hand, the consumption of alcohol has been demonstrated in numerous studies to have both beneficial and detrimental effects on health and well-being. The detrimental effects of alcohol consumption appear with start with the use of 2 to 3 alcoholic beverages per day. However, not only the volume of alcohol consumed is relevant when investigating the effect of alcohol on health, but also the pattern of consumption of alcohol is important. Binge drinking in particular has been linked with a number of negative health outcomes, including alcohol-related accidents, mental distress, higher odds of overweight and obesity and worse health-related quality of life.

5.4.1 TOBACCO USE AMONG ADULTS

According to data collected during the STEPS 2006 Health Survey, 16.2 percent of persons between 25 and 64 years of age smoked tobacco, of which the majority smoked daily (77.8 percent). The prevalence of smoking and of daily smoking was twice as high among men (22.4 percent, and 17.2 percent) as among women (11.2 percent, and 8.9 percent). In addition, men started smoking earlier in life (at 18 years of age) when compared to women (at 21 years of age). Men also reported having smoked for a longer period of time than women (26 years and 22 years, respectively) and smoking more manufactured cigarettes per day than women (18 cigarettes and 10 cigarettes, respectively).

Overall, the prevalence of current smokers in Aruba was relatively low when compared to that in the United States and the Netherlands, especially where women were concerned. In total, 11.2 percent of women reported being current smokers during the STEPS 2006 Health Survey, compared to 18.4 percent of women in the United States and 25.3 percent in the Netherlands (see Figure 65).

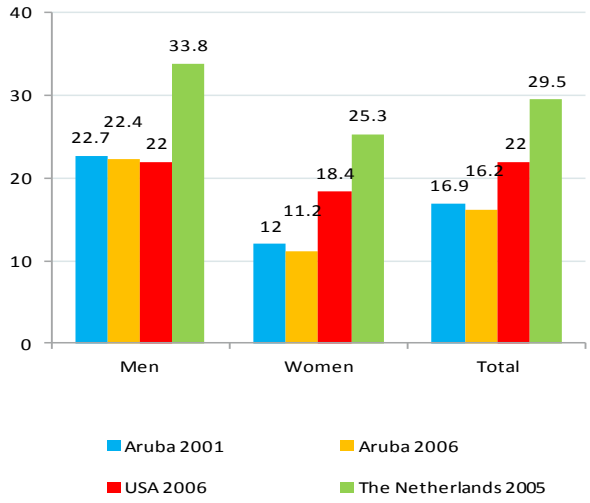


FIGURE 65. YOUTH WHO EVER SMOKED BY AGE CATEGORY AND GENDER, YHS ARUBA 2012.

5.4.2 TOBACCO USE AMMONG YOUTH

Tobacco use is one of the main risk factors for a number of chronic diseases, including cancer, lung diseases, and cardiovascular diseases (WHO, 2012). According to the Youth Health Survey 2012, 27.9 percent (n=1330) of the youth attending secondary school have ever tried a cigarette.

Most of them (38.5 percent; n=512) tried their first cigarette when they were between 13 and 15 years of age. It is remarkable that 48.1 percent of the youth were younger than 12 years when they tried a cigarette for the first time. More than half of the youth, who ever smoked, were males (51.5 percent). Of these secondary school going youth between 12 and 19 years of age, the majority who ever smoked are between 15-17 years of age (56.5 percent; n=751), whereas 25.3 percent of them are 14 years or younger.

According to data collected, 4 percent (n=123) of the youth stated that they smoked one cigarette or more per day during the last 30 days and 2 percent (n=93) have stated to have smoked less than one cigarette per day during the last month. The majority of the youth stated that they have been smoking for 1-5 days during the last month (3.9 percent; n=184). Only 0.7 percent of the youth who ever smoked stated that during the last 30 days they were smoking more than 20 days (n=33).

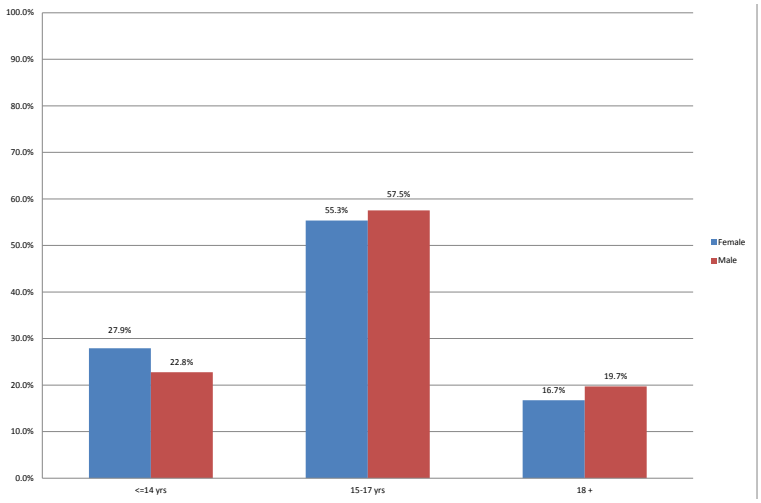


FIGURE 66. YOUTH WHO EVER DRANK ALCOHOL BY AGE CATEGORY AND GENDER, YHS ARUBA 2012.

5.4.3 ALCOHOL USE AMONG ADULTS

During the STEPS 2006 Health Survey, 52.9 percent of men and 26.6 percent of women between 25 and 64 years of age reported consuming alcohol in the month prior to the survey and were categorized as current drinkers. On the other hand, 21.9 percent of men and 38.5 percent of women reported never having used alcohol (see Figure 66).

The majority of persons, who reported having consumed alcohol in the year prior to the survey, reported consuming alcohol less than once a month (61.1 percent). Only 4.1 percent reported using alcohol on a daily basis. However, it is important to mention that there was again a significant difference between men and women in the frequency of alcohol consumption (see Figure 67). For example, whilst 0.6 percent of women reported consuming alcohol on a daily basis, 7.1 percent of men did.

When consuming alcohol, men reported consuming, on average, as many as 6.9 standard alcoholic beverages a day, nearly twice as many as women who reported consuming 3.6 alcoholic beverages a day. Moreover, 50.2 percent of men reported consuming 6 or more standard alcoholic beverages a day when consuming alcohol, compared to 17.8 percent of women. Particularly during the weekend, relatively more alcoholic beverages were consumed per day, especially where men were concerned.

Further analysis of the number of alcoholic beverages men and women reported consuming on a single occasion revealed that 15.0 percent of men and 7.8 percent of women could be categorized as binge drinkers given that they reported consuming respectively 5 or more (men), and 4 or more (women) alcoholic beverages on a single occasion. However, when taking into account the group of men and women who reported having consumed alcohol in the month prior to the survey, 73.7 percent of these men and 55.0 percent of these women could be categorized as binge drinkers.

It is also important to mention that the age at which young people start using alcohol is a powerful predictor of alcohol-related harm, abusive consumption of alcohol, and the development of alcohol-related disorders. During the STEPS 2006 Health Survey, men reported having started consuming alcohol at age 18 and women at age 21, which is relatively later in life when compared to the United States and the Netherlands, where persons start using alcohol at the mean age of 14 years and 16.5 years, respectively.

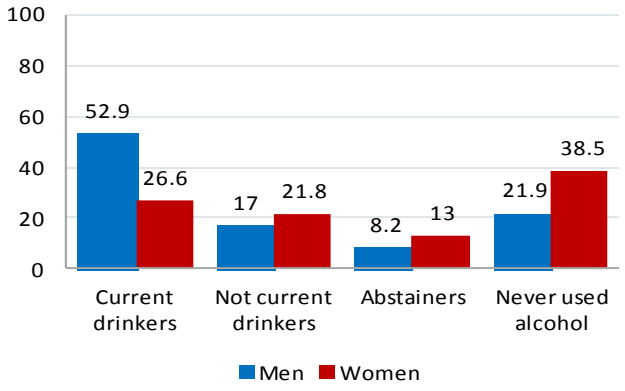


FIGURE 67. MEN AND WOMEN CATEGORIZED ACCORDING TO THEIR ALCOHOL USE, STEPS 2006 HEALTH SURVEY

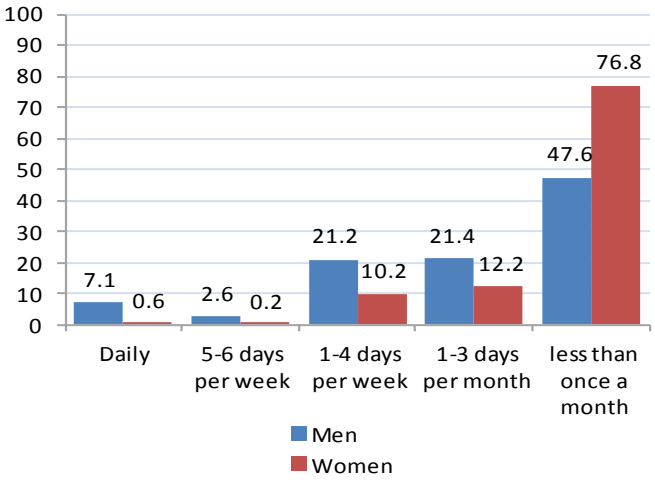


FIGURE 68. THE FREQUENCY OF ALCOHOL CONSUMPTION IN THE YEAR PRIOR TO THE STEPS 2006 HEALTH SURVEY, BY GENDER

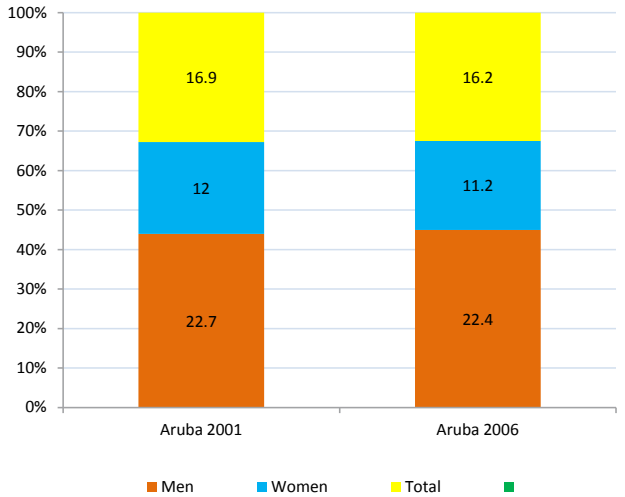


FIGURE 69. AMOUNT OF ALCOHOLIC BEVERAGES CONSUMED PER DAY WHEN CONSUMING ALCOHOL, BY GENDER

5.4.4 ALCOHOL USE AMONG YOUTH

The harmful use of alcohol results in 2.5 million deaths each year. According to the WHO, 320 000 young people between the age of 15 and 29 die from alcohol-related causes, resulting in 9 percent of all deaths in that age group (WHO, 2012).

In Aruba, 70.2 percent (n=3283) of the youth between 12-19 years stated that they tried alcohol, whereas 29.8 percent stated that they never drank alcohol.

Most of the teenagers who tried alcohol for the first time were 13 to 15 years of age, from which 52.5 percent were female and 47.5 percent were males. It has to be mentioned that more than 50 percent (56.1 percent) of the ones who ever tried alcohol were males who were less than 10 years old.

Analyzing the data in more detail, we see that females in the age category equal or less than 14 years old ever drank alcohol more than males in that same age category (31.5 percent compared to 29.6 percent). Both genders in the age category of 15-17 years old have stated that they have drunk alcohol (53.6 percent males versus 52.8 percent females; see figure 66).

Furthermore, more than 60 percent of the youth between 15-17 years of age have been drinking at least one drink containing alcohol for 5 to 10 days during the last month. During the last 30 days, when they had been drinking alcohol, 63.5 percent (n=99) of the females in the age category of 15-17 years said that they had drunk 5 or more drinks on the days they drank, whereas 64.7 percent of the males in the same age category drank only 3 drinks on the days they had been drinking.

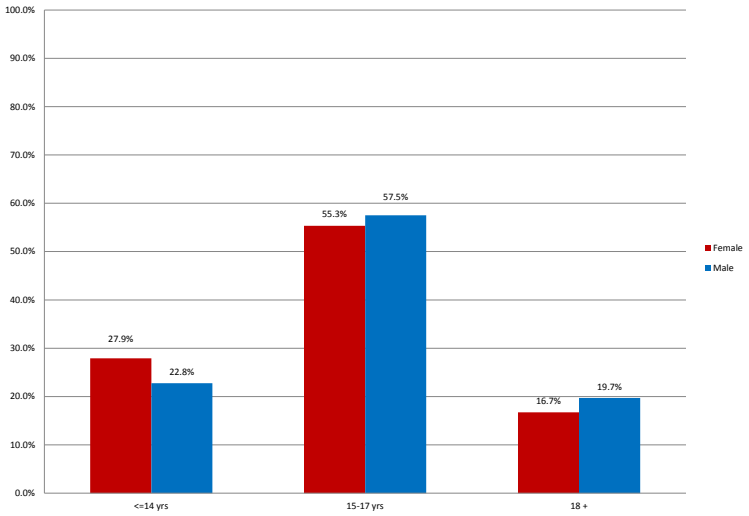


FIGURE 70. YOUTH WHO EVER DRANK ALCOHOL BY AGE CATEGORY AND GENDER, YHS ARUBA 2012.

6

6. YOUTH HEALTH

In 2012, the Department of Public Health conducted a health survey among secondary school going youth between 12 and 19 years. A total of 4765 students participated and completed the questionnaire.

6.1 DRUG USE

6.1.1 CANNABIS

According to data from the Youth Health Survey, 15.5 percent of the respondents (n=724) stated that they smoke marihuana, from which 46.5 percent are female (n=337) and 53.5 percent are male (n=387).

