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An inescapable commitment

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I am honoured to be able to present the first report - about the gender gap in health - of the **ClosinGap** cluster. **Women for a Healthy Economy**, a business platform formed in September 2018 with the participation of Merck, MAPFRE, Vodafone, Repsol, Meliá Hotels International, Mahou San Miguel and Solán de Cabras, L'Oréal and BMW Group, and a common endeavour: to calculate the economic impact of the different gender gaps in Spain.

We want to set down in numbers a reality that exists and that is on the public agenda, that has a clear social aspect but also important economic consequences that we are going to quantify, investigate, analyse and contribute to eliminate. This is precisely the element that makes our initiative unique. The approach to inequality from a different perspective: the numbers that give greater strength to the social reality that underlies each gender gap.

What is the opportunity cost of wasting female talent? What measurable and quantifiable consequences does inequality between women and men have in areas such as health, work-life balance, digitalisation, pensions, mobility, tourism, free time or consumption?

The companies that form **ClosinGap** today, and those that will join us, acquire a triple commitment. First, the generation of data and its analysis. Second, the joint development of recommendations to help close the gender gaps. Finally, the implementation in our organisations of concrete measures aimed at eliminating any gender inequality and guaranteeing the better use of women's talent.

This first report analyses the gender gap in health and it is led by Merck, a science and technology company with a presence in 66 countries that I have the honour to chair in

Spain. The impulse of science and research are in the DNA of our company, with one main objective: to help create, improve and prolong people's lives; whether from the development of innovative drugs, laboratory and research technologies or everyday materials such as the liquid crystals of our mobile phones. And always with a commitment to sustainability.

Allow me to offer only one of the conclusions of this report on the health gap: women live longer, but with worse health than men. If these inequalities are eliminated and women reach old age with better health, the potential savings for the whole society would be almost 9 billion euros a year, equivalent to 0.8% of Spanish GDP.

Now I leave you thanking the confidence and commitment of the companies that have joined this challenging project. I am convinced that the only way to change the world and build a healthier economy is to take advantage of the talent of all people; men and women. And this is why we must eliminate gender gaps. The future depends on it.

01

ClosinGap. Women for a healthy economy



In 2014, Merck launched globally the **Healthy Women, Healthy Economies** program in collaboration with the Asia Pacific Economic Cooperation Forum in order to eliminate the obstacles that are preventative when trying to take advantage of the full potential of women. Shortly afterwards, this initiative was considered by the United Nations (UN) as a key program to achieve the Sustainable Development Goals (SDG).

Now, four years later, Merck has decided to promote the creation in Spain of **ClosinGap. Women for a healthy economy**. The objective of this cluster, presented publicly on September 7, 2018, is to **analyse the opportunity cost to the economy of the persistence of inequalities** in areas such as health, work-life balance, pensions, the use of free time, consumption, tourism, mobility or digitalisation.

These are some of the gaps that still persist between men and women, despite **Spain being among the 25 best-placed countries** (24) of the 144 countries studied in the *Global Gender Gap Report* of the World Economic Forum, which estimates that the reduction of its gender gap is close to 75% so far.

This report, published in November 2017, places Spain in the average for Western Europe and in a better situation than the global average (68%).

In addition, according to the latest Eurobarometer on Gender Equality², **Spaniards** - after Swedes and Finns - **are the Europeans who most declare their support and commitment to actively contribute to the gender equality** in the economy, in companies, in the promotion of a fair and democratic society or in the personal sphere.

Different official studies periodically reveal **some of the most significant consequences of these inequalities**: pensions up to 40% lower in the case of women, greater availability of free time for men or work leave for the care of children or relatives in situations of dependency almost exclusively requested by women, among others.

The purpose of **ClosinGap** is to start from these social consequences and go **a step further** by studying the effects that these gender gaps have in the economy and in terms of loss of female talent. In other words, **how much Spain stops growing** because it does not take advantage of the full potential of women.

The report *A way forward for Spain*, published by McKin-

sey³ in 2017, quantified that, “in the case of there not having been an entry of women into the labour market such as in the 1990s, the **Spanish GDP of 2015 would have been 18% lower**”.

Taking into account this reality, the question is **what is the specific loss of potential and talent for Spain for each of the gender gaps**.

With the objective of finding answers to this question, the companies that form this cluster will promote the publication of periodic reports designed to analyse the main gender gaps from this point of view. To date, the following fields of study are already planned⁴.

Company that leads the analysis	Opportunity cost analysed
Merck	Gap in health
Repsol	Gap in work-life balance
MAPFRE	Gap in pensions
Mahou San Miguel and Solán de Cabras	Gap in leisure
L'Oréal	Gap in consumption
BMW Group	Gap in mobility
Meliá Hotels International	Gap in tourism
Vodafone	Digital gap

This is the first report of this series of monographic studies. Its objective is to analyse some of the main causes and effects of inequality between women and men in the field of health and to generate the necessary debate in our society in order to accelerate the closing of the global gender gap that, according to the World Economic Forum, could take us around 170 years at the current rate⁵.

With this aim, the report has started from two key concepts:

The gender gap in health, defined as the set of existing inequalities in the state of **physical, psychological and spiritual welfare and by gender** that, therefore, can be avoided.

The opportunity cost is the **economic value of the alternative rejected when deciding on a specific action or expense**. This value equals the benefits that would have been obtained from having chosen the best possible alternative. There is always an opportunity cost because the available resources are limited (whether it is money or

time) since it is precisely this circumstance that forces us to choose among the possible options.



1 The Global Gender Gap Report, 2017.

2 Special Eurobarometer 465, 2017.

3 A way forward for Spain, 2017.

4 The analysis of the economic impact of the different gaps has required a careful allocation of dimensions to avoid overlaps or coincidences, and has adopted a conservative approach in such a way that they can be interpreted as a minimum threshold.

5 The Global Gender Gap Report 2016 (World Economic Forum).

Health, a determining factor in human welfare



In Spain, 74% of the population values their health positively.

In Spain **74% of the population values their health positively**, according to the National Health Survey (ENS) prepared by the Spanish National Institute of Statistics (INE) and published in 2018⁶. This survey shows an improvement in perception in the last decade for both men and women, as well as for all age groups, except for those aged 75 and over.

The ENS also shows “**the increase on the prevalence of chronic diseases, cardiovascular and metabolic risk factors, and musculoskeletal diseases**”, and on “**the population with limitations and functional disability**”.

This increase in chronicity is a consequence of the **growth of life expectancy**, which also implies a greater use of the public health system. Citizens value it with **6.68 points out of 10 in the Health Barometer** of the Spanish Ministry of Health, Consumption and Social Welfare⁷.

A National Health System that has, according to 2016 data, **175,118 medical professionals** (of which 47.7% are men and 52.3% women) and **186,033 nursing professionals** (of which 85.9% are women and only 14.1% men).

In Primary Care (PC), the distribution of **medical professionals** by gender shows a less balanced pattern (41.8% men and 58.2% women) than in Specialised Care (SC) (49.2% men and 50.8% women). This imbalance is higher for **nursing professionals**: while 78.7% of PC nursing personnel are women, it rises to 87.2% in SC.

The work of these professionals and the operation of the Spanish healthcare system is highly valued at a global level, being **the third country after Hong Kong and Singapore in the latest ranking developed by Bloomberg**⁸ that analyses medical costs, quality of care, life expectancy and living standards. Likewise, The Lancet places **Spanish healthcare among the top 20** of its Healthcare Access and Quality Index, with 92 points out of 100.

However, the morbidity and mortality statistics⁹ and the National Health Survey¹⁰ show a **limited number of gender gaps in health**. Thus, the survey shows that “men value their health favourably (78%) more frequently than women (70%)” and that “the gap widens as going down the social scale”.

In order to carry out the analysis that is the subject of this report, we have tried to monitor the **life cycle of people (men and women) in relation to their health and their relationship with health services** based on a **diagnosis** that it is built upon the official statistics from the Spanish Ministry of Health, Consumption and the Social Welfare and the Spanish National Institute of Statistics, mainly.

The analysis is limited to the registry of indicators that report on the health of people and the possible existing gender inequalities, both those that come from the supply of health services” and the demand (people)¹², beginning with primary care (identification of health problems), followed by hospital care (diagnoses and clinical procedures) to conclude with the differences in morbidity and mortality between men and women¹³.



⁶ National Health Survey, Spanish National Institute of Statistics (ENS, INE, 2017).

⁷ Health Barometer (Spanish Ministry of Health, Consumption and Social Welfare, 2018)

⁸ Available at <https://www.bloomberg.com/news/articles/2018-09-19/u-s-near-bottom-of-health-index-hong-kong-and-singapore-at-top>

⁹ For this work, an in-depth analysis of key indicators of the Spanish Health System has been carried out (INCLASNS, MSCBS), the Primary Care Clinical Database - BDCAP (MSCBS, 2015), the Minimum Basic Data Set - Ambulatory Specialised Attention (CMBD-AAE) (MSCBS, 2015), the Minimum Basic Data Set - Hospitalisation (CMBD-H) (MSCBS, 2015) and the Death Statistics according to the cause of death (INE, 2016).

¹⁰ Spanish National Health Survey (ENS, INE, 2017).

¹¹ Minimum Basic Data Set (MBDS) of Specialised Ambulatory Care (CMBD-AAE) and Hospitalisation (CMBD-H) and Database of Primary Care Clinics (BDCAP, MSCBS).

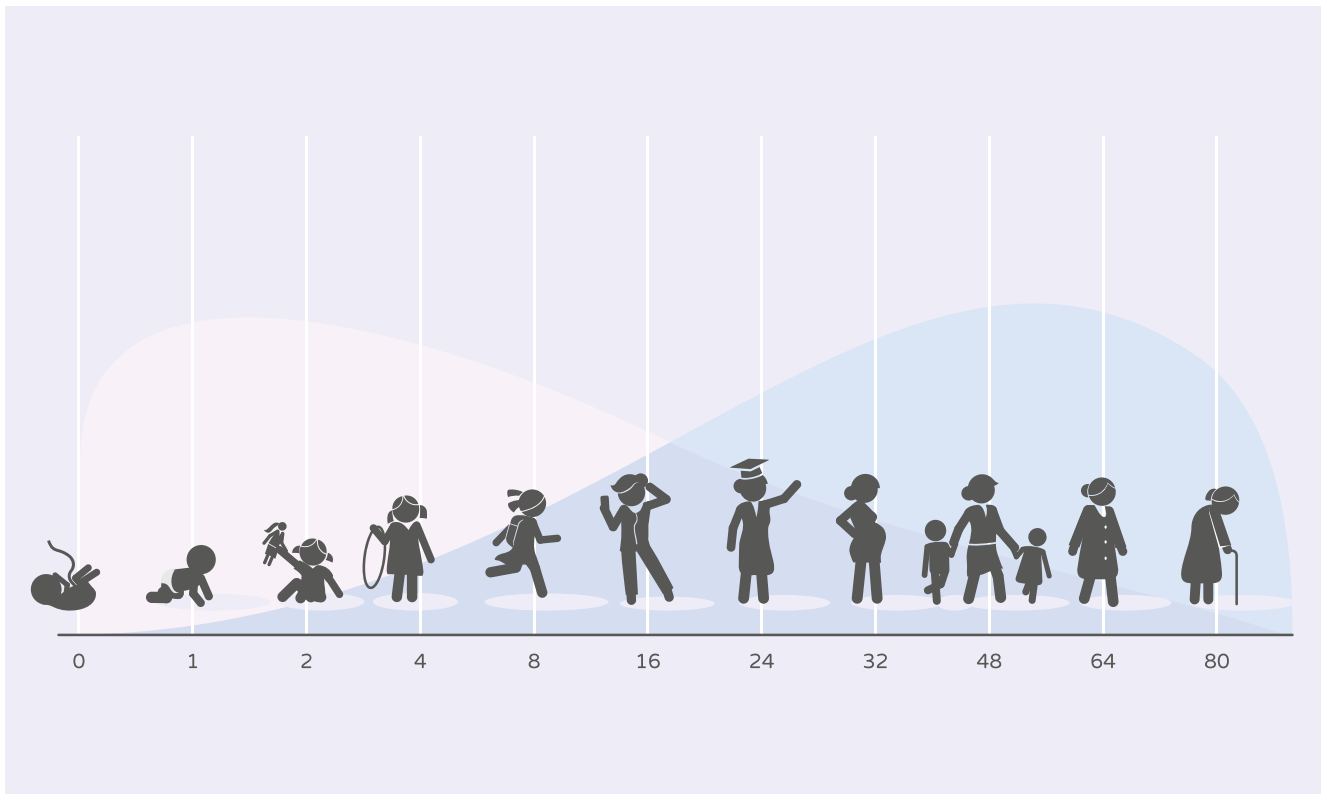
¹² Spanish National Health Survey.