Further analysis shows that almost two thirds (59.5 percent, n= 431) of the studied population, who do smoke marihuana, are in the age category of 15-17 years. Besides more than half of the females (52.6 percent) in the age category younger than 14 years do smoke marihuana. In the older age categories 15-17 years and 18 + years, males have the highest percentages of smoking marihuana, 52.0 percent and 62.5 percent respectively.

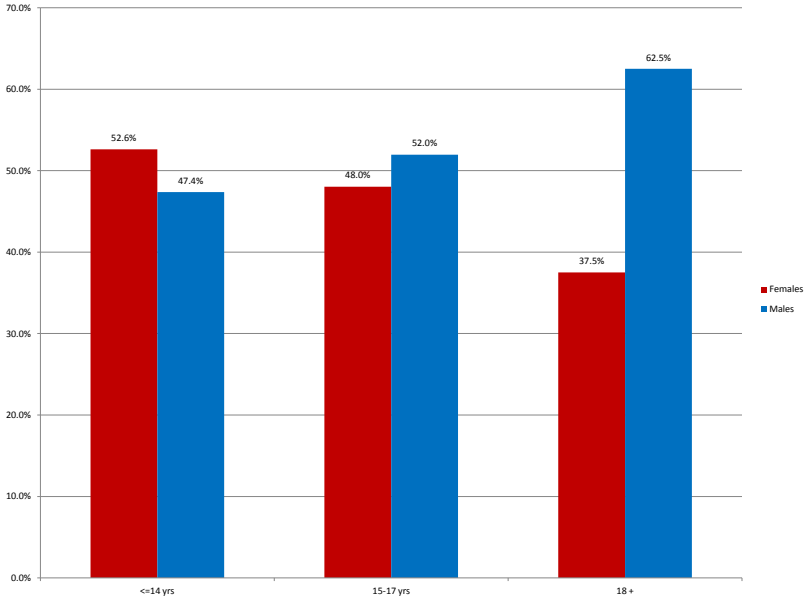


FIGURE 71. MARIHUANA USE PER AGE CATEGORY BY SEX, YHS ARUBA 2012.

When asked the age when they first tried marihuana, more than half, 51.4 percent, were between 13-15 years old when they first tried marihuana. A third (30.7 percent) was between 16 and 18 years. It is particular to mention that 5.4 percent of the studied youth had tried marihuana when they were less than 10 years old, see table 16.

However the fact that males have overall a higher percentage of marihuana use, a higher percentage of the females as compared to the males have tried marihuana once they are older than 18 years (58.3 percent), see figure 68.

TABLE 16. AGE CATEGORY FIRST TRIED MARIHUANA.

Age first tried marihuana	Number	Percent
less than 10 years old	39	5.4
11 or 12 years old	79	10.9
13-15 years old	372	51.4
16-18 years old	222	30.7
older than 18 years	12	1.7
Total	724	100.0

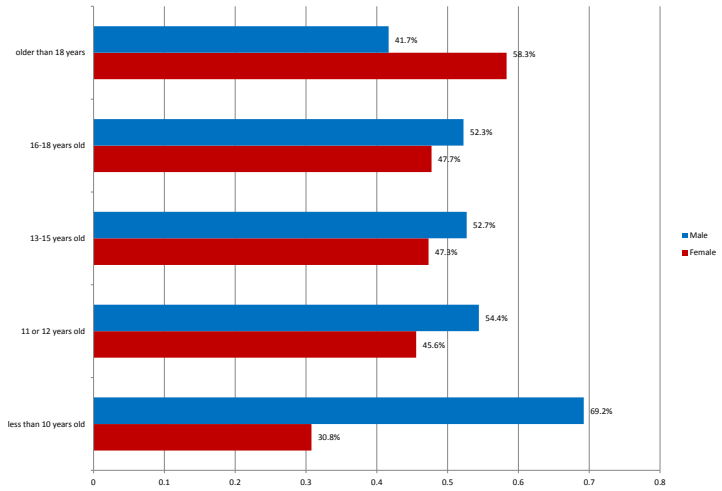


FIGURE 72. AGE FIRST TRIED MARIHUANA BY AGE AND SEX, YHS ARUBA 2012.

The frequency of use during the life time is the highest at 1-2 times, 40.7 percent of the population who uses marihuana. More than one fifth of the ones who use marihuana, 23.3 percent has stated to have used marihuana more than 20 times during their lifetime. Figure 69 analyzed the frequency of use by gender. As this figure shows, males have a higher frequency of use as compared to the males, 50.6 percent have used 10-19 times and 68.3 percent more than 20 times during their live. Overall the boys between 12-19 years have the highest percentage of marihuana use and also the highest frequency of use.

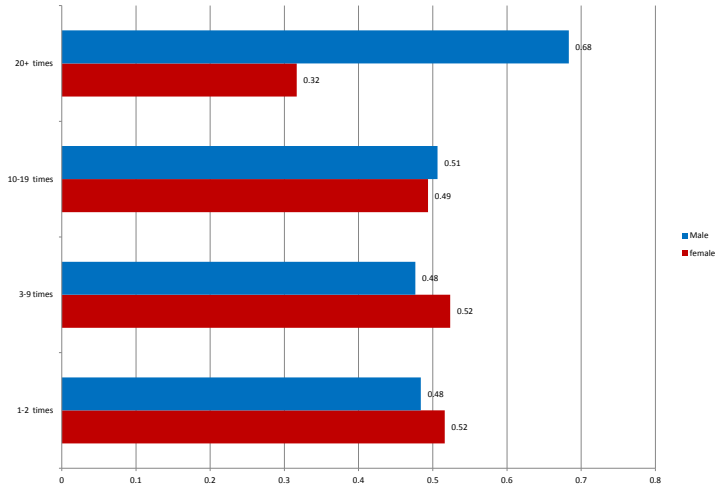


FIGURE 73. FREQUENCY MARIHUANA USE BY GENDER, YHS ARUBA 2012.

6.1.2 HARD DRUGS

Besides marihuana the use of hard drugs was also prevalent among the youth, 2.6 percent (n=120) of the studied population has stated to have used hard drugs during their life. The frequency of hard drug use by gender is illustrated in figure 70.

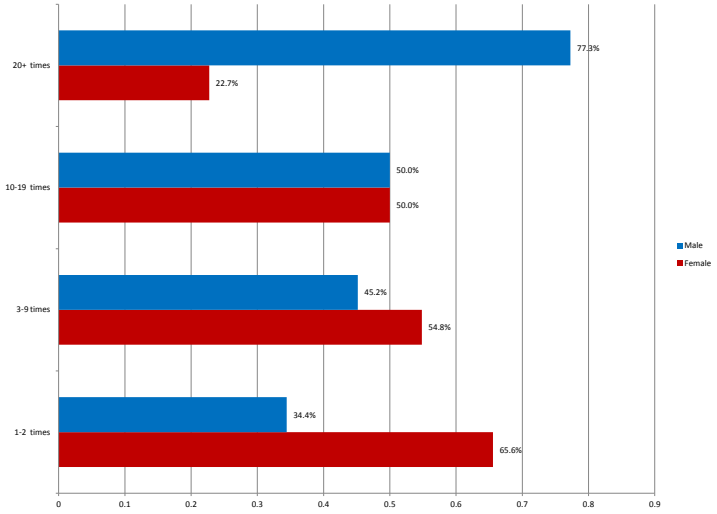


FIGURE 74. FREQUENCY OF HARD DRUG USE DURING LIFE BY GENDER, YHS ARUBA 2012.

However the number of hard drug users is low as compared to the users of marihuana, we see a tendency of hard drug is higher among the females as compared to the males. Further analysis by age category shows that 29.2 percent of the youth between 12-19 years have used hard drugs in their live.

6.2 SEXUALITY

Many young people engage in risky sexual risk behaviors that can result in unintended health outcomes.

The results of the Youth Health Survey 2012 showed that 38.1 percent of both male and female between 12-19 years have ever had sexual intercourse.

Most of them had their first sexual experience at an average age of 14.4 years. More than three quarters (78.8 percent) have had their first sexual intercourse when they were between 15 and 17 years, 10.5 percent were between 12 and 14 years and only 6.3 percent were older than 18 years. It is important to mention that 4.4 percent of the studied population stated to have had their first sexual intercourse at 11 years or younger.

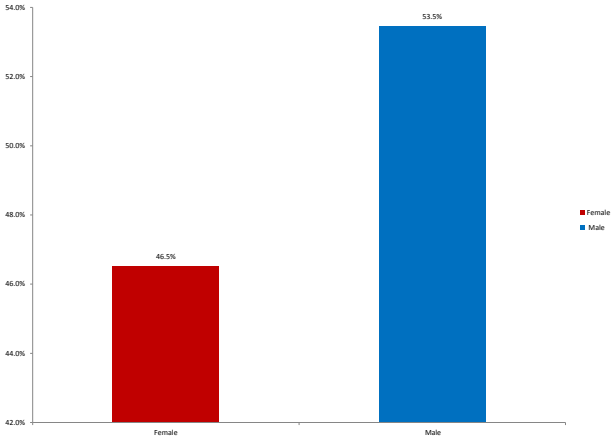


FIGURE 75. SEXUALLY ACTIVE YOUTH BY GENDER, YHS ARUBA 2012.

Of the ones who ever had sexual intercourse, 46.5 percent were females (n=838) and 53.5 percent were males (n=963), see figure 71. The majority of these teenagers, who have stated to have had sexual intercourse, were in the age category of 15-17 years (61.1 percent females and 61.0 percent males). There are no large difference in percentages between the female and males who have had sexual intercourse.

6.2.1 SEXUAL PREFERENCES AND ATTRACTION

More than half of the males, 50.8 percent have stated to have had sex with females and 43.9 percent of the females had sex with males. Also 60.7 percent of both males and females stated to be attracted to the opposite sex. However 2.9 percent of the females and 3.2 percent of the males stated to be attracted to the same sex, while 28.8 percent did not understand the question.

More than half of the school going youth between 12 and 19 years never had sexual intercourse, 61.9 percent, more females than males have never had sexual intercourse (54.0 percent female & 46.0 percent males). The main reason for not having sexual intercourse were mainly, 'wait until older' and 'don't want to risk to get an STI, see the following table for detailed results.

Reason for not having sexual intercourse	Females	Males
Wait until older	24%	40.3%
Don't want to risk an STI	11.7%	8.2%

TABLE 17. MAIN REASON FOR NOT HAVING SEX, YHS ARUBA 2012.

For both males and females the percentage was higher for these answers in the age category of younger than 14 years. Of the female respondents in this age category, 60.5 percent (n=208) want to wait until older and 59.6 percent (n=56) in this same age category stated not wanting to risk an STI. For the males in this same age category these same reasons were stated with 62.8 percent (n=309) and 69.0 percent (n=69) respectively.

6.3 YOUTH MENTAL HEALTH

Adolescence is a time of dramatic change. The journey from child to adult can be complex and challenging. Young people often feel tremendous pressure to succeed at school, at home and in social groups. At the same time, they may lack the life experience that lets them know that difficult situations will not last forever.

According to the Youth Health Survey Aruba 2012 conducted under the school attending population aged 12-19 years different factors were measured such as loneliness, feeling of hopelessness, suicidal thoughts and even attempts. These are factors that form a view of the mental and emotional state under the Aruban youth.

The study showed that during the past 12 months about 16 percent (15.9 percent) of the youth between 12-19 years felt lonely most of the time. More females compared to males felt lonely, 70.5 percent and 29.5 percent respectively.

More than half (53.3 percent) belong to the age category between 15 and 17 years, while more than a third (33.2 percent) were younger than 14 years of age, and 13.5 percent were older than 18 years, see table 18.

Loneliness	Age category		
	<=14 yrs	15-17 yrs	18 +
Rarely	38.6	48.1	13.4
Sometimes	33.9	49.9	16.2
Most of the time	33.2	53.3	13.5
Always	38.5	51.5	10

TABLE 18. FREQUENCY EXPERIENCE LONELINESS.

Trouble with sleeping was another factor asked, almost 5 percent (4.5 percent) had trouble sleeping most of the time at night because of worries. Again more females compared to males had troubles sleeping, 69.8 percent and 30.2 percent respectively.

More than half (51.9 percent) belong to the age category between 15 and 17 years, while more than one third (34.0 percent) were between 12 and 14 years of age, and 14.1 percent were 18 years and higher.

The feeling of sadness and hopelessness during the past 12 months was the most common experienced feeling compared to all other feelings. During the past 12 months almost half, 42.2 percent, experienced this feeling. Two third (66.3 percent) of those who experienced this feeling where female, only one third (33.7 percent) were male. When further analyzed by age, more than half (51.8 percent) belong to the age category between 15 and 17 years, while a third (33.3 percent) were between 12 and 14 years of age, and 14.9 percent were older than 18 years.

Suicidal thoughts were also prevalent among the population studied. Almost 15 percent (14.6 percent) thought about suicide during the past 12 months. Again the females had the highest percentage, almost 70 percent (69.1 percent). Among the males, this percentage was much lower than 30.9 percent. The youth between the ages 15 and 17 had the highest percentage of individuals having thought about committing suicide, 52.7 percent, followed by the youth aged 12-14 years, see table 19.

Risk factors for suicide						
	Total	Male	Female	12-14 yrs	15-17yrs	18 +yrs
Think about suicide (past 12 months)	14.6%	30.9%	69.1%	36.8%	52.7%	10.5%
Plan suicide (past 12 months)	14.6%	30.9%	69.1%	36.8%	52.7%	10.5%
Attempted suicide at least once(past 12 months)	9.3%	28.9%	71.1%	39.5%	50.9%	9.6%

TABLE 19. RISK FACTORS SUICIDE SCHOOL GOING YOUTH.

To think about suicide is one thing, but to actually plan a suicide is considered a more serious matter. When asked if the respondents made a plan about killing themselves during the past year almost 15 percent (14.6 percent) of the students answered yes, from which 69.1 percent were female and 30.9 percent were male. More than half (52.7 percent) belong to the age category between 15 and 17 years, 36.8 percent were between 12 and 14 years of age, and 10.5 percent were 18 years and higher. Moreover, it is to be taken more seriously when suicide is attempted. Almost 10 percent (9.3 percent) have tried to commit suicide at least once before.

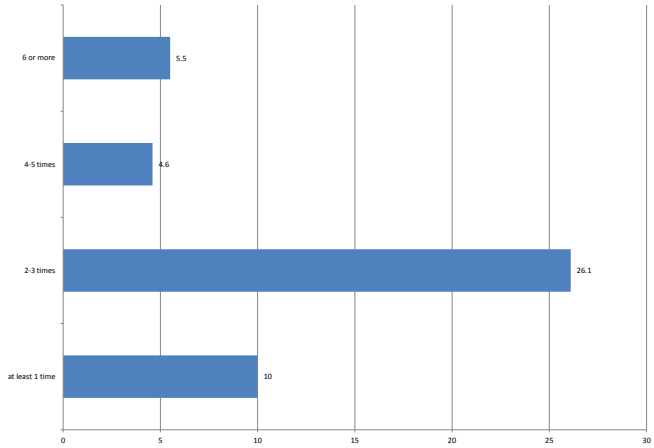


FIGURE 76. FREQUENCY ATTEMPTED SUICIDE OF YOUTH HAVING SUICIDAL THOUGHTS, YHS ARUBA 2012.

However more than a quarter, 26.1 percent, of the ones who have suicidal thought have tried to kill themselves 2-3 times, see figure 72. Again females had the highest percentage as compared to the males, 71.1 percent and 28.9 percent respectively. This is 2.5 times higher compared to the males.

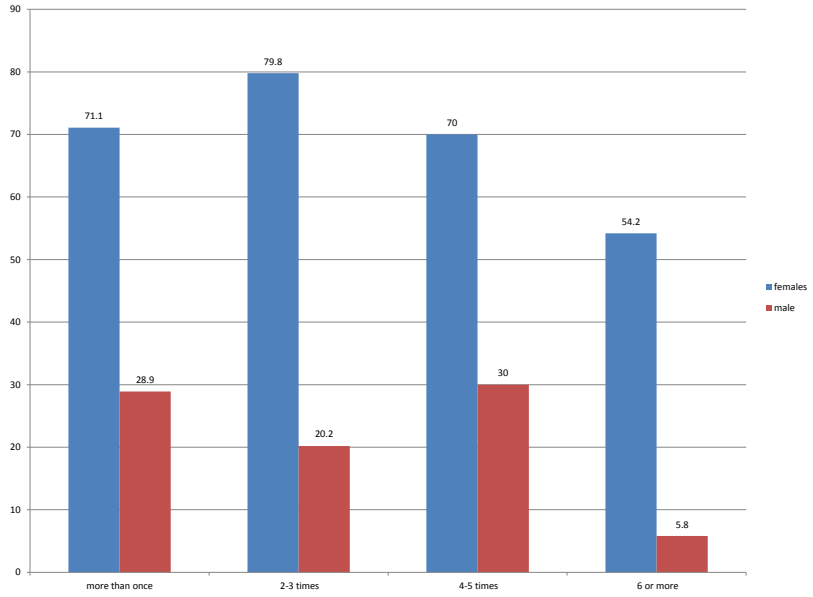


FIGURE 77. FREQUENCY OF ATTEMPTED SUICIDES BY GENDER, YHS ARUBA 2012.

More than a quarter (26.1 percent) tried 2 or 3 times to attempt suicide without having any previous suicidal thoughts. From this 26.1 percent, again females (79.8 percent) had the highest percentage compared to the males (20.2 percent). As figure 73 illustrates, overall females have attempted suicide more often than males.

Almost fifty one percent (50.9 percent) of those who tried to kill themselves at least once during the past year belong to the age category between 15 and 17 years, 39.5 percent were between 12 and 14 years of age and 9.6 percent were 18 years and older.

These data are similar to data from the U.S. where females attempt suicide more often than males. However the percentages are higher among the youth. In the U.S. in 2009, 6.3 percent of high school students (grades 9-12) attempted suicide. Of those, 8.1 percent were female, 4.6 percent were male. For Aruba this percentage is 9.2 percent from the total population high school going youth, from which 6.6 percent are female and 2.6 percent are male.

According to the Central Bureau for Statistics in the Netherlands from 2000 to 2008, 3752 suicides took place among people between the ages of 10-19. Most of the cases occurred among persons aged 15-19 with a total of 2584, and 1168 cases occurred among persons 10-14 years of age.

However according to mortality data obtained from the Department of Public Health Aruba, for the years 2000-2009 only one case of suicide was registered for the age group 15-19 years.

6.4 BREASTFEEDING

As stated by the WHO "Breastfeeding is the natural way of providing young infants with nutrients they need for healthy growth and development".

Breastfeeding provides bonding between mother and child as well as health benefits for both. Breast milk protects babies against common diseases in children such as atopic eczema, ear infections, respiratory tract infections and diarrhea.

Mothers who breastfeed have a lower risk of breast cancer and osteoporosis. Other advantages of breastfeeding are lower health care costs, including doctor's visits and hospitalization, and an increase in work productivity of the mothers since infants who are breastfed are sick less often. Research shows that children who have been exclusively breastfed during the first 6 months of life have a lower risk of becoming obese in adulthood.

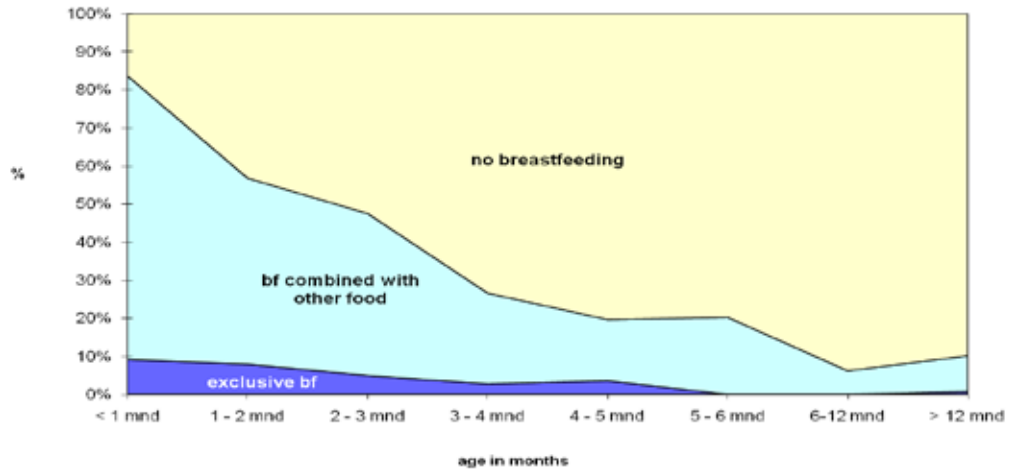


FIGURE 78. PERCENTAGE OF EXCLUSIVE, COMBINED AND NO BREASTFEEDING, ARUBA 2002.

Obesity is a high risk factor for the development of chronic diseases such as cardiovascular diseases and diabetes during adulthood. Taking into consideration that chronic diseases are the number one cause of death in Aruba, breastfeeding has an important role in the decrease of chronic diseases.

In 2002 the prevalence of breastfeeding was measured for the first time in Aruba. Figure 74 shows the percentage of baby's receiving exclusive breastfeeding at the moment of birth was less than 10 percent. This percentage that declined to 0 during the first 6 months of the baby's life. Of the remaining 90 percent, 70 percent received breastfeeding in combination with formula and 17 percent received no breastfeeding at all.

The same investigation was repeated in 2010 and the results showed an increase in breastfeeding. The percentage of newborn babies exclusively breastfed increased from 10 percent in 2002 to 24 percent in 2010. Babies exclusively breastfed at the age of 6 months, increased from 0 percent in 2002 to 9.1 percent in 2010.

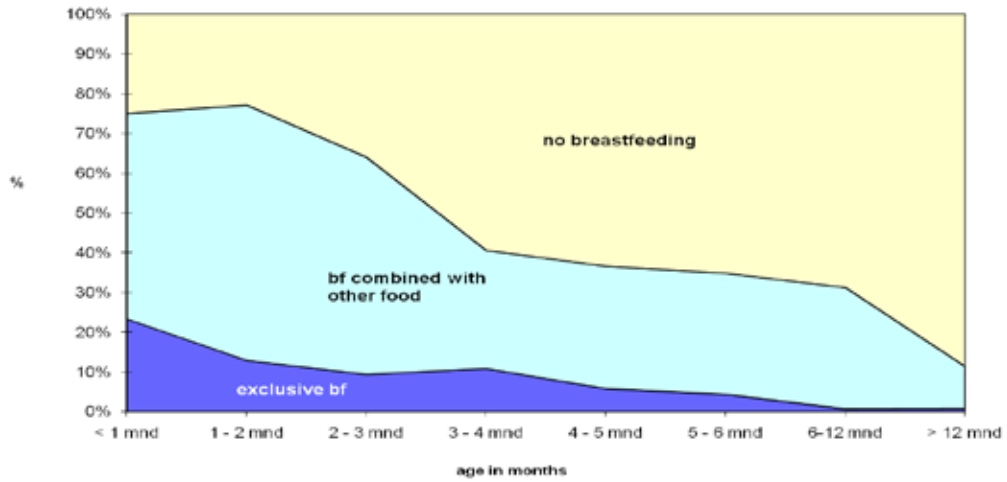


FIGURE 79. PERCENTAGE OF EXCLUSIVE, COMBINED AND NO BREASTFEEDING, ARUBA 2010.

The remaining 90 percent in 2002 that were breastfed in combination with other food, and also those who were not breastfed, have also decreased in 2010.

The group of newborn babies who were breastfed in combination with other food, decreased from 70 percent in 2002 to 52 percent in 2010. Yet, the percentage of newborn babies who were not breastfed, has increased from 17 percent in 2002 to 23 percent in 2010, see figure 75.

Exclusive breastfeeding has increased from 9.2 percent in 2002 to 24.8 percent in 2010.

Also the average week a baby was breastfed has increased from 13 weeks in 2002 to 15 weeks in 2010. Overall it can be concluded that breastfeeding, whether in combination or exclusively has increased in an 8 year period.

Breastfeeding is heading towards a positive direction for Aruba; however there is still room for improvement. Worldwide the percentage of exclusive breastfeeding is 38 percent, for Aruba this percentage is only 13 percent. Together with Trinidad & Tobago, the United States of America, Dominican Republic and Surinam, Aruba ranks in the top three of the lowest percentages where breastfeeding is exclusive during the first six months of life, see figure 76.

Peru has the highest percentage (63%) of exclusive breastfeeding, followed by Bolivia, Colombia and Ecuador, for details see figure 80.

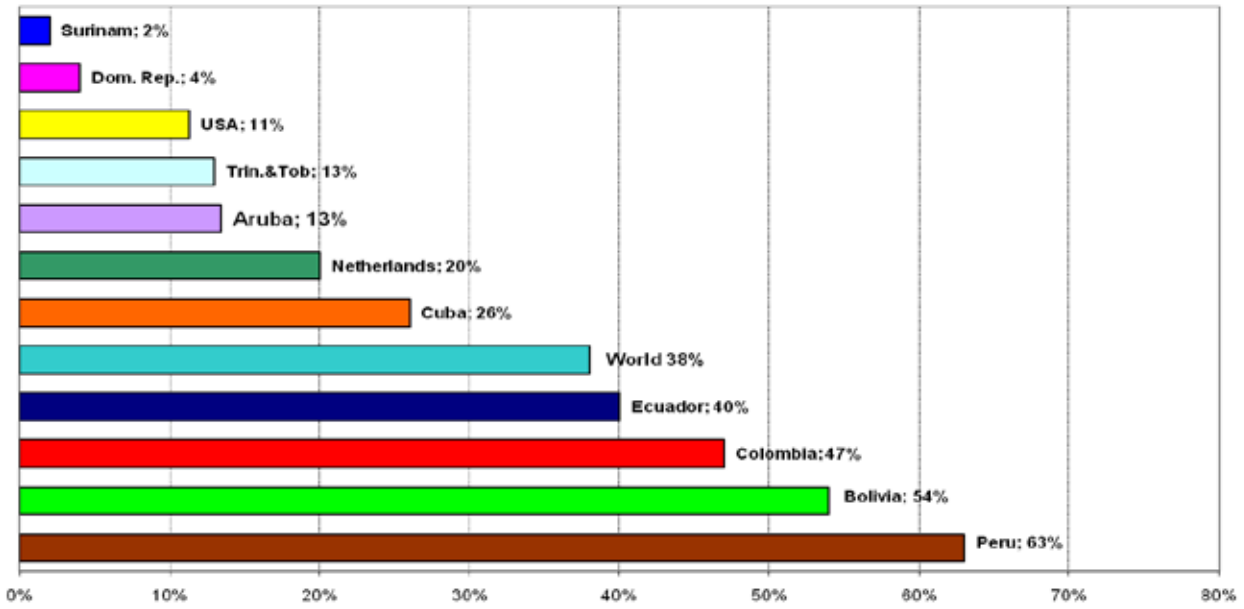


FIGURE 80. EXCLUSIVE BREASTFEEDING UNTIL 6 MONTHS (ARUBA AND OTHER COUNTRIES).