¹³ The analysis carried out to identify the gender gaps in the clinical pathologies registered in the different levels of health care (primary / hospital) starts from an overview of the total of identified medical diagnoses, from which (i) those related with the genital tract - both men (M) and women (W), including breasts, are eliminated; (ii) the frequency of diagnosis for each sex is calculated over the total number of people/diagnoses for each sex; (iii) the ratio between both frequencies is calculated from both the male (H / M) and the female (M / H) perspective; and (iv) over these ratios those whose incidence is higher than 2 times that observed for the opposite sex are identified and the diagnoses with frequency <1% for each sex over the total of the corresponding sex are eliminated.

Causes of inequalities between women and men in health

Health patterns are determined by **biological (natural)** and **social (standard) causes** that determine the different types of risks throughout life, from earliest childhood to mature age, through adolescence, youth, adulthood (fertile periods in the case of women) and old age.

Figura 1. Ciclo de vida



Biological factors

Biological factors mean some people are genetically more predisposed to certain health problems and diseases. They respond to unique biological differences between women and men such as **maternity, prevalent illnesses and longevity.**

Social factors

Social factors determine the vulnerability of people based on gender, age, income, educational level, employment status and residence, among other demographic, geographic and socio-economic attributes. The main factors in this group are, according to the literature¹⁴, **informal or non-professional care (usually fami-**

ly: children, elderly, dependent, sick people); access and use of health services; unconscious biases of gender in health; lifestyle and risk behaviours; stereotypes; and main work sectors or activities (occupation).

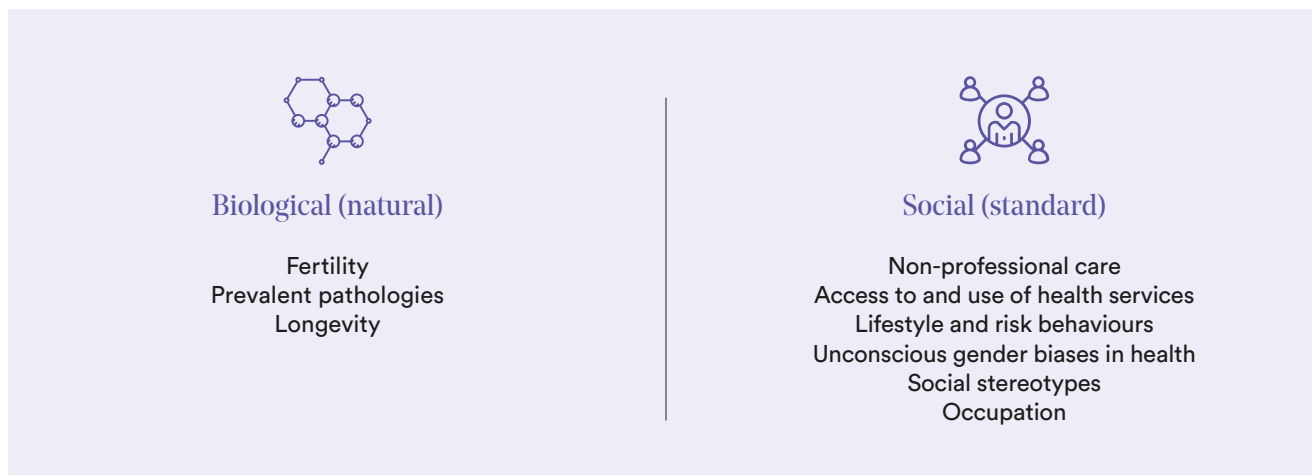


¹⁴ Among others, Sen G, Östlin P. (2007), "Unequal, Unfair, Ineffective and Inefficient. Gender Inequity in Health: Why it exists and how can we change it". Geneva: WHO; 2007. Available at: http://www.who.int/social_determinants/resources/csdh_media/wgekn_final_report_07.pdf and "Gender Inequalities in Health: A Descriptive Analysis of the Health of Spaniards" ("Desigualdades de género en salud: Un análisis descriptivo de la salud de los españoles y las españolas", Issue 27. Panorama Social, First Semester 2018), available at: https://www.funcas.es/publicaciones_new/Sumario.aspx?IdRef=4-15027.

Both types of factor affect the health of women throughout their lives, especially during fertility and at the end of it¹⁵, as well as during old age when, in addition, they are alone¹⁶. The risks to health are therefore not neutral with respect to gender, nor are their effects, which can be avoided, therefore it is necessary to identify them.



Figure 2. Causes of gender gaps in health



Effects of the gender gap in health

The state of health has economic and welfare effects.

The deterioration of one's health reduces the ability to generate income, produces direct, indirect and intangible costs, affects the demographic and economic health of the country, the quality of human capital and the productivity and limits the growth potential of individuals and that of the economy as a whole.

When there is a difference in the levels of health between men and women, we face a gender gap.

Figure 3. Characterisation of the effects of gender inequality in health in terms of GDP and social welfare

Source: Afi

In the personal / family sphere	For the economy	In public budgets
Income generation capacity	Demographic health	Efficiency and effectiveness in the allocation of public resources
Costs incurred	Human capital	-
Welfare	Growth potential	-

Consequently, the calculation of the opportunity cost in economic terms is estimated from the different effects that the gender gap in health causes in the economy and in human welfare and of society as a whole, through its impact on the potential to generate income, on the quality of human capital and on the allocation of resources, amongst other factors.

¹⁵ From menarche to menopause and thereafter.

¹⁶ 72% of single-person households over 65 years old are women; 82% of people over 65 years living alone in a widowhood situation are women (INE).

These are the main effects of identified causes by groups¹⁷:

	Opportunity cost		
	Personal and family sphere	Economy and society	Public budgets
Inequalities in the prevalence of diseases and life habits	<p>Health problems, pathologies and main causes of death</p> <p>Effects on morbidity and mortality in the short, medium and long term.</p> <p>Tobacco, alcohol, sedentary lifestyle, obesity, risk practices that produce accidents</p> <p>Access to and use of primary health care and hospital care services</p>		
	Physical, social and psychological consequences on the affected person, her family and the immediate environment.		Mental health impairment / eating disorders (ED)
The reduction in the fertility rate has effects on the demographic and economic health of the country		Demographic health → Growth of the population and working-age population → Growth of potential GDP → Dependency rate	
The role of the caregiver from a gender perspective	Deterioration of physical and mental health. Waiver of income by occupation	Dedication that would generate potential jobs for professional caregivers	Temporary incapacity of informal caregivers due to depression, anxiety
Employment and its consequences in health	Sectors of occupation Exposure and accumulation of exposure to agents Work accidents		Duration of recovery from occupational diseases
Unconscious gender biases in health	Accuracy in diagnostics and procedures		
Women live four years longer but with worse health		Better health care throughout life saves on the cost of care in old age.	

Proyección cualitativa

Estimación cuantitativa

¹⁷ Other effects associated with productivity, availability of productive time (including training), self-care or leisure and the effects of leaving or interrupting a professional career will be analysed from the perspective of other gaps, such as work-life balance, leisure and consumption.

02

The opportunity cost of the gender gap in health



2.1

Inequalities in the prevalence of diseases and life habits

To get to know the state of health and to identify the differences in prevalent illnesses, we start from the analysis of the statistics of diagnoses in primary care (BDCAP) and hospital care (specialised CMBD-AAE and hospitalisations CMBD-H), that allow, in addition, to focus on the different age groups -young (0-24 years), young adults (25-44), seniors (45-64) and elderly (65 years and over) - and, thus, accompany the analysis throughout the life cycle¹⁸.

Primary Care (PC)

Men and women of all ages share the same health problems (HP)¹⁹ when using Primary Care services, although:

- The most frequent health problems for men are related to general problems, respiratory and digestive system, skin, hair and nails²⁰.

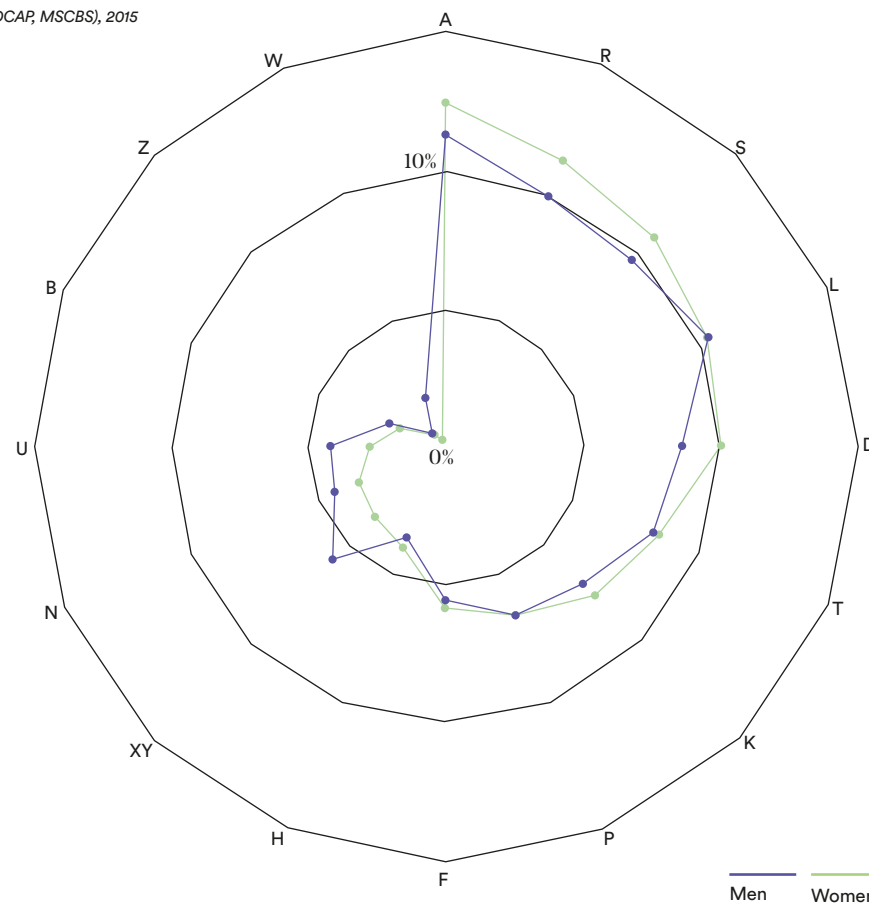
- For women, they are genital and urinary tract, nervous system and family planning, pregnancy, childbirth and puerperium.

The bigger difference is, logically, in the group of **family planning, pregnancy, delivery and puerperium**. In women the diagnoses of this group are 7.9 times higher than in men, followed by the genital tract (1.6 times), the urinary tract (1.5 times) and the nervous system (1.3 times), all with a higher ratio in the case of women. The rest of ratios are around 1, indicating that there is not much difference between men and women.