In order to determine the reasons and contributing factors to the low prevalence of breastfeeding in Aruba a study about knowledge, beliefs and actions was done in 2003 among a group of mothers.

The main reason for stopping early was that the mothers felt that the milk production decreased or that the baby refused breastfeeding. Also, returning to work was one of the most important factors stated by the mothers.

Analyzing these reasons we can conclude that there is a lack of knowledge about the process of breastfeeding. External factors have its influence on breastfeeding such as work resumption, which play an important role in the period of breastfeeding the baby.

6.5 DENTAL HEALTH

6.5.1 TODDLERS

The White Yellow Cross Foundation offers services in the field of ambulatory care with the support of the Department of Public Health. The DPH offers the services of the dentists who give the dental consultations at the ambulatory care.

Since 2001 "Nutrition and Dental Care" for toddlers is also offered at ambulatory care of the WYC. The consultation includes a nutritionist and a dentist for the oral examination.
The oral history and examination include oral habits, oral hygiene practices, growth and development (dental age), injury history, caries (Nursing Bottle Caries / Early Childhood Caries) and other potential problems.

Parents are informed about the importance of teaching their children good oral hygiene habits at an early stage. In addition to information about oral health care, parents are also informed about the dental coverage provided for by the AZV. All toddlers are referred afterwards to their dentists for regular check-ups. The dental check-up include observation of any abnormality in the oral cavity e.g.

- numbers of the teeth present according to the infant age
- oral manifestation due to bad habits (thumb sucking or pacifier)
- Nursing bottle syndrome
- Bad hygiene.

From 2004 to 2007 the attendance percentage of toddlers was approximately 50. From 2008 to 2010 the attendance percentage increased to 60. The low attendance to the "Nutrition and Dental Care" clinic is common for the clinics offered at the White Yellow Cross Foundation for children older than 15 months. At 15 months the infants complete their immunizations according to the schedule for that age group. Most parents take their babies to the White Yellow Cross Foundation primarily to be vaccinated. Attendances tend to increase when the initial appointment is followed up by a reminder.

The number of toddlers seen at the "Nutrition and Dental Care" clinic has increased from 578 in 2004 to 805 in 2010. The "Nutrition and Dental Care" clinic was held twice a week from 2001 to 2007, see figure 81.

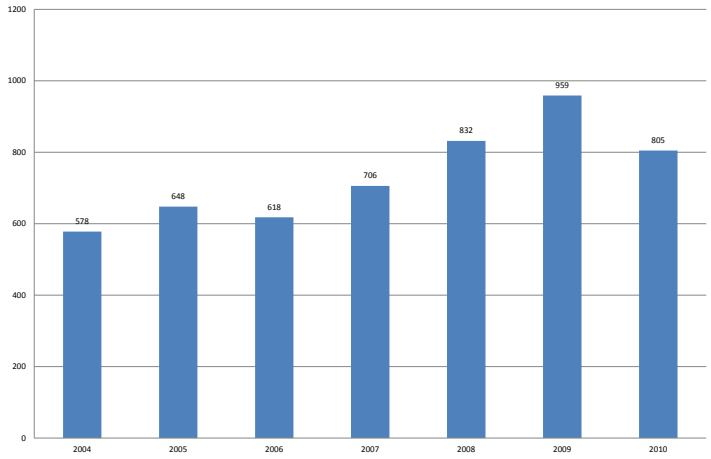


FIGURE 81. NUMBER OF TODDLERS ATTENDING "NUTRITION AND DENTAL CARE" PER YEAR, YDC ARUBA.

In 2008 an additional clinic was added which could explain the increase in attendance in that year. Aruba has an average of 1144.5 live births per year. The majority of these babies used the services of the White Yellow Cross Foundation. The "Nutrition and Dental Care" clinic sees approximately about 60 percent of the children born each year.

6.5.2 HABITS TODDLERS

There has been a steady decline in the prevalence of oral habits in the children studied in this same period, see figure 78. The prevalence of the oral habit "thumb (digital) sucking" was 22.3 percent in 2004 and decreased to 18 percent in 2010. The prevalence of the "use of a pacifier" was 21.1 percent in 2004 and decreased to 19 percent in 2010. The decline in the prevalence of oral habits could be attributed to the increase in the prevalence of breastfeeding in Aruba. Studies have shown that breast-fed children tend to develop non-nutritive sucking habits less frequently. The percentage of children who slept with the baby bottle doubled from 2004 to 2008, from 2.4 percent to 4.0 percent. From 2008 to 2010 the percentage of children who slept with the baby bottle decreased and has stayed below 5 percent.

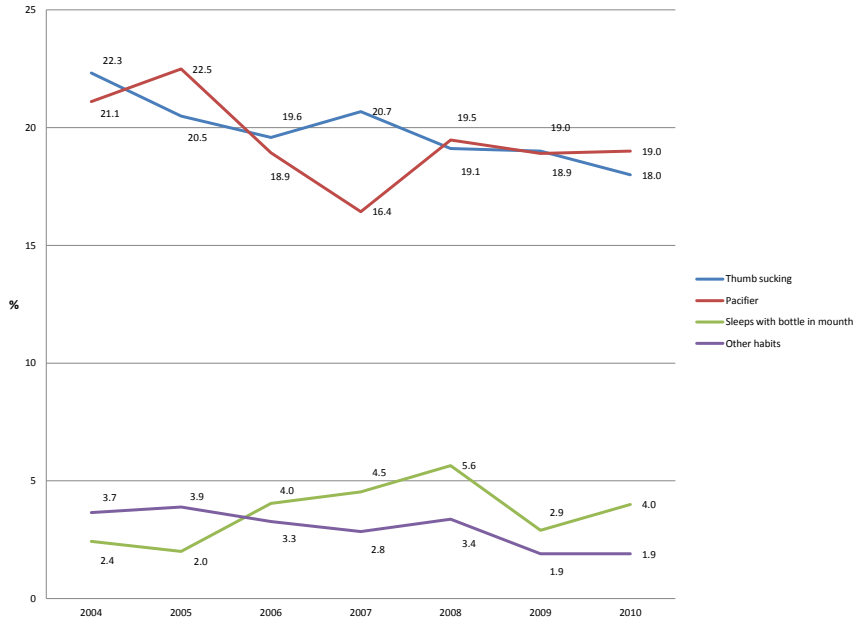


FIGURE 82. HABITS TODDLERS IN PERCENTAGE, ARUBA 2004-2010.

6.5.3 PERCENTAGE TODDLERS WITH DENTAL CARIES BY YEAR 2004-2010

The percentage of toddlers with dental caries increased steadily from 3.2 percent in 2004 to 5.3 percent in 2010, see figure 83. The increase in the prevalence of dental caries in the primary dentition is a global trend. The increase of the prevalence of dental caries is being attributed largely to the increase in sugar consumption (amount and frequency) and the inadequate exposure to fluorides.

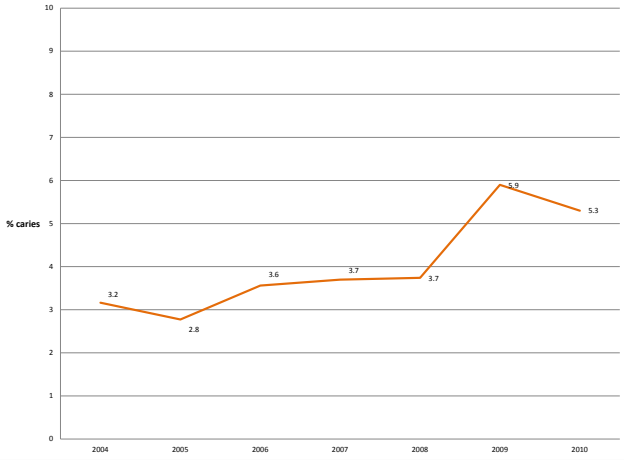


FIGURE 83. PERCENTAGE TODDLERS WITH CARRIES, ARUBA 2004-2010.

6.5.4 NURSING BOTTLE SYNDROME BY YEAR 2004 – 2010

Nursing Bottle Syndrome is a unique pattern of dental caries caused by allowing the child to feed from a nursing bottle containing milk or juice or from the breast, for extended periods of time. The upper front teeth are most commonly affected.

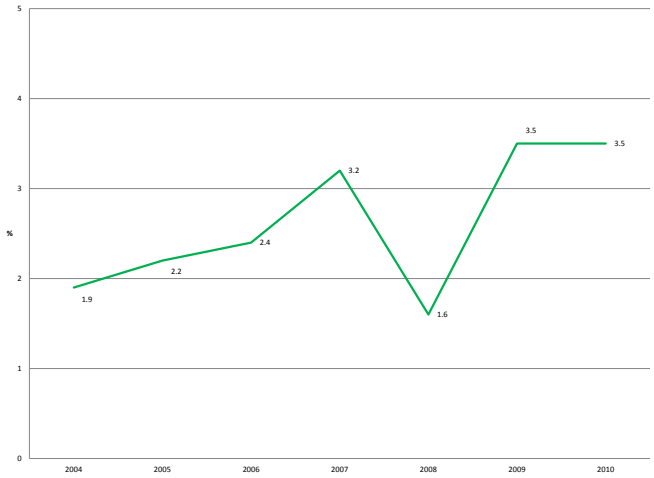


FIGURE 84. NURSING BOTTLE SYNDROME BY YEAR, ARUBA 2004-2010.

The prevalence of Nursing Bottle Syndrome has increased steadily from less than 2 percent in 2004 to 3.5 percent in 2010, see figure 84.

The term "Nursing Bottle Syndrome" suggests that the primary cause of caries is the inappropriate bottle feeding. The current evidence suggests that although the use of a sugar – containing liquid in a baby bottle at night - time may cause dental caries.

6.5.6 PERCENTAGE TODDLERS WHO HAVE USED FLUORIDE BY YEAR 2004 – 2010

The use of fluorides to reduce dental caries has been proven effective in numerous studies. Fluoride protects teeth in two ways, systemically and topically. Systemic fluorides are those ingested into the body.

In the "Nutrition and Dental Care " clinic, the use of fluoride tablets was specifically measured. From 2004 to 2010 the percentage of toddlers who have used fluoride tablets decreased steadily from 36.2 to 11.9, figure 85. The guidelines recommend brushing the infant's teeth as soon as they start to erupt, with fluoride toothpaste (with the appropriate concentration), early visits to the dentist (starting at two years of age) and the use of topical fluorides if necessary.

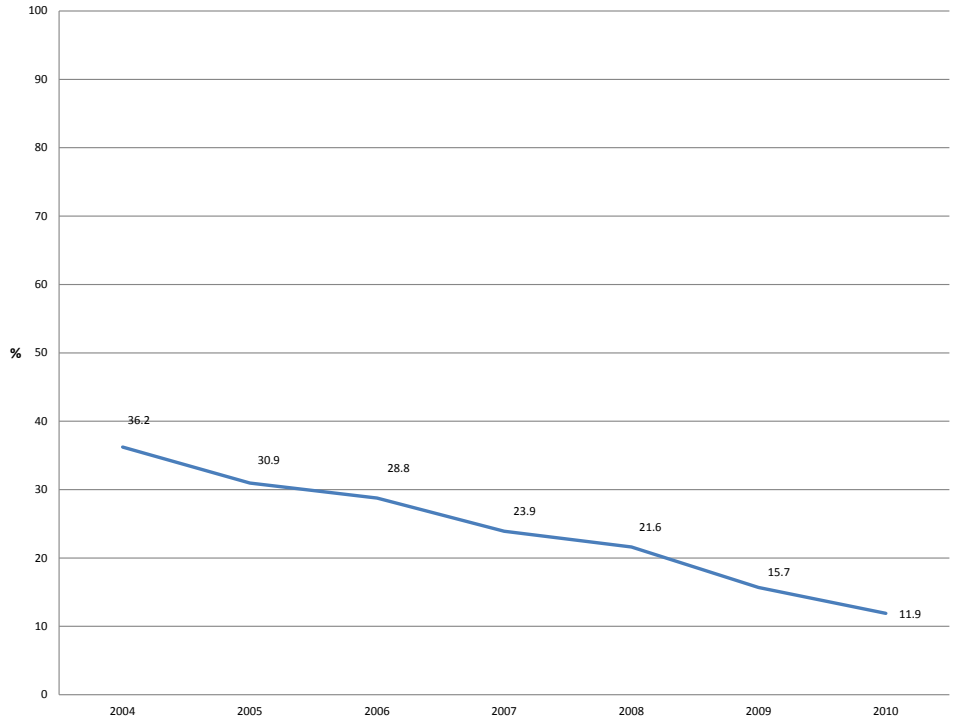


FIGURE 85. PERCENTAGE TODDLERS USING FLOURIDE PER YEAR, ARUBA 2004-2010.

6.5.7 TODDLERS WITH TEETH DEMINERALIZATION, PERCENTAGE BY YEAR 2004-2010

During the oral exam the presence of "white spots" or demineralization of the enamel is also recorded. The demineralization of the enamel is the earliest macroscopic evidence of caries. The enamel surface overlying the lesion is intact. Demineralization occurs at the subsurface level.

Toddlers with white spots are referred immediately to their dentist for topical fluoride treatment. Parents are also instructed to take extra preventive measures.

From 2004 to 2010 the percentage of toddlers with white spots increased steadily from 1.6 to 3.7, see figure 86. The percentage increase of toddlers with white spots corresponds to the increase in prevalence of dental caries.

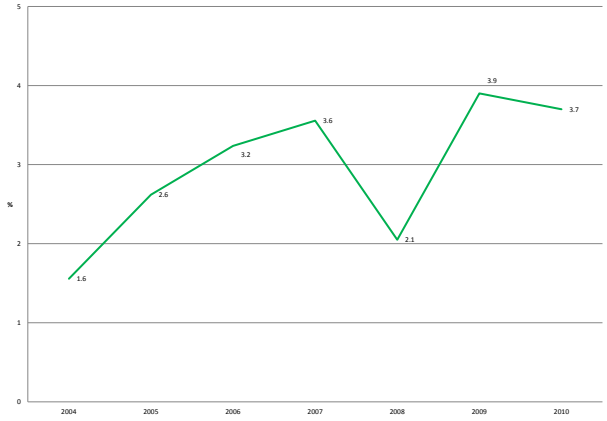


FIGURE 86. PERCENTAGE TODDLERS WITH TEETH DEMINERALIZATION, ARUBA 2004-2010.

6.5.8 TODDLERS WITH FRACTURED TEETH, BY YEAR 2004-2010

Facial traumas that result in fractured, displaced or lost teeth can have significant negative functional, esthetic and psychological effects on children. An estimated 30 percent of preschool children suffer injuries to the primary dentition. The greatest incidence of trauma to the primary teeth occurs at 2 to 3 years of age, when motor coordination is developing. In Aruba the percentage of toddlers with fractured teeth increased from 9.9 in 2004 to 11.4 in 2009. In 2010 the percentage of toddlers with fractured teeth doubled. The increase in percentage of toddlers with fractures from 11.4 in 2009 to 24 in 2010, see figure 87.

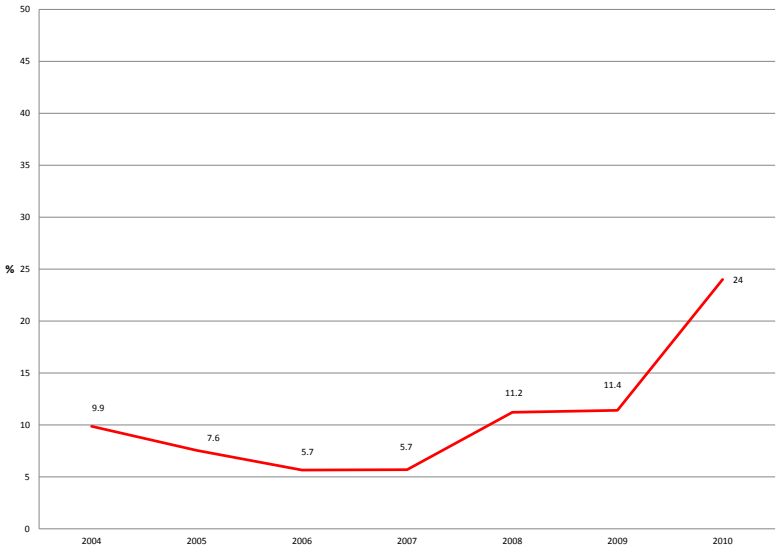


FIGURE 87. PERCENTAGE TODDLERS WITH FRACTURED TEETH, ARUBA 2004-2010.

6.6 CHILD/YOUTH ABUSE

In 2008, a pilot study was conducted on the nature and the prevalence of child abuse on Aruba (Guda, 2008). This pilot survey focused on the number of cases of child abuse reported to schools and to other governmental and non-governmental organizations in charge of providing care, support, guidance to children and families in general, and to victims of child abuse, in particular. This survey revealed that in 2008, 182 cases of child abuse were reported. The majority of these (25.3 percent) involved physical neglect of a child (see Figure 88).

Both girls and boys were victims of child abuse, girls representing a slightly higher percentage of reported cases (52.5 percent) when compared to boys (47.8 percent). However, the nature of the abuse differed between boys and girls. Boys were more often subjected to physical neglect (33.3 percent), whereas girls were more often subjected to sexual abuse (22.1 percent) or physical abuse (22.1 percent; see Figure 84).

When considering the age of the children, the data obtained showed an increase in reported cases as age progressed up to the age of 16 years, where there was a visible drop in the number of reported cases (see Figure 89). As age progressed, there was also a shift in the nature of the abuse being reported. In children up to age 5 years, physical neglect was the most often reported type of abuse (41.7 percent), followed by emotional neglect (29.2 percent). In children between 6 and 11 years of age, physical neglect was still the most often reported type of abuse (34.2 percent), followed by physical abuse as the second most often reported type of abuse, representing 26.0 percent of the total number of reported cases. In adolescent children between 12 and 17 years of age, neglect of education took first place, followed by physical abuse and sexual abuse, representing both 17.6 percent of reported cases (see Figure 90).

Overall, when assessing the damaging effects of the abuse, the findings of the study indicated that in the majority of the reported cases of child abuse there was mention of moderate (33 percent of total) to serious (37 percent of total) consequences for the child. There were no reports of fatal consequences.

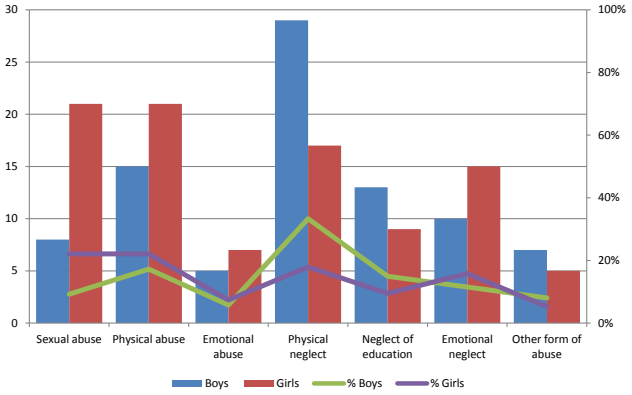


FIGURE 88. PREVALENCE AND NATURE OF CHILD ABUSE BY GENDER.

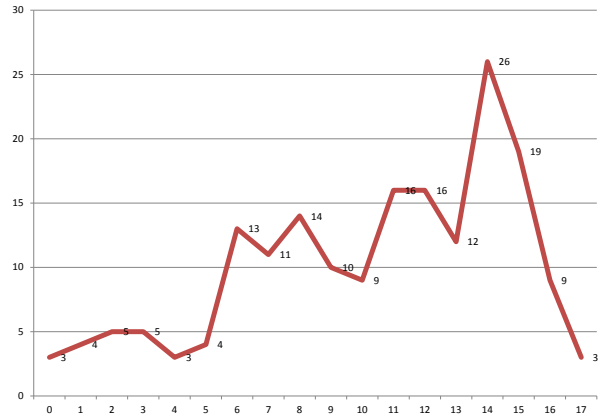


FIGURE 89. THE NUMBER OF REPORTED CASES OF CHILD ABUSE BY AGE OF THE CHILD.

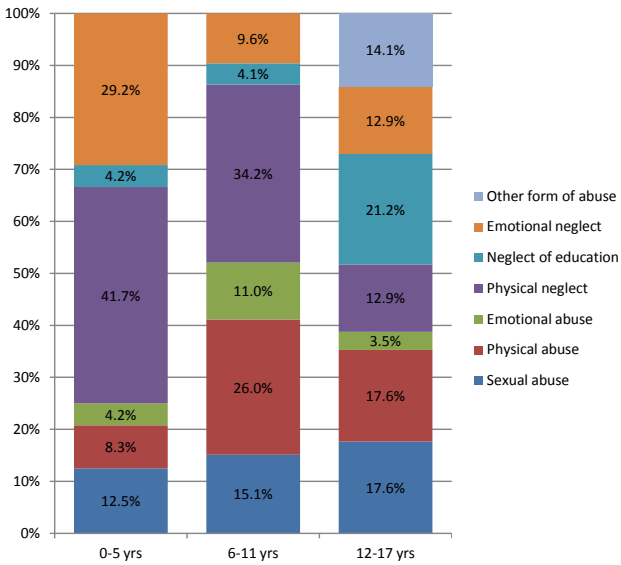


FIGURE 90. TYPE OF CHILD ABUSE BY AGE CATEGORY.

6.7 TEEN PREGNANCY

Teen pregnancy and childbearing bring substantial social and economic costs through immediate and long-term impacts on teen parents and their children. (CDC, 2012)

Teen pregnancy has its effects on the health costs, high school dropout rates among girls with the consequence of lower educational achievement, more health problems and probable unemployment as a young adult. (CDC, 2012)

These effects remain for the teen mother and her child even after adjusting those factors which increased the teenager's risk for pregnancy, such as growing up in poverty, having parents with low levels of education, growing up in a single-parent family, and having poor performance in school. (Singh et al., 2003)

Aruba is not different from other countries in the region and the world. The birth rate of teenage pregnancy for age category 15 to 19 years is about 40 live births per 1,000. This rate has been steady for the past 10 years.

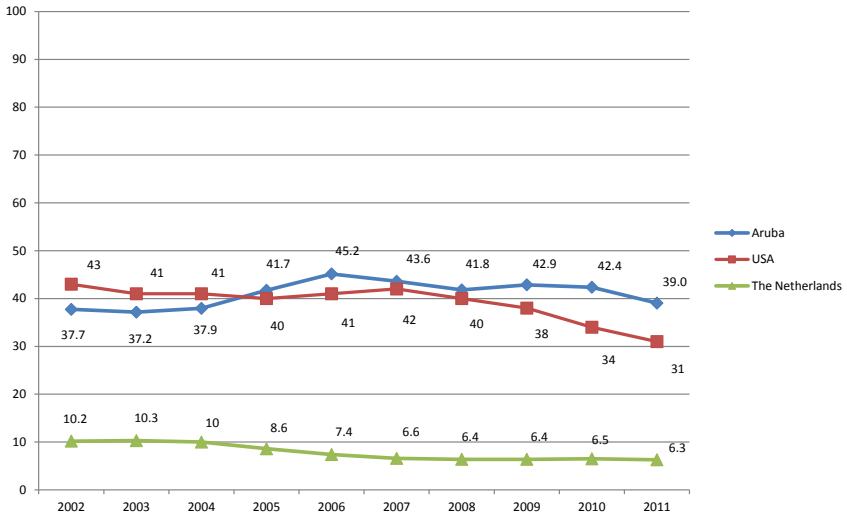


FIGURE 91. BIRTH RATE TEENAGE PREGNANCIES 15-19 YEARS.

As figure 91 shows the regional birth rates teenage pregnancies of Aruba and the USA are about 4 times higher as compared to the birth rates of the Netherlands. The teenage birth rates for the USA have shown a steady decrease from 2008 up to 2011. In Aruba however there is a slight decrease only from 2010 to 2011. The teenage birth rate for the Netherlands has been steady for about the past 8 years. This birth rate is less than 10 live births per 1,000 girls between the ages of 15 and 19 years.

When comparing the birth rate of Aruba with other European countries, the difference is significant. Switzerland has the lowest rate between European countries, 4.3 per 1,000 with the United Kingdom having the highest, 23.6 per 1,000. The latter is half the birth rate of Aruba, see figure 92.

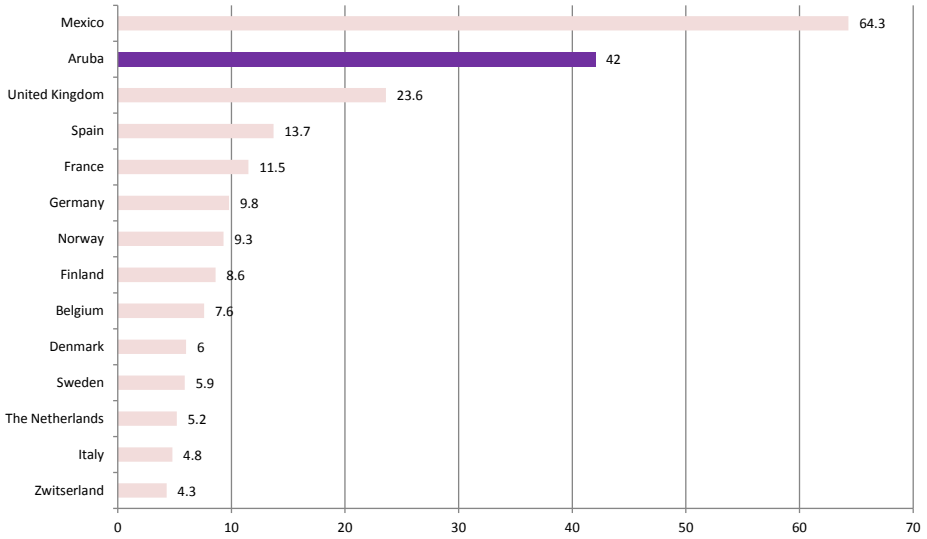


FIGURE 92. LIVE BIRTH RATES EUROPEAN COUNTRIES.

However when comparing the teenage live birth rate of Aruba with countries in the American region, the Aruban rate is similar to the rates of North America, which is the second lowest birth rate worldwide, see figure 93.

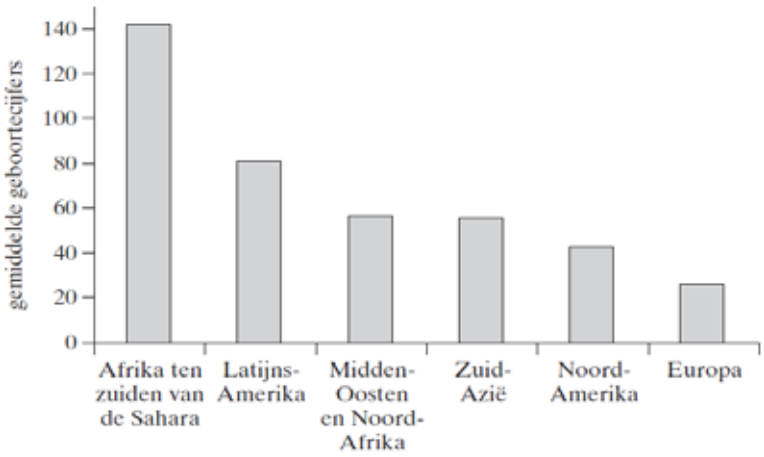


FIGURE 93. LIVE BIRTH RATES, 15-19 YEARS FOR DIFFERENT REGIONS WORLDWIDE, 2003.