Figure 4. PC. HP. Effects of the gender gap in health

Source: Afi, based on the Data Base of Primary Care Clinics (BDCAP, MSCBS), 2015

- A: General and non-specific problems
- R: Respiratory system
- S: Skin, hair and nails
- L: Locomotor system
- D: Digestive system
- T: Endocrine system, metabolism and nutrition
- K: Circulatory system
- P: Psychological problems
- F: Eyes and connected areas
- H: Hearing system
- XY: Genital tract
- N: Nervous system
- U: Urinary tract
- B: Blood, hematopoietic organs and immune system (Lymphatics, spleen and bone marrow)
- Z: Social problems
- W: Family planning, pregnancy, delivery and puerperium



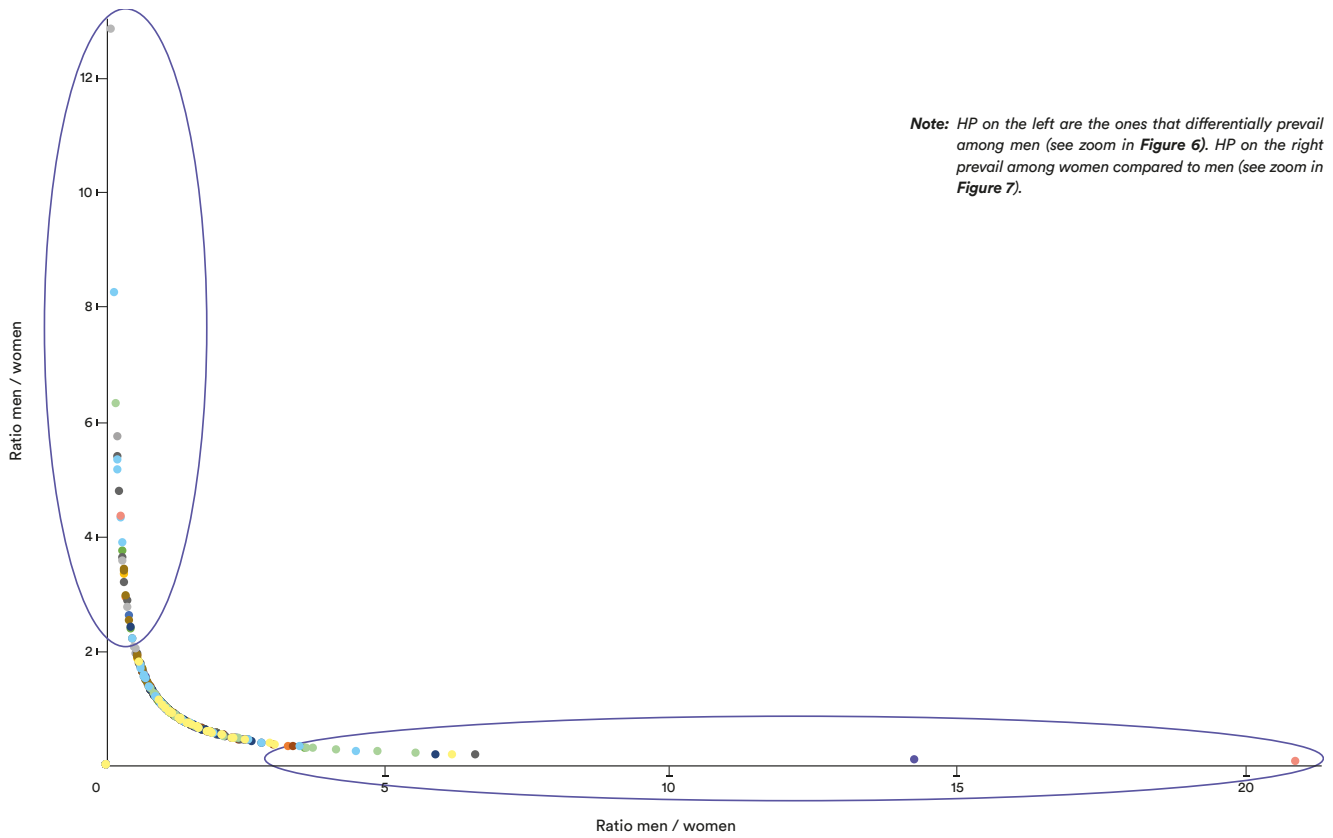
¹⁸ A general analysis is made for each sex and a particular one having eliminated the genital tract and breast in which the reference unit is Health Problem/diagnosis in the different levels of health care over the total number of people with certain Health Problem/diagnosis. Thus, the frequency of HP/diagnoses according to population group and sex is calculated, by finding the ratio between both frequencies from the male (M / W) and female (W / M) perspective. Once these ratios are identified, those whose incidence is higher than 2 times for the opposite sex (obvious differential behaviours) are marked and those diagnoses with frequency <1% (sufficient dimension) are removed.

¹⁹ In Primary Care, health problems (HP) are identified and recorded from the Database of Primary Care Clinics (BDCAP, MSCBS) 2015 with which the analysis has been carried out. The methodological description of the BCAP establishes that the information focuses on the user and the health problems (HP) or related events over time, as well as on the way they are managed.

²⁰ Hairs, nails, sweat and sebaceous glands.0%10%

Figure 5 PC. HP. Does not include genital tract and breast

Source: Afi, from the Database of Primary Care Clinics (BDCAP), 2015

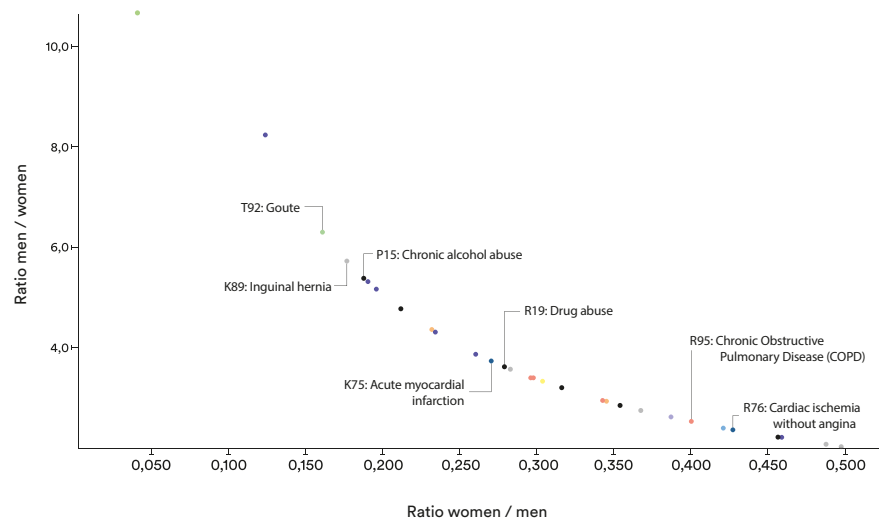


Eliminating the genital tract and breast it is observed that **men** present more frequently **HP related to cardiovascular system** (acute myocardial infarction, cardiac ischemia without angina), **respiratory** (chronic obstructive pulmonary disease-COPD), **endocrine system, metabolism and nutrition** (gout), **digestive system** (inguinal hernia) and **psychological problems** (drug abuse, chronic alcohol abuse) (Figure 6).



Figure 6 PC. HP. Men. All ages

Source: Afi, based on the Data Base of Primary Care Clinics (BDCAP), 2015



Women present more frequently **HP related to musculoskeletal system** (osteoporosis, knee osteoarthritis, other osteoarthritis, acquired deformities of the limbs), **endocrine system, metabolism and nutrition** (hypo and hyperthyroidism, goiter, other endocrine / metabolic / nutritional problems, deficit vitamin / nutritional), **nervous system** (carpal tunnel syndrome, migraine), **blood** (iron-deficiency anaemia, other non-specific anaemias), **urinary system** (cystitis, urinary incontinence), **cardiovascular circulatory system** (varicose veins), **skin** (hair loss) and **psychological problems** (depression). See Figure 7.

The results shown in Table 1 are extracted from the analysis.

Figure 7. PC. HP. Women. All ages

Source: Afi, based on the Data Base of Primary Care Clinics (BDCAP), 2015

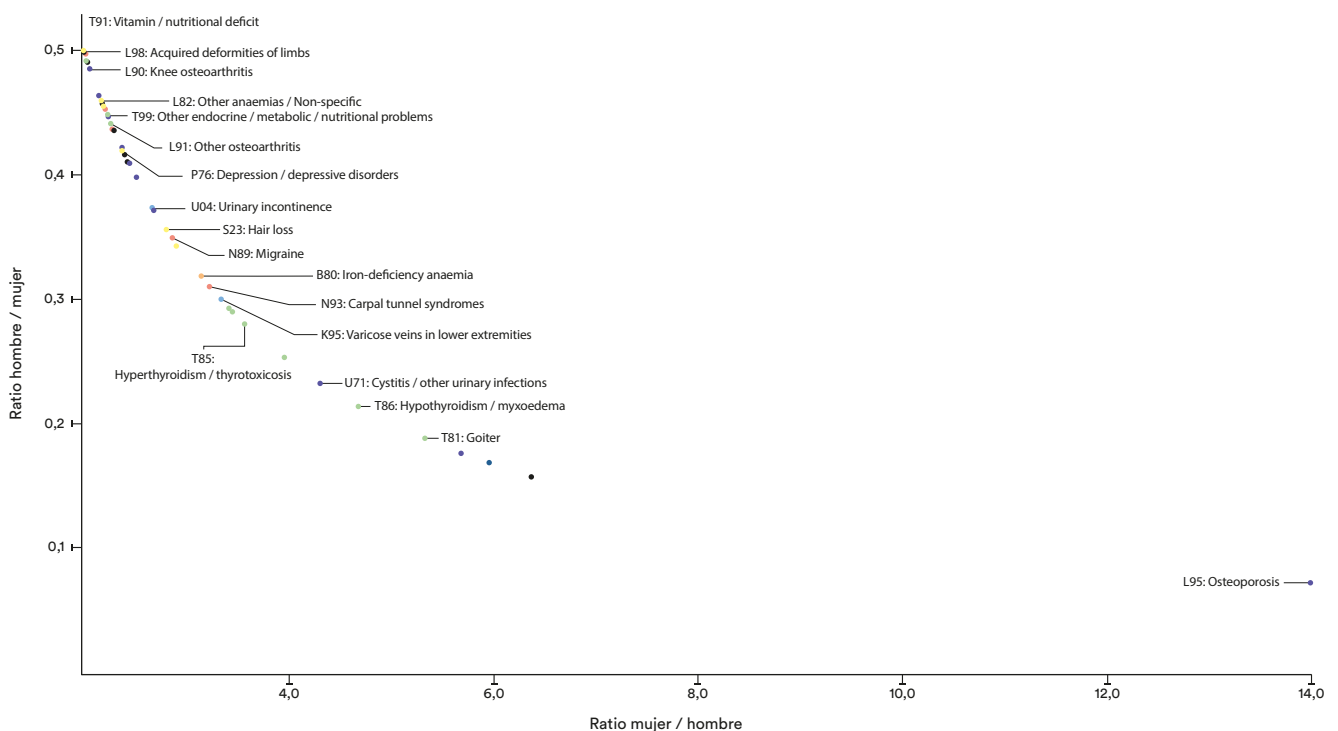


Table 1. Differential HP between men and women. PC. By age ranges

Source: Afi from the Database of Primary Care Clinics (BDCAP), 2015

Age	Women	Men
0-24 years	Cystitis / other urinary tract infections; other endocrine / metabolic / nutritional problems; dysuria / painful urination; iron-deficiency anaemia; hypothyroidism / myxoedema / hair loss.	Hyperkinetic disorders.
25-44 years	Asthenia / fatigue / general weakness; Iron-deficiency anaemia; Other anaemias / non-specific; Cholecystitis / cholelithiasis; Constipation; Vertigo syndrome; Varicose veins in lower extremities; Migraine; Carpal tunnel syndrome; Vertigo / light-headedness; Depression / depressive disorders; Voice signs / symptoms; Goiter; Hyperthyroidism / thyrotoxicosis; Hypothyroidism / myxoedema; Vitamin / nutritional deficit; Other endocrine / metabolic / nutritional problems; Cystitis / other urinary tract infections; Urinary incontinence; Other contraception / family planning methods; Infertility.	Unspecified liver diseases; Pilonidal cyst / fistula; Sterilisation; Drug abuse; Inguinal hernia.
45-64 years	Asthenia / fatigue / general weakness; Iron-deficiency anaemia; Other anaemias / non-specific; Constipation; Vertigo syndrome; Varicose veins in lower extremities; Palpitations / perception of heartbeats; Acquired deformities of the spine; Other osteoarthritis; Osteoporosis; Deformities acquired from members; Signs / symptoms of the hip; Unspecified joint signs / symptoms; Migraine; Carpal tunnel syndrome; Somatization / conversion disorders; Depression / depressive disorders; Acute laryngitis / tracheitis; Signs / symptoms of the voice; hair fall; Goiter; Hyperthyroidism / thyrotoxicosis; Hypothyroidism / myxoedema; Vitamin / nutritional deficit; Cystitis / other urinary tract infections; Urinary incontinence; Other methods of contraception / family planning.	Viral hepatitis; Inguinal hernia; Cardiac ischemia with angina; Acute myocardial infarction; Cardiac ischemia without angina; Atrial fibrillation / atrial flutter; Other heart diseases; Absence / loss of sexual satisfaction; Sexual dysfunction / concern not included in P07 to P09; Chronic alcohol abuse; Drug abuse; Chronic obstructive pulmonary disease (COPD); Goute.
> 65 years	Irritable bowel syndrome; Varicose veins in lower extremities; Palpitations / perception of heartbeats; Other fractures; Acquired deformities of the spine; Other osteoarthritis; Osteoporosis; Deformities acquired from members; Migraine; Carpal tunnel syndrome; Affective psychoses; Disorders of anxiety / state of anxiety; Depression / depressive disorders; Adaptation reaction not included in P02 or P82; Sensation of anxiety / tension / nervousness; Asthma; hair fall; Goiter; Hyperthyroidism / thyrotoxicosis; Hypothyroidism / myxoedema; Cystitis / other urinary tract infections; Urinary incontinence.	Inguinal hernia; Acute myocardial infarction; Cardiac ischemia without angina; Atherosclerosis; Peripheral arterial disease; Absence / loss of sexual satisfaction; Sexual dysfunction / concern not included in P07 to P09; Chronic alcohol abuse; Tobacco abuse; Chronic bronchitis; Chronic obstructive pulmonary disease (COPD); Gout; Malignant neoplasms of the urinary bladder; Urgent / frequent urination; Haematuria