6.7.1 ABORTION

Teen pregnancies cannot be evaluated without taking into consideration the abortion numbers among teenagers. In the Treffers study it is stated that about 35-70 percent of the teenage pregnancies are interrupted. These data are from industrialized countries that have reliable data concerning abortions. The Netherlands have a low abortion percentage, which is 8.6 percent among teenagers between 15-19 years. In the document "Teenage pregnancies in Aruba" by the Social Economic Council (Sociaal Economische Raad) of Aruba, it is stated that the abortion data received from the hospital, is just the tip of the iceberg. As further stated in this document, it is known that abortion does occur in private practices of general practitioners and also at home, with the many negative consequences for the health of the mother. Figure 94 presents the absolute number of live births together with the absolute number of abortions.

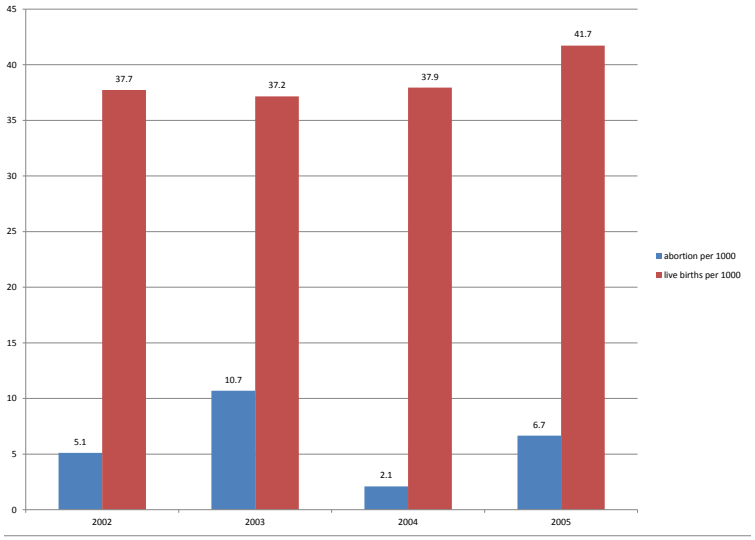


FIGURE 94. NUMBER OF TOTAL LIVE BIRTHS AND ABORTIONS PER YEAR IN ARUBA, 2002 - 2005.

Year	Nr. of abortions (15-19 yrs)	Nr. of abortion per 1000 (15-19yrs)	% teen pregnancies (15-19 yrs)
2002	16	5	24
2003	34	11	24
2004	7	2	22
2005	23	7	23

TABLE 20. ABORTIONS PER YEAR, ARUBA 2002 - 2005.

The abortion percentage for the USA which has a similar teen live birth rate as Aruba, is only 2.4 percent. For Aruba this percentage is around 24 percent, taking this into consideration, the abortion percentage in Aruba is high. But when comparing the Aruban abortion percentage with the Treffers' study, abortion percentage of Aruba is lower than 35 percent. Table 20 shows the absolute number of abortions per year, from 2002 to 2005. In this same table the abortion rate per 1,000 is showed together with the percentage of teen pregnancies per year in the age category of 15-19 years.

7

7. PROVISION, DEMAND AND SUPPLY OF HEALTH CARE TO THE ARUBAN POPULATION

In this chapter, attention is placed onto the provision of health care. After all, health and the provision of (health) care are strongly correlated. This chapter provides insight into a number of aspects in terms of health care use, demand and supply of health care from the perspective of the General Health Insurance of Aruba (AZV).

7.1 HEALTH CARE USE

AZV uses a financial administrative registration system which makes it impossible to quantify information on the health care use of Aruba. This system only registers and administrates the finances of the different health services, e.g. the general practitioner care service is financed by means of a flat-fee. This means that the frequency of the use of health care by a patient cannot be extracted from this database. The financial information presented was taken out of the AZV the annual account for 2011 and from information available of health care professionals contracted by AZV.

7.2 SUPPLY OF HEALTH CARE

In the Aruban health care system a distinction is made in the accessibility of the client to the first and second line of care. Client can independently contact care providers in first line of care, without a referral. This applies to e.g. a general practitioner, the dentists, physical therapists and midwives. Highly specialized medical care, inpatient care (the second line of care) is offered by the Dr. H. Oduber Hospital and medical specialists in private practices. A client or patient is referred to the second line through the first line of care.

Specialized care, not available on the island, is referred to specialized care providers in the Netherlands, USA, Curaçao, Bonaire, Colombia and Venezuela.

7.2.1 GENERAL PRACTITIONERS

On December 31st, 2011 there were a total of 32 General practitioners' (GP) practices and a total of 39 general practitioners (GP's) providing general practice care to the population. Two third of the GP's were male (61.5 percent, n=24) and about a third (38.5 percent, n= 15) were female. This percentage is similar to the Netherlands where 37 percent of the GP's are female and 63 percent are male.

The Aruban general practice sector is organized in 26 solo practices (81.3 percent), 5 dual practices (15.6 percent) and one group practice (3.1 percent). Steps were taken in 2010-2011 to improve the accessibility to the general practice services to the population. Six additional GP's were contracted by AZV and were placed in the most densely populated districts of the island. A total of 17.2 million florins were paid by the executive body of AZV for general practice services for the Aruban population.

Figure 95 illustrates the distribution of the GP practices over the island; it depicts the distribution of the general practice services amongst the population. A clear correlation between the population density and the size of the practice can be noted.

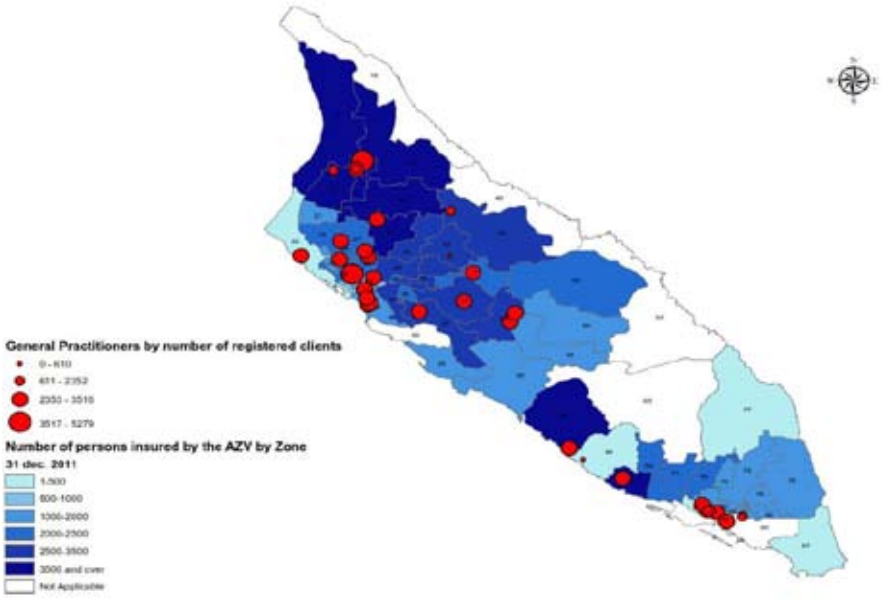


FIGURE 95. DISTRIBUTION OF THE GP PRACTICES OVER THE ISLAND, ARUBA 2011.

7.2.2 PHYSICAL THERAPISTS

A total of 22 physical therapist private practices with a total of 28 physical therapists provide physical therapy services to the population. More than two third (64.3 percent, n= 18) of the physical therapists were female and 35.7 percent (n=10) of the physical therapists were male. The percentage of female physical therapists is higher than the national Dutch percentage of 53. The Aruban physical therapy sector is organized into 81.82 percent (18) solo practices, 13.64 percent dual practices (3) and one group practice (4.55 percent). A total of 4.7 million florins were paid by AZV for physical therapy care in 2011. Figure 96 below shows the distribution of the physical therapists practices over the island.

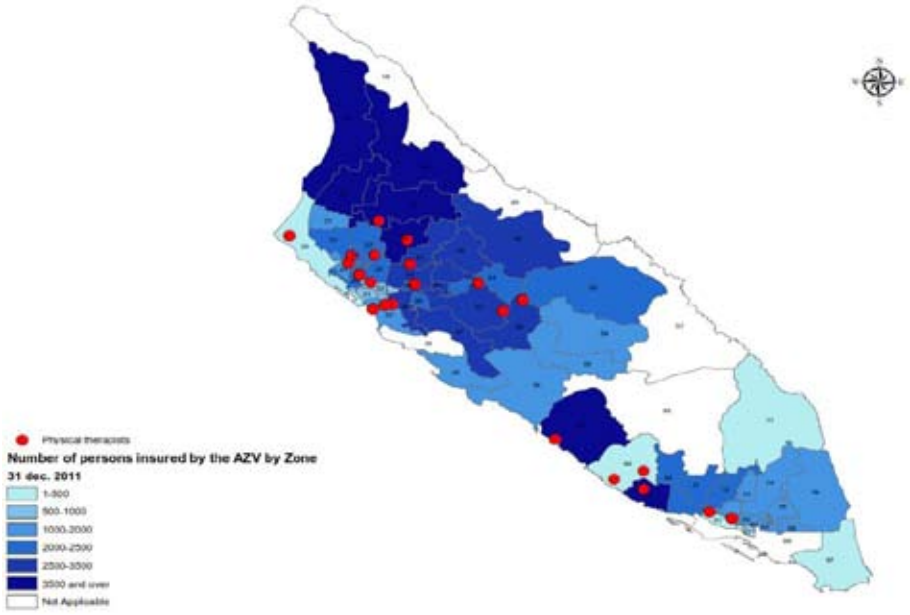


FIGURE 96. DISTRIBUTION OF THE PHYSICAL THERAPIST IN PRIVATE PRACTICES OVER THE ISLAND, ARUBA 2011.

7.2.3 MIDWIVES

There were 8 midwives in private practices on the island from which 2 of them were male and 6 female. The midwives are accessible from their own practices as well as from different locations on the island.

7.2.4 DENTISTS

On December 31st, 2011 there were a total of 19 dentist private practices distributed over the island. For the geographical distribution of the dentists on the island see figure 97.

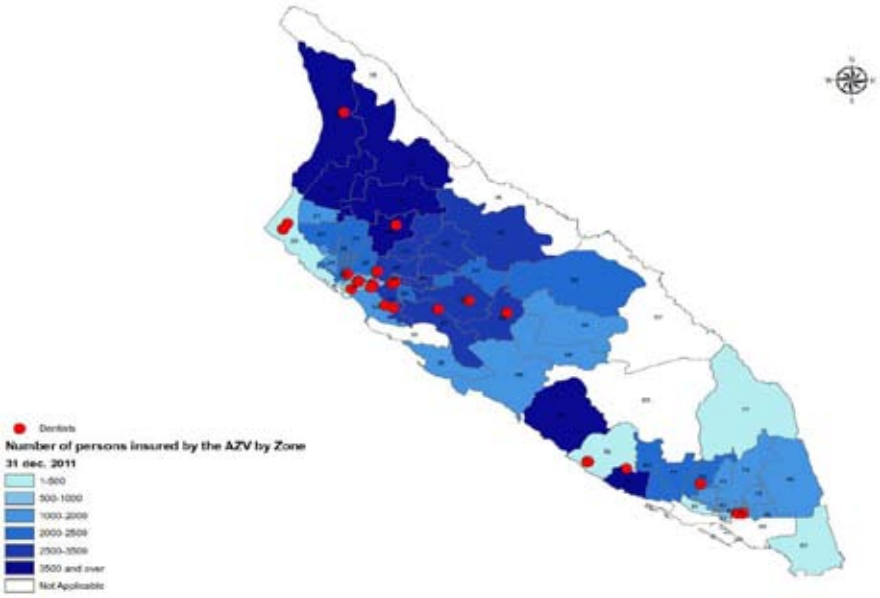


FIGURE 97. DISTRIBUTION OF DENTISTS ON THE ISLAND BY DENSITY OF PERSONS YOUNGER THAN 18 YEARS OLD, ARUBA 2011.

7.2.5 SECOND LINE HEALTH CARE

In the second line of care, the more specialized and more expensive care is provided by our local hospital or by medical specialists in private practices. The specialized second line of health care provided by the hospital is excluded from the distribution of medical specialists observed in figure 98. This figure refers to the medical specialist care in private practices.

The following medical specialties are provided in 2011 in private practice:

- Internal medicine (3ftes)
- Orthopedic surgery (4 ftes)
- Plastic Surgery (1 fte)
- Psychiatry (2 ftes)
- Ear-Throat-Nose (2 ftes)
- Gastroenterology (1 fte)
- Cardiology (4 ftes)
- General Surgery (5 ftes)
- Gynecology/ obstetrics (2 ftes)
- Ophthalmology (2 ftes)
- Dermatology (2 ftes)
- Neurosurgery (1 fte)
- Neurology (1 fte)
- Urology (1 fte)
- Pain clinic (1 fte)

The total amount paid by AZV for medical specialist care in private practice in 2011 was 24.6 million florins.

FIGURE 98. DISTRIBUTION OF SECOND LINE HEALTH CARE SERVICES, ARUBA 2011.

7.2.6 SUPPLY OF PHARMACEUTICAL CARE

On December 31st, 2011 Aruba had a total of 18 pharmacies. The pharmacies provide medication and medical related products to the population. In 2011, 2 out of the 18 pharmacies were owned by a pharmacist. The distribution of the pharmacies over the island can be observed in figure 99. A direct correlation can be noted between the density of the population and the size of the pharmacy. A total of 72.8 million florins were paid by the AZV for the total pharmaceutical care of the population in 2011 of which 65 million were directed to medication and 6.5 million to medical related products.

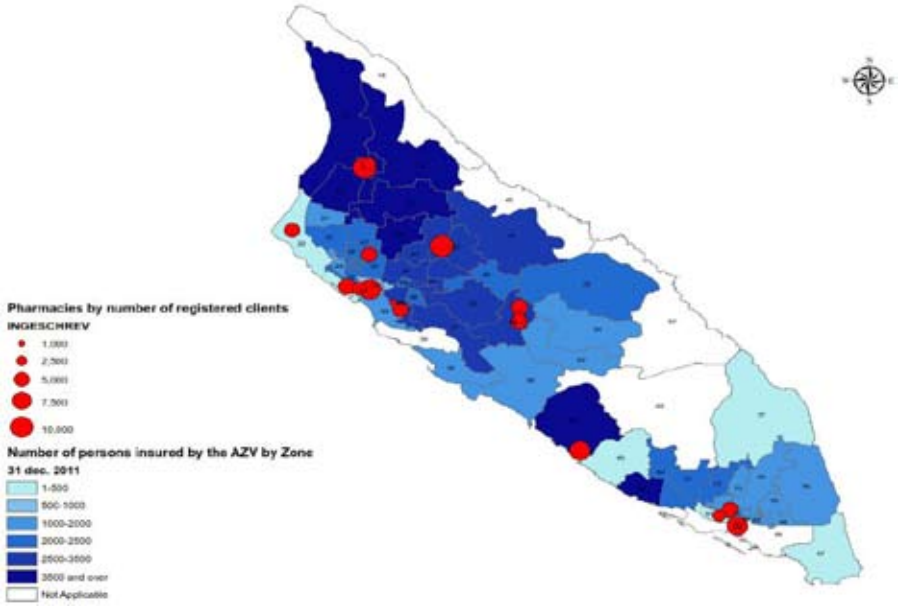


FIGURE 99. DISTRIBUTION OF THE PHARMACIES OVER THE ISLAND, ARUBA 2011.

7.3 HOSPITAL ADMISSIONS

Aruba has one hospital with about 300 beds. In figure 96, the number of total clinical admissions per year is illustrated. This information is provided by the Dr. H. Oduber Hospital.

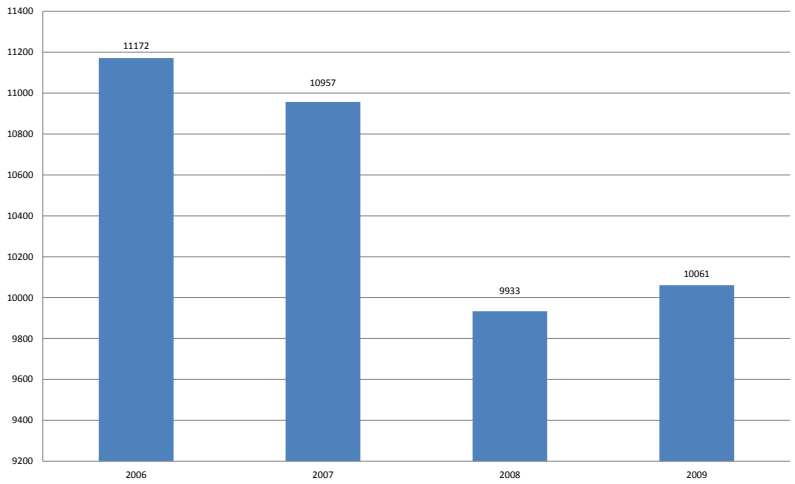


FIGURE 100. TOTAL NUMBER OF HOSPITAL ADMISSIONS PER YEAR, DR. H. ODUBER HOSPITAL ARUBA 2006-2009.

A decrease in the clinical admission is noted from 2006 to 2008; from 2007 to 2008 this decrease was of almost 10 percent (9.3 percent), see figure 96. From 2008 to 2009 a small increase has been noticed (+1.3 percent). The admissions are further analyzed by age categories and are illustrated in figure 100.

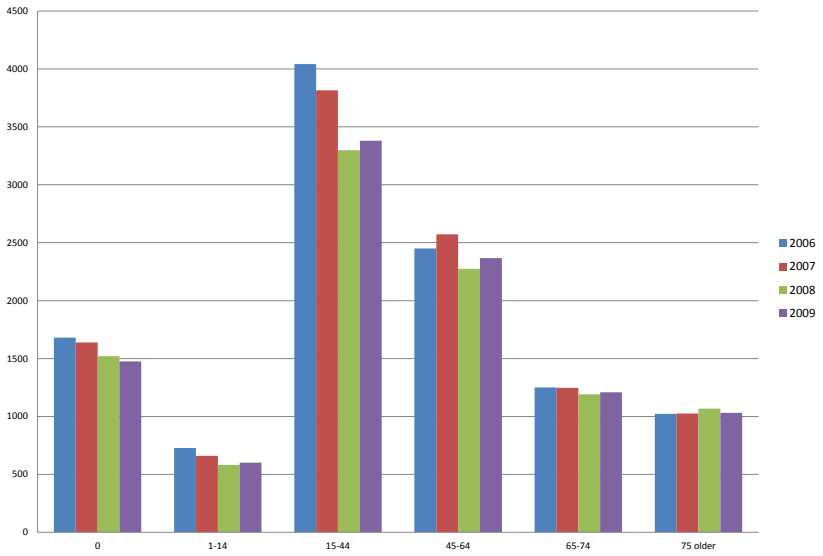


FIGURE 101. TOTAL NUMBER OF CLINICAL ADMISSION PER AGE CATEGORY, DR. H. ODUBER HOSPITAL 2006-2009.

As figure 101 above shows, persons in the age category 15-44 years are the most admitted to the Dr. H. Oduber Hospital, followed by the age category 45-64 and the age category 0 years, see figure 101.

As the Medisch benchmark Dr. H. Oduber Hospital showed, the age category 15-64 years occupies about 50 percent of all beds in the Dr. H. Oduber Hospital. The average hospitalization day of a patient is 8.1 days. Patients in the age category 65 years and up had a minimum of 11.1 hospitalization days to a maximum of 14.2 hospitalization days in 2009, whereas for the age category 15-44 this was 6.2 hospitalization days in this same year.

This means that although the age category 15-44 years has the highest number of clinical admissions, the age category 65 and up has the highest number of hospitalization days in the hospital, meaning that although the younger age category is admitted the most, their number of days admitted are less compared to the age category of 65 plus years (KIWA Prismant, 2012).

7.3.1 ADMISSION BY DIAGNOSIS

Admissions are categorized between elective admission and emergency admission. An elective admission is where a patient has been booked in to be admitted to hospital rather than coming in as an emergency. The booking is usually made after the patient sees a hospital specialist. The patient will then be placed on a waiting list until it is their turn to be admitted (KIWA Prismant, 2012).

Emergency admission patients are admitted through the Emergency Department. These are seriously injured or ill patients who need immediate treatment (KIWA Prismant, 2012).

ELECTIVE ADMISSIONS

The following graph illustrates the elective admissions by diagnosis during the period 2006 to 2009; a selection has been made of the top 15 of the most common admissions.

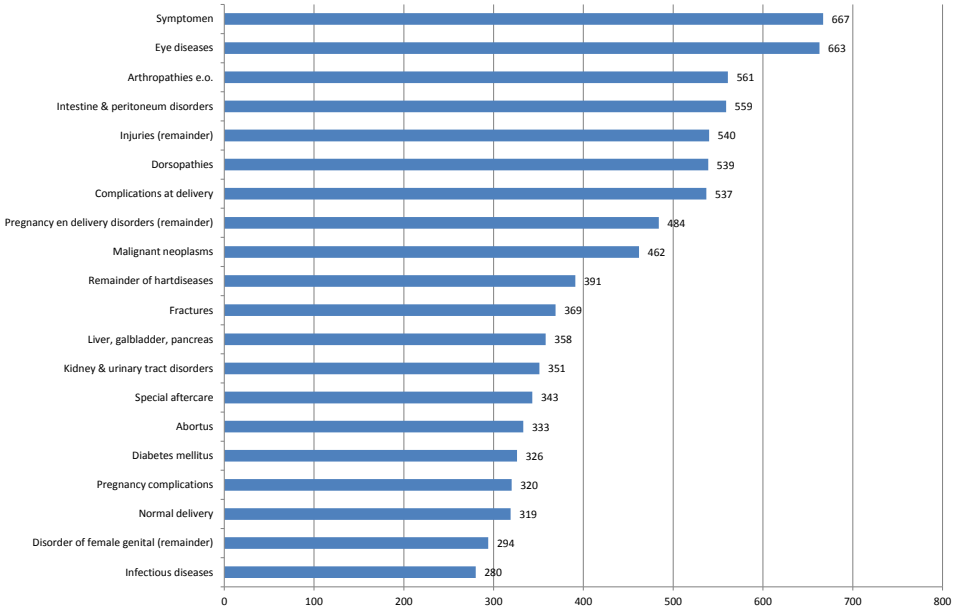


FIGURE 102. ELECTIVE ADMISSIONS BY DISORDER OR DISEASE AT THE DR. H. ODUBER HOSPITAL, ARUBA 2006-2009.

As figure 102 shows, eye disease is the most common cause of admission through the period 2006 to 2009, followed by arthropathies and dorsopathies and special aftercare.

EMERGENCY ADMISSIONS

The emergency admissions distributed are during the period 2006 to 2009 as follows, see figure 103. In 2007 the emergency admissions have reached a peak, 9504 emergency admissions; from 2008 to 2009 the emergency admissions had a decrease of about 44 percent. This decrease was due to the fact that live births were registered under the correct administrative code during that year.

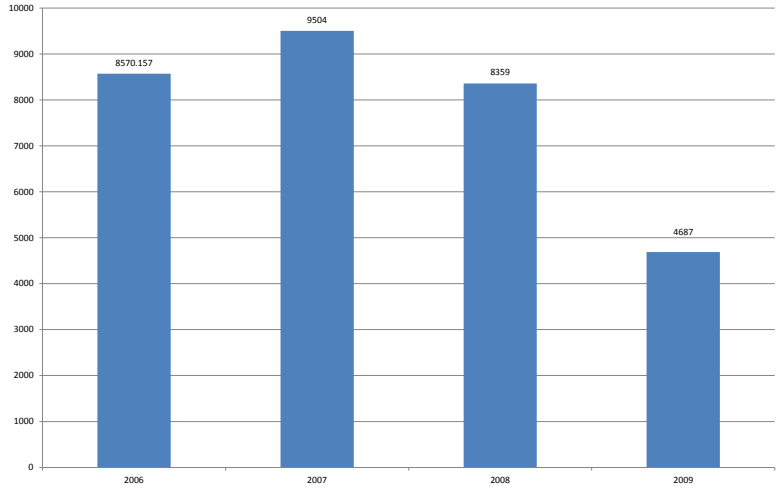


FIGURE 103. EMERGENCY ADMISSION AT THE DR. H. ODUBER HOSPITAL, ARUBA 2006-2009.

Diagnoses for emergency admission differ from the elective admission, since the patients need immediate care for their disease.

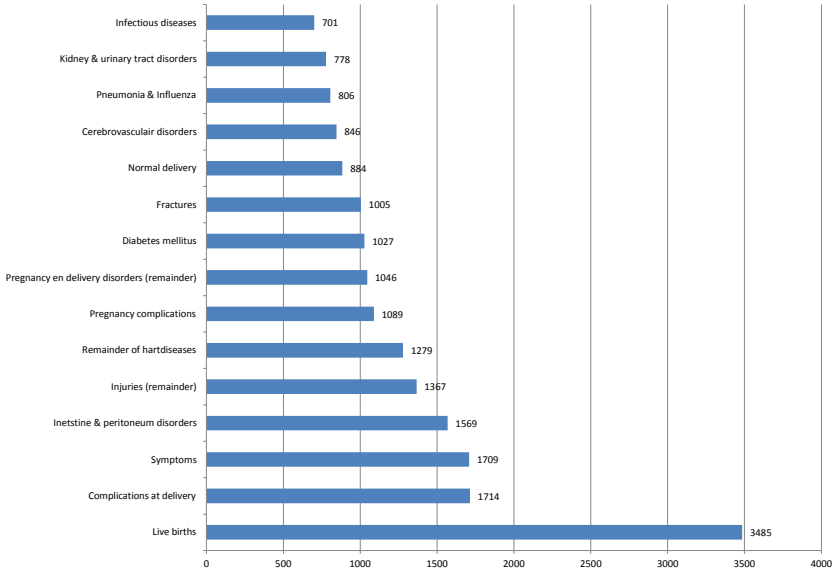


FIGURE 104. TOP 15 EMERGENCY ADMISSIONS AT THE DR. H. ODUBER HOSPITAL , ARUBA 2006-2009.

As figure 104 shows, live births or deliveries are registered as emergency admissions, although this is not the correct admission registration for emergency admission. This is the most common type of emergency admission followed by complications at delivery and symptoms. Symptoms are subjective and in this case difficult to specify as a specific disease. Live births are more than 10 percent of the total emergency admissions from 2006 to 2009 (KIWA Prismant, 2012).