Hospital Care (HC)

In Hospital Care, clinical care information is identified and recorded for patients treated in areas of hospitalisation without admission²¹ and home hospitalisation (Specialised Ambulatory Care -SAC-), as well as all the admissions produced in acute care hospitals (HC) of the Spanish National Health System²².

Specialised Ambulatory Care (SAC)

In general, the distribution of diagnoses by clinical service in SAC (Figure 8) is similar between men and women for all ages. However, it is more frequent in men, **urology** and **general and digestive surgery** and in women, **obstetrics and gynaecology, traumatology and orthopaedic surgery and pain and rheumatology unit** groups.

Figure 8. Specialised Ambulatory Care (SAC). Diagnostics. All ages

Source: Afi, from CMBD-AAE (MSCBS, 2015)

A. Ophthalmology

B. Another medical day hospital

C. Traumatology and Orthopaedics

D. Medical Oncology

E. Cancer day hospital

F. Obstetrics and Gynaecology

G. General and Digestive Surgery

H. Dermatology

I. Psychiatric day hospital

J. Digestive

K. Pain Unit

L. Radiation Therapy Oncology

M. Internal Medicine

N. Plastic and Reconstructive Surgery

O. Clinical Haematology

P. Otolaryngology

Q. Rest of Services

R. Maxillofacial Surgery

S. Nephrology

T. Stroke-Angiology and Vascular Surgery

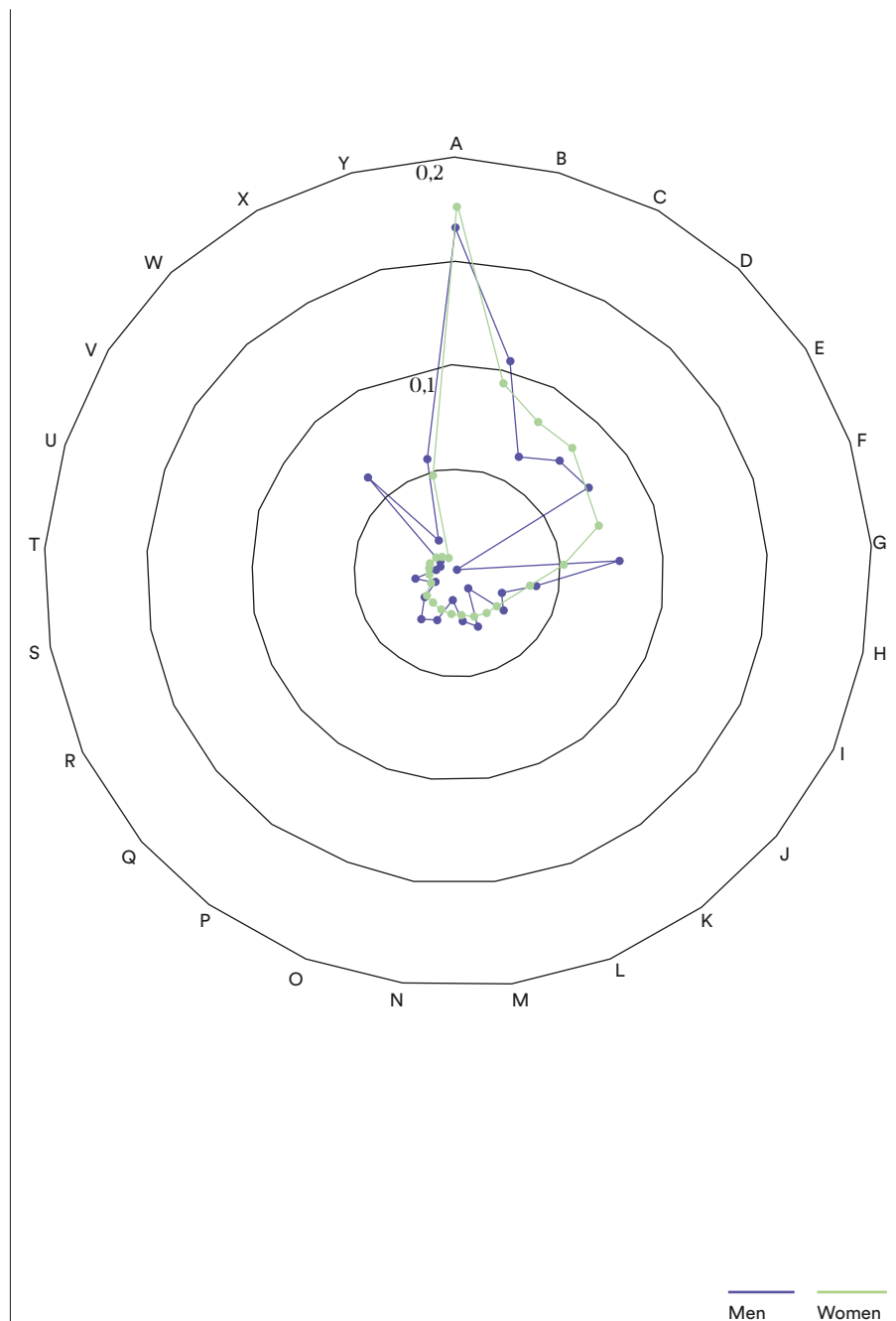
U. Anaesthesia and Resuscitation

V. Day Hospital

W. Urology

X. Cardiology

Y. Other groups



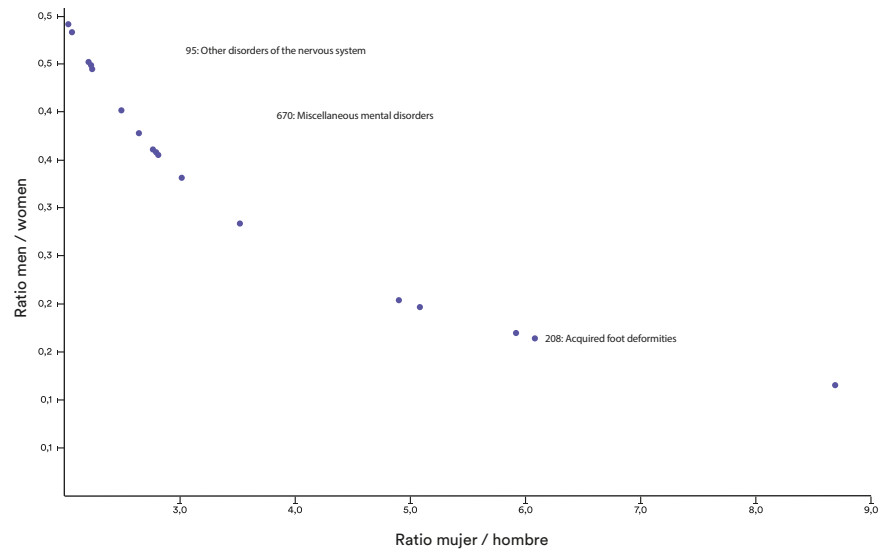
²¹ Among those are included ambulatory surgery, diagnostic-therapeutic procedures of high complexity, day hospital, emergencies and outpatient consultations.

²² To carry out this analysis, the Minimum Basic Data Set (MBDS) of Specialised Ambulatory Care (CMBD-AAE) and Hospitalisation (CMBD-H) of 2015 have been used.

If diagnoses related to the genital tract and the breasts are eliminated (Figure 12), women most frequently present diagnoses related to **thyroid disorders, mood disorders and osteoarthritis**.

Figure 12. H. Diagnostics. Women. All ages

Source: Afi from CMBD-H (MSCBS, 2015)



Men (Figure 13) present a higher frequency of diagnoses related to **coronary atherosclerosis and other heart diseases, mental health history and abuse of psychotropic substances, COPD and alcohol-related disorders**.

Figure 13. H. Diagnostics. Men. All ages

Source: Afi from CMBD-H (MSCBS, 2015)

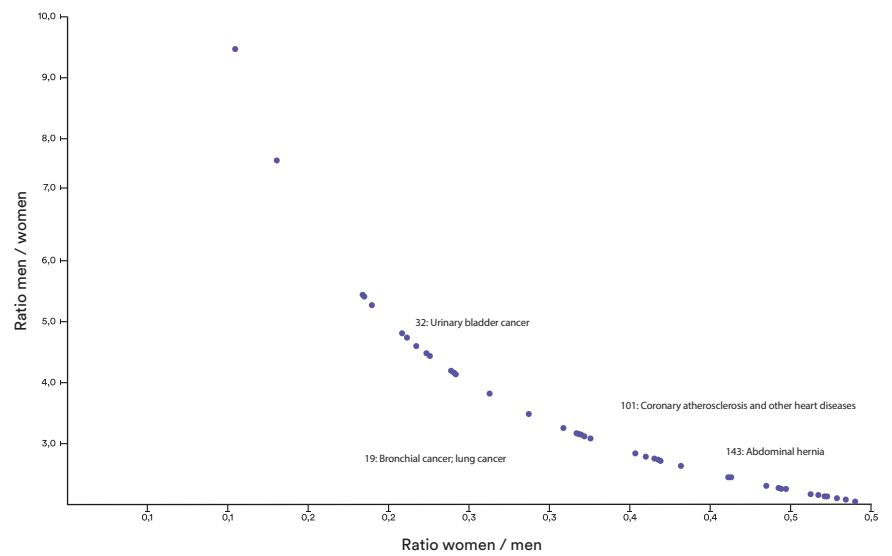


Table 2. Differential diagnoses between men and women. HC. By age ranges

Source: Afi from CMBD-H (MSCBS, 2015)

Age	Women	Men
0 - 24 years	Immunizations and screening of infectious diseases; Deficiency anaemias and others; Urinary tract infections.	Articular disorders and dislocations related to trauma; Upper limb fracture.
25 - 44 years	Immunisations and screening of infectious diseases; Thyroid disorders; Deficiency anaemias and others; Asthma; Urinary tract infections; Contraceptive and procreative treatment; Allergic reactions.	Articular disorders and dislocations related to trauma; Upper limb fracture; Lower limb fracture; Schizophrenia and other psychotic disorders; Disorders related to alcohol; Disorders related to psychotropic substances; E codes: Not specified; Codes E: Place of the event.
45 - 64 years	Thyroid disorders; Allergic reactions; Mood disorders.	Coronary atherosclerosis and other heart diseases; Disorders related to alcohol.
> 65 years	Thyroid disorders; Osteoarthritis; Osteoporosis; Mood disorders; other urinary tract infections; Urinary incontinence.	Coronary atherosclerosis and other heart diseases; Chronic obstructive pulmonary disease and bronchiectasis; Screening codes, history of mental health and abuse of psychotropic substances.



Mortality

As for **mortality**, according to INE Statistics, women die more frequently than men in situations of **senile and presenile mental disorder, Alzheimer and from hypertensive diseases**, while for **men**, the main differential causes of death are **tumours (bladder, respiratory system, liver), chronic diseases of the lower respiratory tract, self-inflicted injuries and cirrhosis**.

However, **women die in Spain from cardiovascular diseases (CVD) in a greater proportion than men**. The reasons will be analysed later. In 2016,

64,471 women (32% of all deaths) and 55,307 men (26%) died from this cause. On the other hand, **cerebrovascular diseases²⁴ were the main cause of death in women in 2016 (15,566 deaths, 8%), while in men were malignant tumours of the trachea, bronchi and lung (17,624 deaths, 8%).**

²⁴ Thrombosis, embolism, cerebral haemorrhage and aneurysms, mainly.

Habits and lifestyle

So far, the prevalence of diseases have been analysed according to gender, age and type of care. Now, the prevalence of diseases will be addressed from the perspective of habits and lifestyle.

First, the increase in the prevalence of obesity in the last 30 years, a period in which “it has multiplied by 2.4”, according to the ENS, reflects that it is more frequent in men than in women. The same happens for overweight, with up to 14 points of difference and also

more common in men.

This same study states that “in Spain, 69% of women and 58% of men consume fresh fruit daily and 46% of women and 35% of men, salads or vegetables”; and it shows that the proportion of time that people remain seated in their activity is similar (38%) although when it comes to distributing their free time, men’s physical activity is greater.

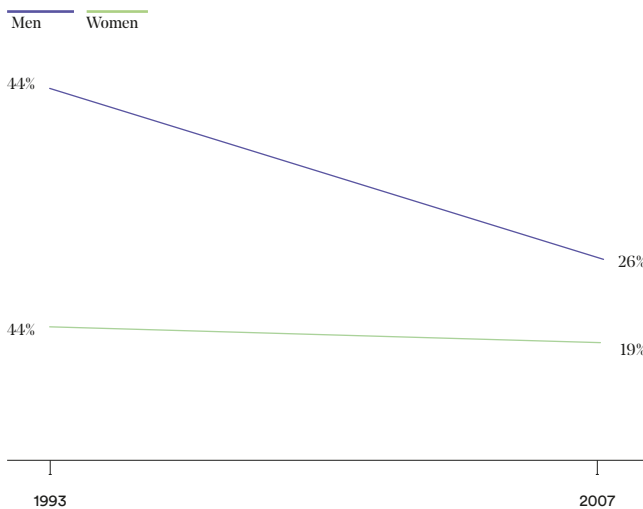
Likewise, 1 in every 2 adult men declares drinking alcohol compared to 25%

of women. There is also a higher proportion of male smokers, although there is a tendency to equalise (Figure 14) after registering a difference of only 7.

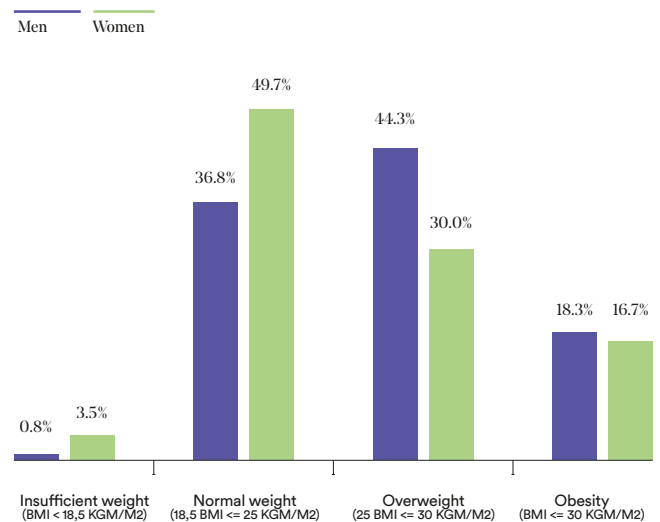
Figure 14. Habits (% population)

Source: Afi from ENS

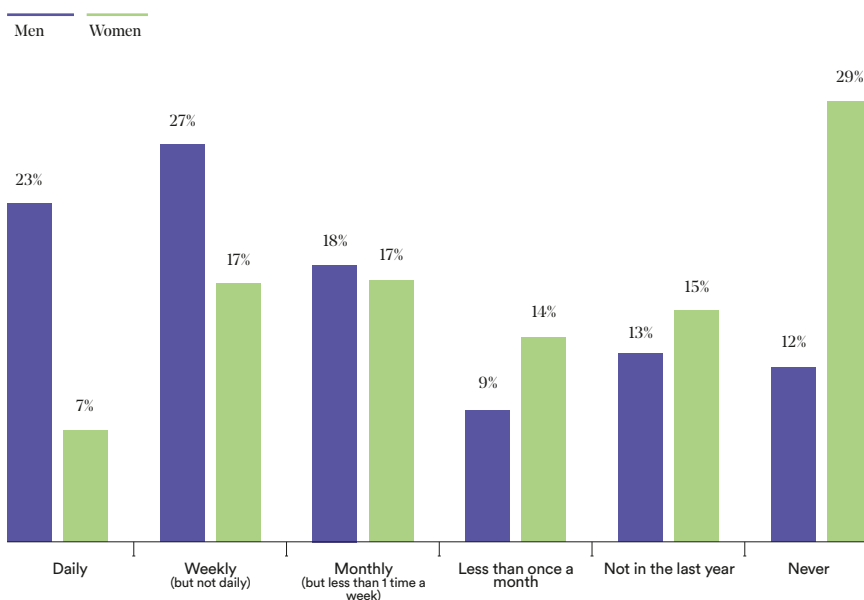
Smokers



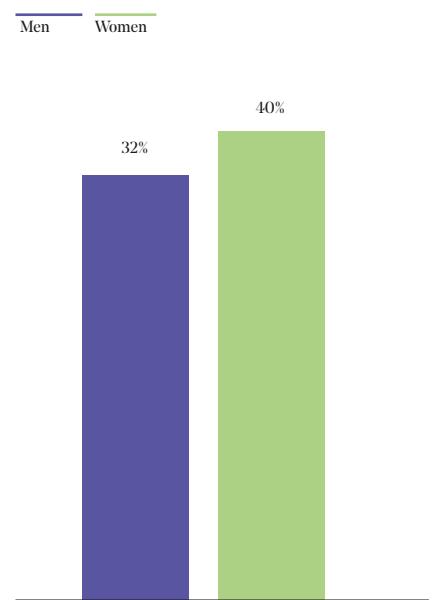
Body Mass Index



Consumption of alcohol



Sedentary leisure time



It is worth considering what the consequences are of these lifestyle on health.

The analysis reveals the incidence of **illnesses associated with lifestyle and risk behaviours** developed during life, although it is more evident in the case of men who, with the aforementioned higher levels of **smoking**, show greater prevalence of illnesses related to the respiratory system, including cancer.

If the smoking trend among women continues, it is possible that in the near future there will be more female smokers than male smokers among the adult population and, along with it, a greater presence of respiratory system cancers among the female population. It must be underlined that **smoking** causes other additional health problems in women, such as the early menopause, osteoporosis and interferences in fertility²⁵.

As for **sedentary lifestyle and obesi-**

ty, its effects on health are known and can be seen in many of the prevalent illnesses in adult and older women, associated with the **locomotor system**. It is important to note that women enjoy one hour less leisure than men, as it will be analysed in the monographic report on the related gender gap.

Finally, regarding the incidence of **risk practises that can lead to accidents (Figure 15)**, it is observed that those suffered at home ("home accidents") have a higher prevalence among women, twice compared to men (4% of women report having suffered one versus 2% of men). This figure reflects the consequences of the inexistence of shared responsibilities in the family sphere, with the woman still being responsible for most of the housework.

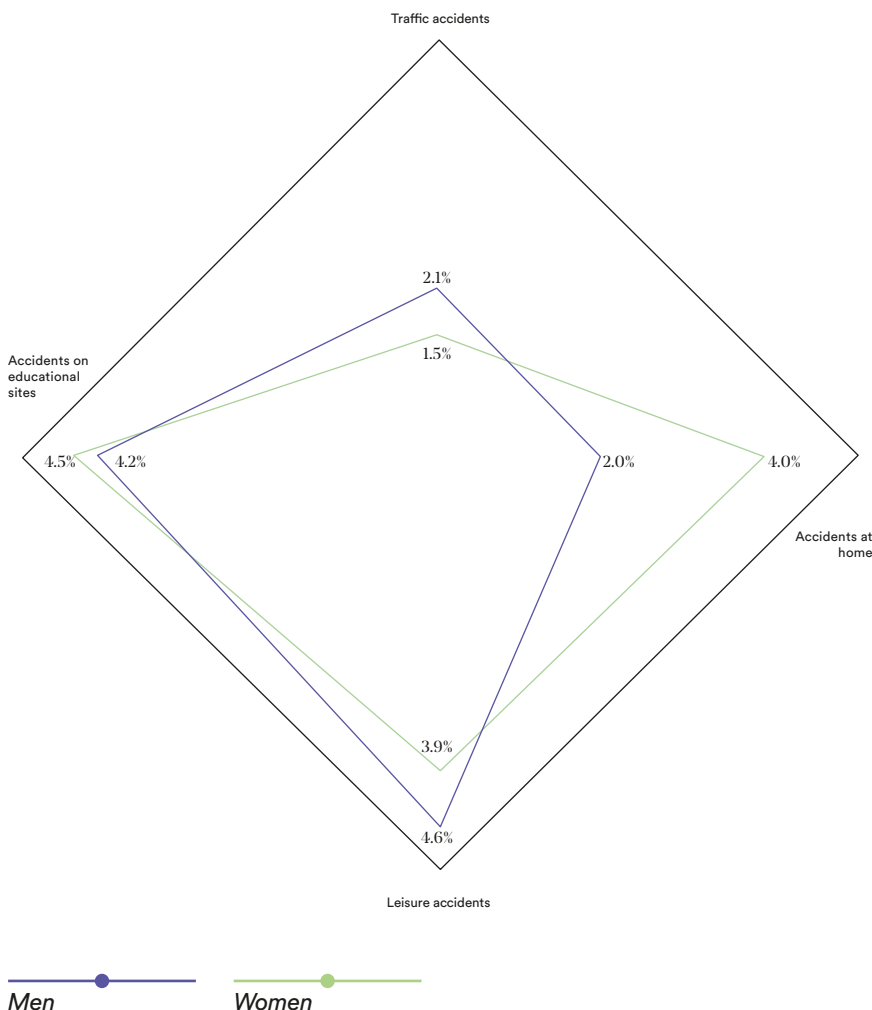
In fact, the Time Use Survey elaborated by the INE in 2009-2019, revealed that the average daily time spent in family care and housework amounted

to 4 hours and 29 minutes in the case of women compared to 2 hours and 32 minutes in the case of men. This aspect will be analysed in the work-life balance gap.

On the contrary, accidents suffered in leisure time and those related to mobility (that happen outside the home) have a higher prevalence among men than among women -the possible causes of the latter will be analysed in the corresponding mobility gap-, although the difference is not as relevant as in those that happen "at home".

Figure 15. Accidents (% population)

Source: Afi from the Spanish National Health Survey (ENS)



25 Elisardo Becoña and Fernando L. Vázquez (2000) "Women and tobacco: characteristics linked to gender", *Rrv Esp Salud Pública* 2000; 74: 13-23 available at <http://www.redalyc.org/articulo.oa?id=17000103>

Social gender stereotypes and consequences in health

In order to analyse the prevalence of diseases according to gender and the existing gender gap, it is necessary to analyse the consequences of social gender social stereotypes in health.

The Special Eurobarometer on Gender Inequality (No. 465, June 2017) shows that two out of every three Spaniards consider that there is a problem about how women are portrayed

in media and advertising - one of the countries, after Sweden and France, most concerned about this fact - and 51% consider that this problem should be addressed.