In the top 5 of the emergency admission are also intestine & peritoneum disorders, injuries and remainder of heart diseases. Overall complications at delivery, pregnancy complications and pregnancy and delivery disorders dominate the diagnoses for emergency admissions.

Other diagnoses that are of importance are e.g. abortions, which during this same period there were 1005 elective admissions for all age categories as well as through the emergency admission. Cerebrovascular disorder is also a diagnosis which had about 1098 elective admissions including emergency admissions.

7.4 HEALTHY BABY CLINICS

The Department of Public Health of Aruba is the only provider of the vaccinations of the National Vaccination Program. Through the White Yellow Cross (WYC) distribution is made possible using the different locations it has on the island. Vaccinations are administered by the youth health doctors of the Department of Public Health. The White Yellow Cross (WYC) organizes healthy baby clinics at six different locations on the island: Noord, Oranjestad, Dakota, Santa Cruz, Savaneta and San Nicolas. For a small yearly family-fee these clinics provide consultations by physicians and nurses (9-10 times in the first 15 months) and also provide vaccination during the first five years of life of the newborn.

Besides provision of vaccination and consultation nurses of the WYC also perform a hearing screening on the newborns. In 2010, 1277 babies underwent a hearing screening test. This neonatal hearing screening is performed at a small extra fee. Consultations during the first years of life provide early detection of congenital problems and nutritional and educational advice at an early age may help prevent health risks later in life.

In 2010 there were 1231 newborns registered at the baby clinics at the WYC which is higher than the official registered births at the Population Registry Office of Aruba. One of the reasons for this discrepancy might be that babies from undocumented mothers are registered at the WYC but not at the Population Registry Office, see table 21.

Year	White Yellow Cross registered births	Registered births	%
2010	1231	1141	7.8
2009	1293	1213	6.2
2008	1389	1319	5.0
2007	1406	1339	4.8
2006	1477	1227	16.9

TABLE 21. LIVE BIRTHS WHITE YELLOW CROSS AND POPULATION REGISTRY OFFICE OF ARUBA.

In this programme, a child during their first 15 months of life receives 5 physician consultations and 5 nurse consultations. After this 15 months period, the child gets only 1 consult thereafter.

2010 there were 211 referrals to the family physician, where the following were detected, see table 22.

Health problems	Number of cases detected
Heart murmur	38
Strabismus (possible eyesight problems)	17
Atopic dermatitis	33
Hip dysplasia (probable)	35
Urological problemsproblems	16
Overweight	6

TABLE 22. HEALTH PROBLEMS DETECTED IN NEWBORNS IN 2011.

8

8. GROUPS OF PARTICULAR FOCUS

8.1 PEOPLE WITH MENTAL AND PHYSICAL DISABILITIES

Persons with disabilities often belong to the most vulnerable groups in society. Compared to the general population, they are at greater risk of experiencing limitations when performing daily activities and/or experiencing restrictions of participation in society. There are different types of disabilities in different domains, visual domain, hearing domain and mobility domain.

During the 2010 Aruba Census, a total of 6,955 individuals (2947 males and 4007 females) reported having a disability on at least one domain of functioning, representing 6.9 percent of the population of Aruba. The prevalence of disability increases almost exponentially with increasing age. Between ages 60 and 64, 11.1 percent reported having a disability, and in persons ten years older (between ages 70 and 74), the prevalence of disability doubled to 22.6 percent. Between ages 85 and 89, more than half of all persons 61.1 percent reported having a disability in at least one domain of functioning (see Figure 105 A). Moreover, although persons 65 years and older represented 10.4 percent of the total population of Aruba, they accounted for 42.2 percent of the total number of persons with disability (see Figure 105 B).

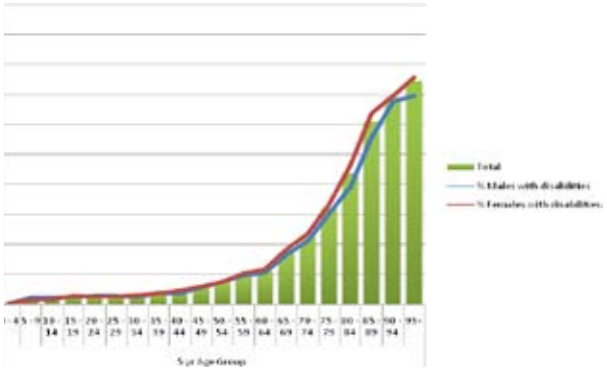


FIGURE 105 A. THE PREVALENCE OF DISABILITY BY AGE CATEGORY AND SEX.

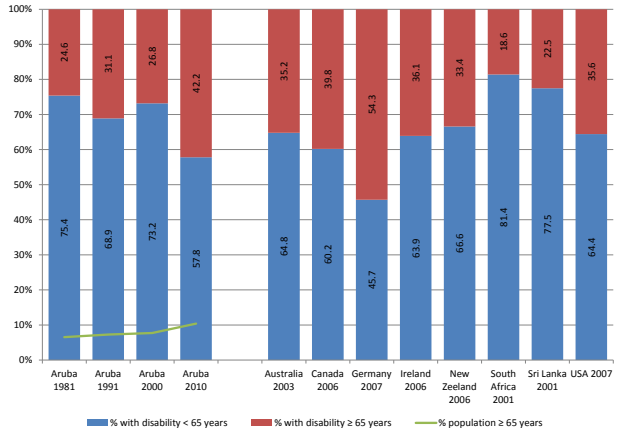


FIGURE 105 B. DISTRIBUTION OF AGES WITHIN DISABILITY POPULATIONS (WORLD REPORT ON DISABILITY, 2011).

Where the role of sex in the prevalence of disability is concerned, worldwide, females are most affected by disability. However, in Aruba, the prevalence of disability in females has for decades been very similar to that in males. According to the 2010 Aruba Census, 7.6 percent of females and 6.1 percent of males were affected by disability.

Overall, disabilities were most often reported in the visual domain of functioning, followed by disabilities in mobility (see Table 23).

Domain of functioning	Number of persons with disability*		Prevalence of disability (%)*	
	Males	Females	Males	Females
Seeing	1242	1852	2.8	3.7
Hearing	660	635	1.5	1.3
Mobility	1061	1867	2.2	3.5
Cognition	638	809	1.3	1.5
Self-care	424	623	0.9	1.2
Communication	547	521	1.1	1.0

*NOTE: NUMBERS AND PERCENTAGES ARE PROVIDED FOR PERSONS FIVE YEARS AND OLDER

TABLE 23. NUMBER OF PERSONS WITH DISABILITY BY DOMAIN OF FUNCTIONING.

As age increases, a steep increase is observed in the prevalence of disabilities in mobility and self-care and in the number of functional domains for which persons reported having a disability (see Figure 106).

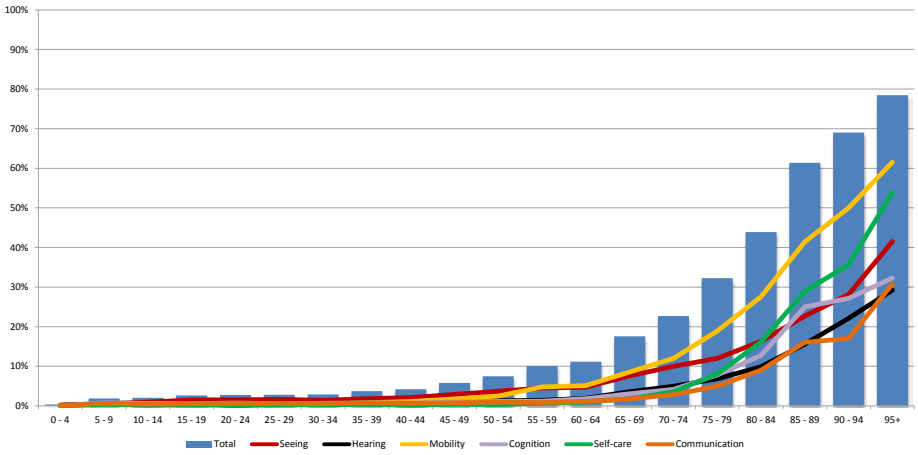


FIGURE 106. THE PREVALENCE OF DISABILITY BY DOMAIN OF FUNCTIONING AND AGE.

In total, 26.9 percent of persons with disability (on at least one domain of functioning) were in need of help with personal care and/or household chores. Those most in need of personal care were females, older persons and persons with disabilities on more than one domain of functioning. In addition, persons with a disability in self-care (94.1 percent), communication (70.6 percent) or cognitive functioning (55.6 percent) were more in need of help when compared to persons with a seeing (18.8 percent) or hearing (24.1 percent) disability.

Of persons with disability needing help, 6.7 percent reported not receiving the help and assistance they needed (5.5 percent of males, and 7.6 percent of females). These persons were on average younger than persons who did receive help and reported having a disability on a fewer number of domains of functioning compared to persons who received help.

Nearly a quarter of persons with disability not receiving help lived in a one-person household, whilst the majority of persons with disability receiving help lived in extended households, where help was more readily available. The help and assistance was mainly provided by family members who lived in the same household as the person with disability (71.0 percent).

In total, during the 2010 Aruba Census, 344 persons with a disability and in need of help were living in an institution. This group consisted of more females than males (210 and 134, respectively), who lived primarily in a home for the elderly (88.1 percent). Overall, the results of the 2010 Census revealed that as the age of persons with disability increases (and thus the number of domains on which they had a disability), the percentage receiving help from family members inside the household decreases, accompanied by an increase in the percentage receiving help from others who were paid to provide the help needed and also by an increase in the percentage of persons with disability being admitted to an institution.

8.2 FEMALE COMMERCIAL SEX WORKERS

As stated by the National Ordinance (LV BZ, 1994); *"Person of the female sex, who commits adultery with persons of the opposite sex, profession or habit, are required to register in person at the Ministry of Justice or by an official to be designated"*. As the Ordinance further states, this person is required to register at the Department of Public Health who is in charge of the medical screening.

The Service of Infectious Diseases of the Department of Public Health is in charge of the screening of the female commercial sex workers (FCSW) that are employed by the San Nicolas Bar association. This association represents 30 bars in San Nicolas where these FCSW operate; each bar is allowed to have a maximum of 4 FCSW at one bar at a time. A working permission for 3 months is granted once they pass their medical screening.

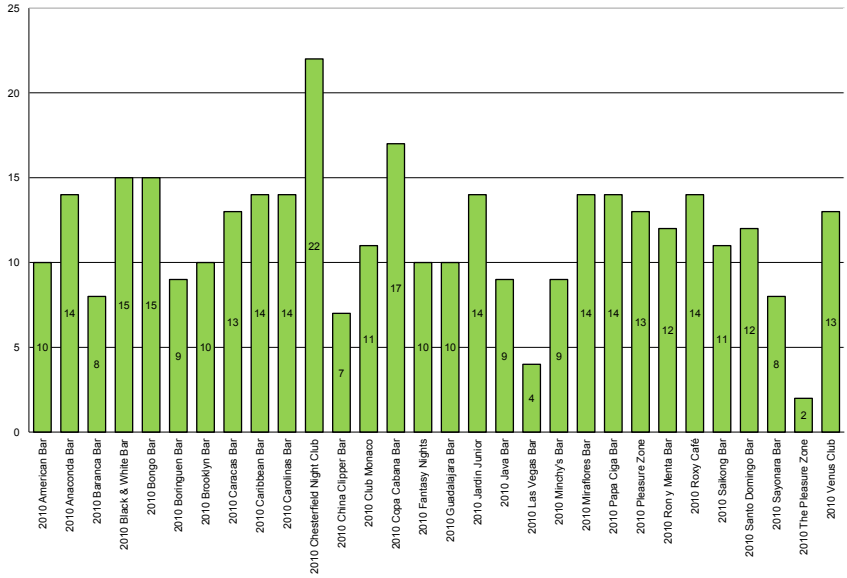


FIGURE 107. TOTAL NUMBERS OF COMMERCIAL FEMALE SEX WORKERS PER BAR, ARUBA 2010.

The medical screening consists of a weekly medical screening for STI's conducted by a General Physician appointed by the Department of Public Health. At the arrival and registration of the FCSW the laboratory tests for Syphilis and HIV tests are conducted. Also the PPD (Mantoux) skin test to detect the presence of antibodies against Tuberculosis and a chest X-ray for detection of pulmonary tuberculosis are conducted. These tests are done by the Service of Infectious Diseases of the Department of Public Health.

From 2006 to 2010 the Service of Infectious Diseases received a total of 1913 work permission requests specific for FCSW. About 3 percent of the requests were denied, from which 0.6 percent (n= 11) tested positive for syphilis, 0.5 percent (n=1) tested positive for HIV and 0.3 percent (n=6) had a positive PPD test.

In 2010 The San Nicolas Bas Association had 30 bars where the female FCSW operate. These bars are all located in San Nicolas. There is no bar association in the capital of the island for FCSW, there is no structure in place for the FCSW in the capital. These FCSW are considered as illegal FCSW. However these illegal FCSW are operational, exposing their health and their client's to risks. There are no registrations of the FCSW in the capital of Aruba. Most of the registered FCSW originate from Colombia, their age ranges between 18 and 50 years old, see table 24 for the distribution of the age categories.

Age category	Number
18-24	457
25-44	1448
45-64	8
Total	1913

TABLE 24. AGE DISTRIBUTION OF FCSW, ARUBA 2006 - 2009.

During their working period, the FCSWs as stated above undergo a medical checkup at the General Physician appointed by the Department of Public Health of Aruba. Refusal of this weekly check up will result in immediate deportation of the FCSW to the country of residence.

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