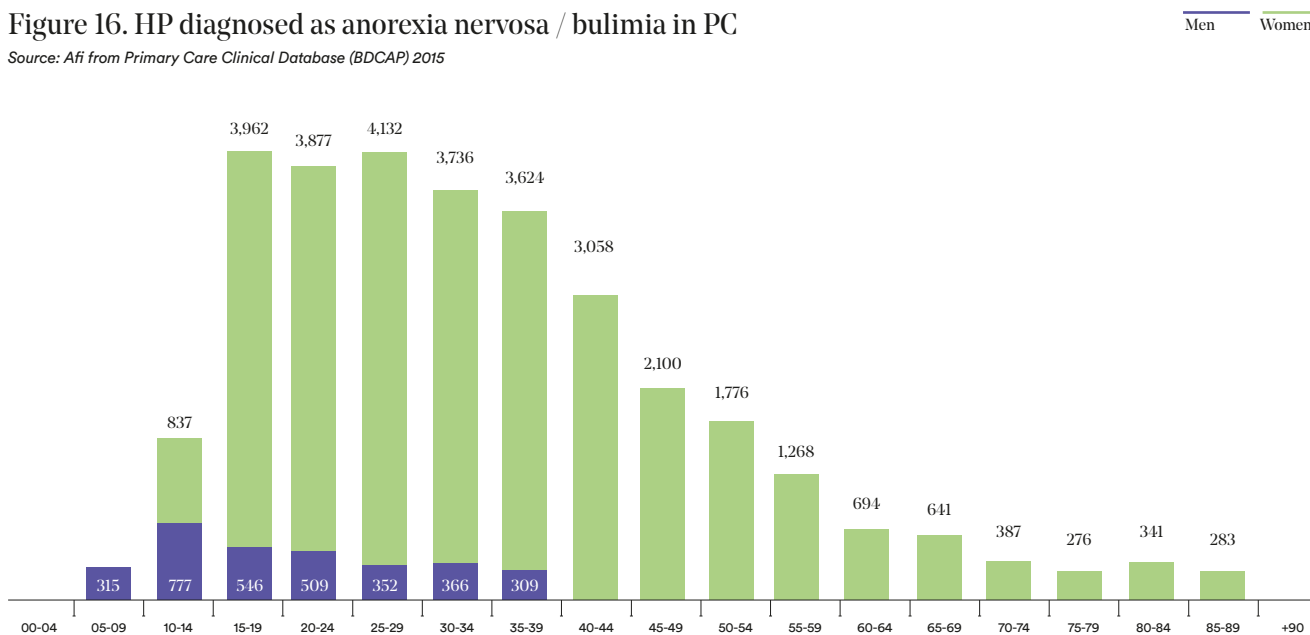
Among the effects on health related to this problem are eating disorders (ED), such as anorexia and bulimia. These diseases affect women more (ratio 7: 1), although not exclusively: of the total number of people diagnosed in PC in 2015, close to 36,000 (Figure 16), 87.6% were women, compared to

12.4% of men.

Most cases are concentrated in ages between 15 and 44 years, although women suffer from them in all age ranges since menarche.

Figure 16. HP diagnosed as anorexia nervosa / bulimia in PC

Source: Afi from Primary Care Clinical Database (BDCAP) 2015



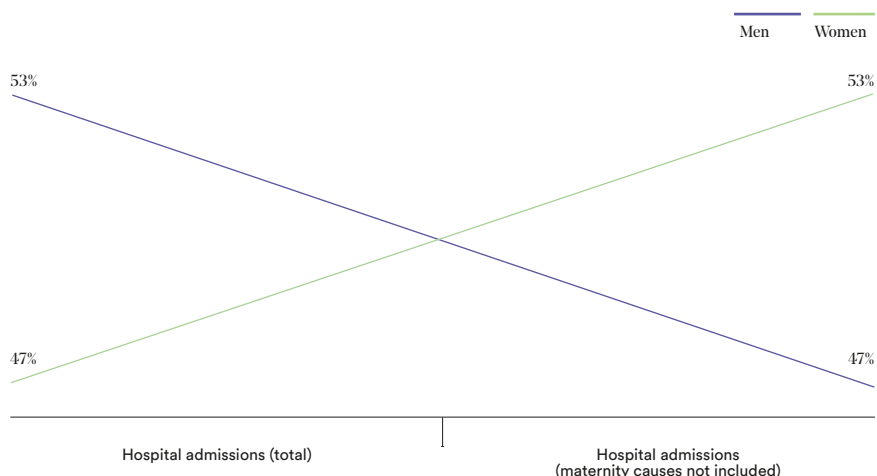
Access to the health system

To conclude this first descriptive chapter of the differences between women and men in the prevalence of diseases and lifestyle in today's society, the differences by gender when accessing the services related to the Spanish National Health System (SNS) will be analysed.

As a starting point, it is necessary to note that maternity determines the relationship of women with health services as well as their state of health throughout their lives²⁶. In fact, **one in five (19%) cases²⁷ of hospital admissions registered by women are related to maternity** (complications of pregnancy, childbirth and puerperium) and up to three out of five (60%) if we focus on the segment of women between the ages of 25 and 44²⁸.

Figure 17. Hospital admissions with and without causes associated with maternity

Source: Afi from the Hospital Morbidity Survey (INE, 2016). Total hospital admissions 2016 (INE): 4,844,832 Note: "causes associated with maternity" refer to the group 1,500 Complications of pregnancy, delivery and puerperium (O00-O9A) of the reference statistics.



²⁶ Firstly, an analysis of health problems (HP) / diagnoses is made for all parts with the aim of obtaining general conclusions about the reasons for attending the National Health System. Then, those related to the genital tract, including breasts, are eliminated from the sample, as these are strictly biological diagnoses. In so doing, differential HP / diagnoses are obtained in men and women, with an incidence higher than twice for the opposite gender and with a frequency greater than 1% over the total of diagnoses.

²⁷ 475,507 registered cases

²⁸ Does not include cases of women under 25 years of age. If so, the percentage would rise to 67% considering the range of 15-44 years.

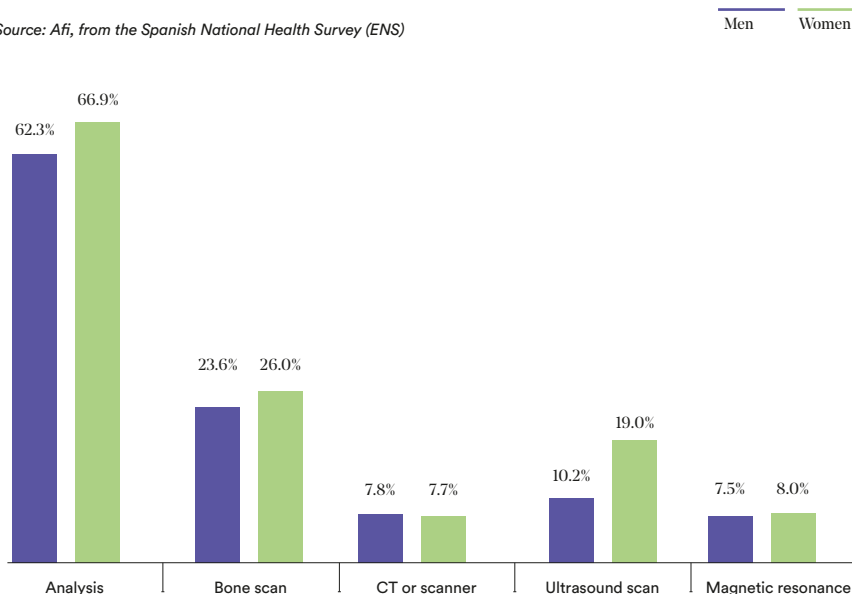
According to the Spanish National Survey (ENS), women are the most frequent users of health services in Spain: 91.4% of women have attended a medical consultation in the last year compared to 82.1% of men.

The number of hospital stays and average time of stay (days) amounted to 17.2 million for men (7.9 days) and 16.6 million for women (6.9 days), with a similar incidence of urgent cases (64.6% of men's stays, 63.6% of women's stays).

In general terms, the differential application of preventive, diagnostic and therapeutic procedures between men and women (Figure 18), measured by the number of tests undertaken in the last 12 months, does not show inequalities.

Figure 18. Application of preventive, diagnostic and therapeutic procedures. Tests undertaken in the last 12 months (% population)

Source: Afi, from the Spanish National Health Survey (ENS)

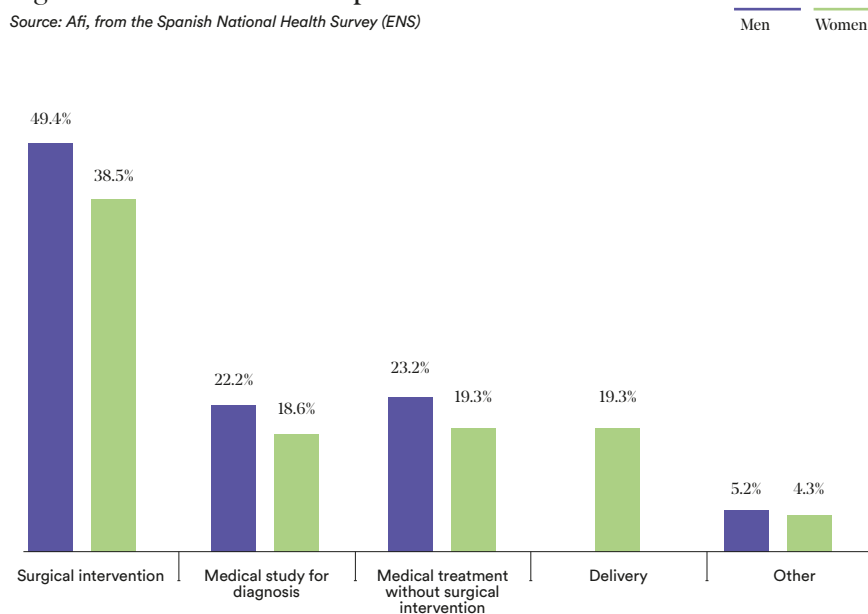


Aside from the cases related to deliveries, there are no significant gaps between the causes of hospitalisation (Figure 19), although for about 50% of the cases in men the cause of hospitalisation is surgical intervention, more than ten points higher than women. The rest of causes are also more frequent for men than for women, except in the case of childbirth.



Figure 19. Main causes of hospitalisation

Source: Afi, from the Spanish National Health Survey (ENS)



Surgical intervention is the cause of hospitalisation for 50% of the cases in men, more than ten points higher than women.

En consecuencia...



In Primary Care (PC)

Men and women go to Primary Care due to similar health problems, although men go more frequently because of general problems and problems related to respiratory and digestive systems, skin and nails, and women because of problems related to genital and urinary tract, nervous system and family planning, pregnancy, delivery and puerperium. If we eliminate genital tract and breasts, men are more likely to have problems related to the

cardiovascular system (acute myocardial infarction, cardiac ischemia without angina), respiratory system, endocrine system, metabolism and nutrition, digestive system and psychological problems and women are more likely to have problems related to the locomotor system, endocrine system, metabolism and nutrition, nervous system, blood, urinary tract, circulatory cardiovascular system (varicose veins), skin and psychological problems.



In Specialised Ambulatory Care (SAC)

The distribution of diagnoses by clinical service is similar between men and women. Men are more likely to go to urology and general and digestive surgery; women are more likely to go to obstetrics and gynaecology, traumatology and orthopaedic surgery, and pain and rheumatology unit groups. If we eliminate the diagnoses related to the genital tract and breast,

men have a higher frequency of diagnoses related to bladder cancer, bronchial or lung cancer, coronary atherosclerosis and other heart diseases and abdominal hernia. Women have a higher frequency of diagnoses related to problems of acquired foot deformities, miscellaneous mental disorders and other disorders of the nervous system.



In Hospital Admissions (HA)

Men are more likely to have diseases to do with the cardiovascular, circulatory and respiratory systems. Women are more likely to have diagnoses related to pregnancy, childbirth and puerperium. The greatest difference in general diagnoses, in the case of men are the diseases of the respiratory and genitourinary systems and in the case of women the diseases of the osteo-myoarticular system and connective tissue, diseases of the blood

and the haematopoietic organs. If we eliminate the diagnoses related to the genital tract and breast cancer, men have higher frequency of diagnoses related to coronary atherosclerosis and other heart diseases, history of mental health and abuse of psychotropic substances, COPD and alcohol-related disorders and women are more likely to have thyroid disorders, mood disorders and osteoarthritis.



Mortality

In relation to mortality, women die more frequently in situations of senile and presenile mental disorder, Alzheimer's and due to causes related to hypertensive diseases, and in a higher proportion than men due to cardiovascular diseases, being cerebrovascular diseases the main cause of death in

women. For men, the main differential causes of death are tumours (bladder, respiratory system, liver), chronic diseases of the lower respiratory tract, self-inflicted injuries and cirrhosis.

Habits and lifestyle

With regards to habits and lifestyle, there is a higher prevalence of **tobacco and alcohol** consumption in men, although this is increasing in women. Greater **obesity and overweightness** is also observed in men, **less physical activity** in women and higher rate of **domestic accidents** in women compared to more occupational accidents in men.

Social gender stereotypes

In relation to social gender stereotypes, one health determinants associated to them are eating disorders (ED), which include anorexia and bulimia. These diseases affect women more (ratio 7:1), 87.6% of the total number of cases diagnosed in PC in 2015 corresponds to women.

Health services

There are no differences between men and women in the access and use of health services, except for a greater frequency of Primary Care in women, and of Hospital Care in men.



2.2

The reduction of the fertility rate has effects on the demographic and economic health of the country

Next, we will address the main effects that maternity has on the demographic and economic health of the country. As noted above, maternity determines the relationship of women with health services as well as their state of health throughout their lives.

Although fertility is biologically associated with being a woman, the practise of maternity is conditioned by the economic and social context, and the effects of that practise impact in the demographic and economic health of the country. Next reports will analyse in detail the impact of this aspect on the professional career of women and on their work-life balance.

We will begin by noting that the birth rate is determined by multiple factors. From personal and family freedom to the circumstances or conditions in which this practise is carried out (age, occupation, income, social benefits, etc.) or the effects on the family's economic welfare (distribution of time for work, care, leisure and other activities, etc.)

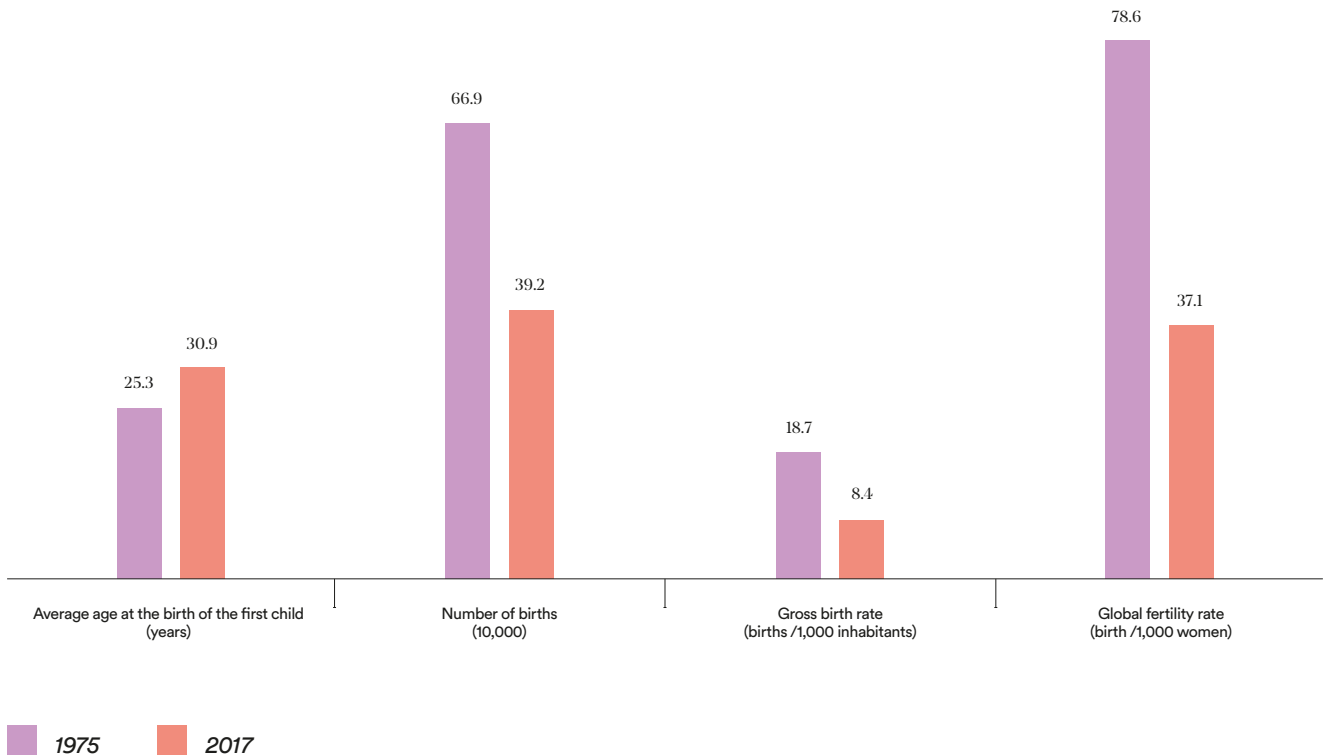
Taking this background into account, we observe (Figure 20) that the **gross birth rate has fallen 2.5 times in**

Spain with respect to that registered in 1975. The total fertility rate has fallen more than twice, with a **number of births in 2017 that is 58% of those registered in 1975** and with an **increase in the average age at the birth of the first child of six years, up to 31 years.**



Figure 20. Fertility indicators in Spain. 1975 and 2017

Source: Afi, based on Basic Demographic Indicators (INE)





This situation shows important opportunity costs. The most immediate, from a demographic point of view, since it affects the vegetative growth and the structure of the population pyramid.

The question arises as to whether the growth of the birth rate depends on the conditions in which maternity is practised and even what would have been the size of the Spanish population in case of conditions that have favoured a greater birth of children over the last decades.

In order to answer these questions we should go back to 1985, immediately prior to the entry of Spain into the then called European Economic Community (EEC) and compare the average evolution of birth rate of the rest of the surrounding countries with that of Spain.

The selected countries are Germany, Austria, Belgium, France, Greece, Ireland, Italy, the Netherlands, Portugal, the United Kingdom and Sweden. It is remarkable that the birth rate amongst these countries has behaved differently (Figure 21), although in all cases (including Spain and except Sweden) this

has decreased in the analysed period.

The country with the best results is Sweden, with an increase of 4.4% (Figure 22), while in the rest of the countries it decreases. The average of the selected countries (without Spain) is a decrease of 18.7%. Spain is below the average (-29.3%), falling since the crisis of 2007-08.

If Spain had maintained a behaviour similar to the average of surrounding countries, 1.2 million more people would have been born since 1985 according to the report.

Figure 21. Evolution of the birth rate in European countries (1984-2016)

Source: Afi, from the World Bank

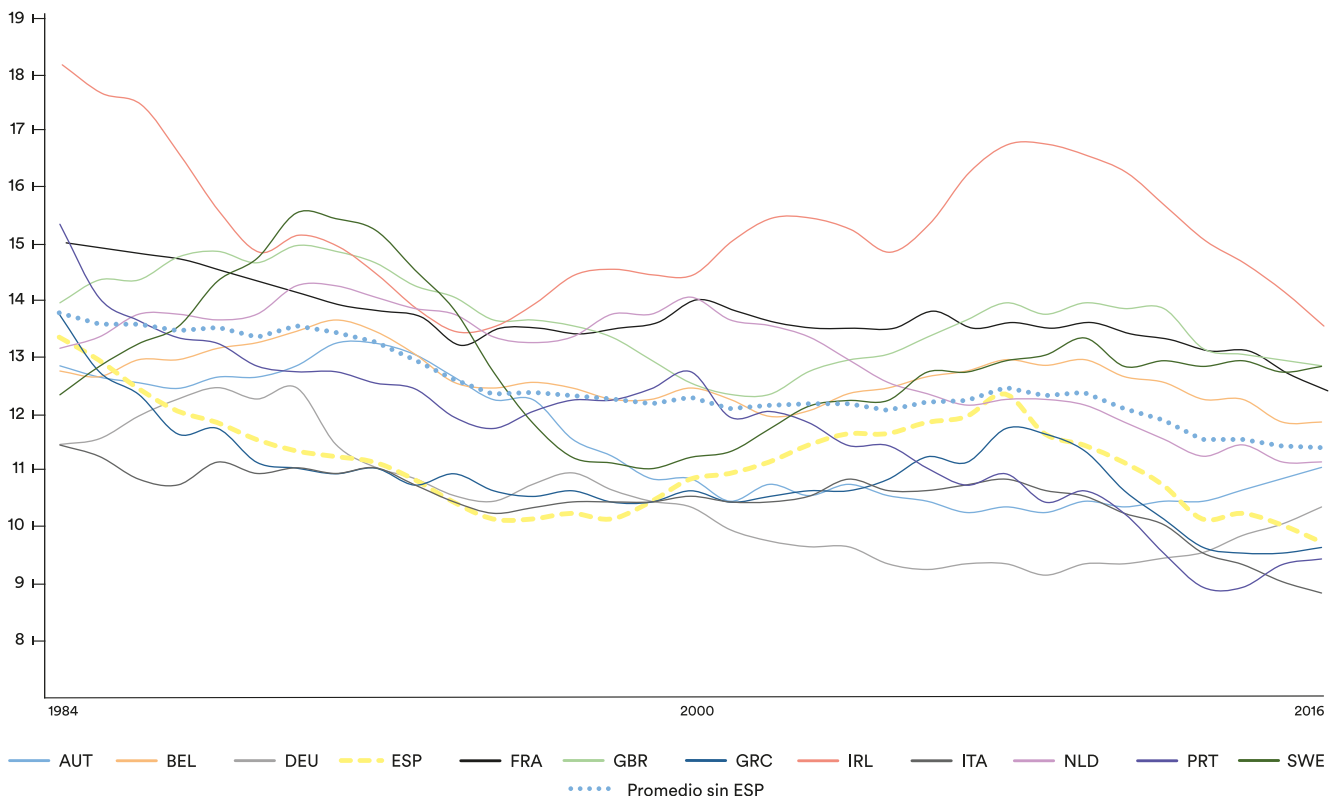


Figure 22. Rate of variation of the birth rate in European countries (1984-2016)

Source: Afi, from the World Bank

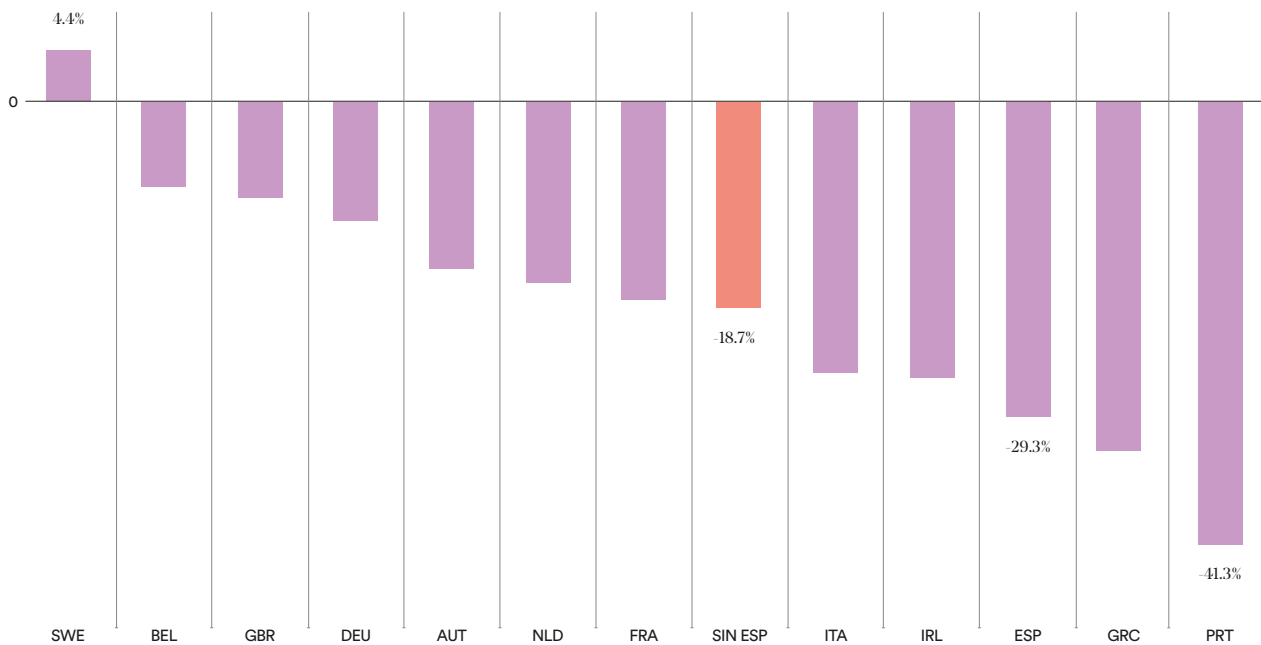
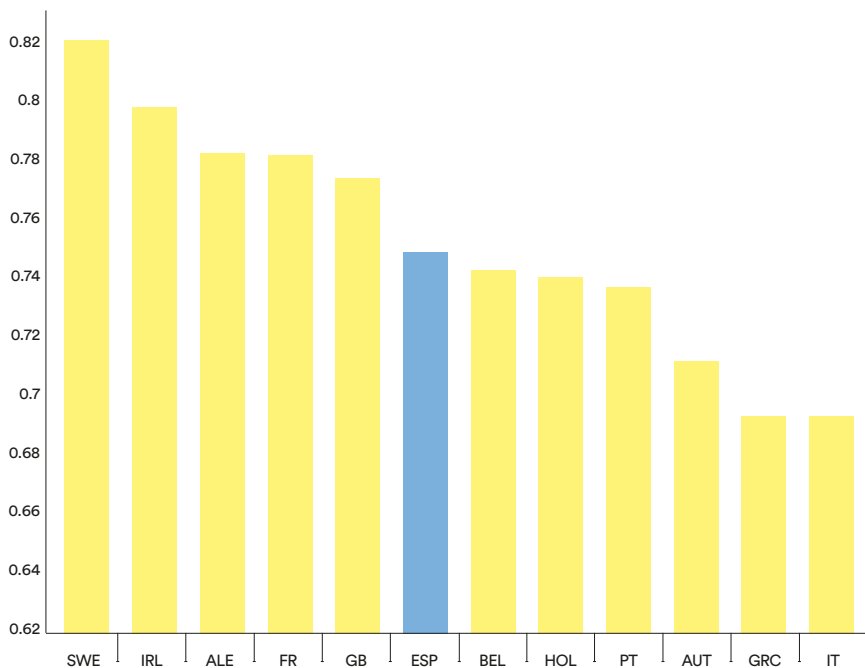


Figure 23. Global Gender Gap Index of selected countries

Source: Afi, from Global Gender Gap Index Report (2017)



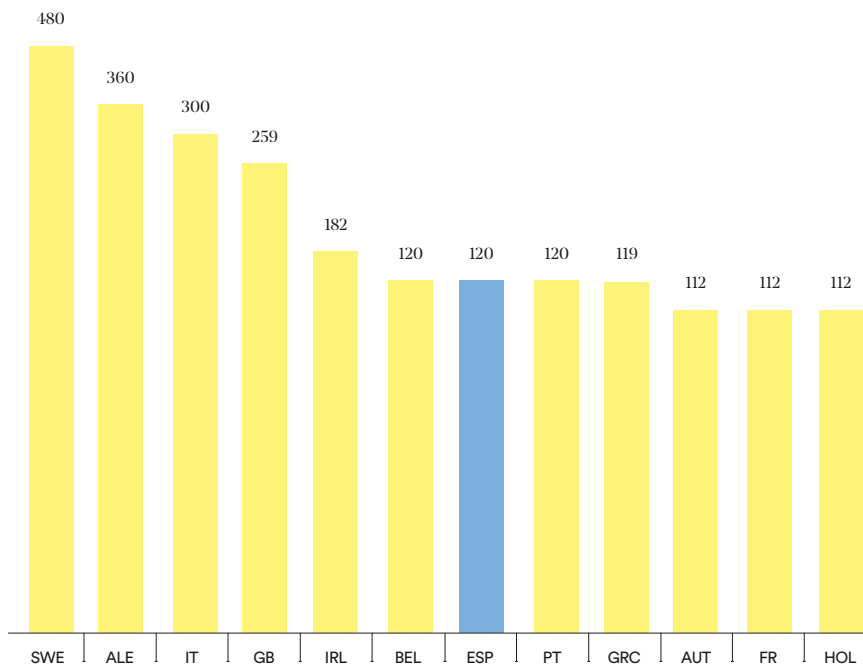
Those countries that show a better birth rate are those that obtain higher scores in the Global Gender Gap Index prepared by the World Economic Forum-WEB (Sweden, Germany, United Kingdom), with the exception of Ireland (Figure 23). Those who have further decreased their birth rates are also those who have lower scores (Greece and Italy).

Focusing only on those related to the conditions in which maternity is practised, those countries with more favourable conditions have a better score in the index and a better evolution of the birth rate.

If we take parental leave as a reference for these more favourable conditions, it can be seen that countries in which this is longer, such as Sweden, Germany and the United Kingdom, show a better evolution of the birth rate (Figure 24). However, those countries with longer duration of maternity / paternity leave for women, but where men cannot take a parental leave or have just one day (Ireland, Italy), have a worse index and, in the case of Italy, a bad result in the evolution of the birth.

Figure 24. Duration of maternity / paternity leave (days)

Source: Afi, based on the Global Gender Gap Index Report (2017, WEF)



The population growth is determined by the number of births and deaths and by the migratory balance (immigrations minus emigrations) that take place in a year.

Keeping the data of the migratory balance and of the deaths, we calculate the number of annual births for Spain by taking the average variation of the birth rate of the surrounding countries.

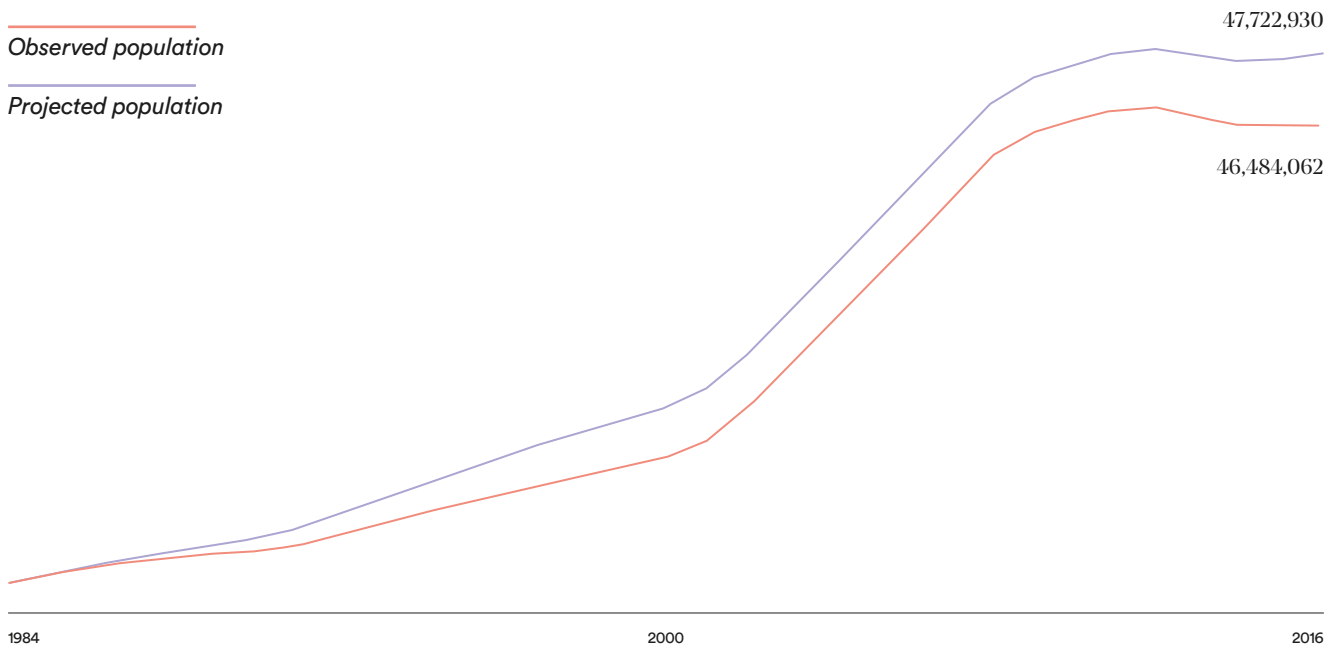
Table 3. Projection of population growth in Spain

Source: Afi, based on the Spanish National Institute of Statistics (INE) and the World Bank.

Edad	1984	1985	2015	2016
People living in Spain	38,330,364	38,469,512	46,444,832	46,484,062
People living in Europe on average	28,266,393	28,307,746	31,516,031	31,664,522
Birth rate in Spain (for every 1,000 inhabitants)	12.3	11.9	9.0	8.7
Birth rate in EU on average (for every 1,000 inhabitants)	12.7	12.5	10.4	10.3
Variation Rate Birth Rate Average EU	-	-0.02	-0.01	0.00
Number of births in Spain	473,281	456,298	420,290	410,583
Number of deaths in Spain	299,409	312,532	422,568	410,611
Migratory balance (INM-EMI)		-4,618	-33,772	39,258
Number of births on average in EU	359,754	354,619	327,194	327,584
Projected birth rate in Spain with average EU Variation Rate	12.3	11.9	9.0	8.7
Births in Spain in case of Birth Rate with average EU Variation Rate	12.3	12.11	10.03	10.00
Average UE Variation Rate	473,281	465,739	465,994	464,754
Spanish population in case of Birth Rate with average EU Variation Rate	38,330,364	38,478,953	47,629,529	47,722,930

Figure 25. Size of the Spanish population: observed Vs estimated

Source: Afi, based on Spanish National Institute of Statistics (INE) and the World Bank



The result of this calculation is that in 2016 there would have been 47.7 million inhabitants in Spain (Figure 25), **1.2 million more than today**, a figure 2.6% higher than that observed in 2016.

Of those 1.2 million, almost **900,000 people would be part of the Working Age-Population (WAP, 16-64 years)** decreasing the dependency rate (calculated as the number of people over 65 years old among the WAP) by 0.8%.

According to Cruz and Ahmed (2016)²⁹, the increase of one percentage point of the WAP ratio over the total population generates a direct increase of 1.5 percentage points of GDP per capita³⁰. This effect is found on average for 120 countries, among which are those referred to in this paper.

Applying this result to the estimates of population growth made for Spain, **the WAP would have increased from 62.46% in 1984 to 65.31% in 2016** (0.0013 points higher than the observed), which would have increased the GDP per capita in 2016 by 0.2% (from € 24,040 to € 24,087).

In terms of total GDP, **the opportunity cost** (growth we have lost due to a lower birth rate, as estimated), **would be 31,003 million euros (2.8% of GDP observed in 2016), equivalent to almost 50% of the annual public expenditure on health in Spain.**

These results contain an important political implication, since the demographic transition facing Spain, with a population living increasingly longer live but with lower birth rates and a decreasing WAP, can entail significant opportunity costs in terms of economic growth.

The changes in the age structure of the population towards a higher WAP lead to higher production and economic resources and facilitate the generation of savings and investment in physical and human capital that positively contributes to labour productivity.

These improvements would contribute to the consolidation of public finances, allowing more resources to be allocated to households with lower incomes

and generating greater welfare for society as a whole³¹.

Thus, of the 31,003 million euros of GDP in 2016 that we would have obtained with a higher WAP, 9.3% would have been part of the collection for Social Security contributions, which means 2,872 million euros more in collections³².

“ In terms of total GDP, the opportunity cost of a lower birth rate would be 31,003 million euros. ”

²⁹ Cruz, M., & Ahmed, S. A. (2016). On the impact of demographic change on growth, savings, and poverty. The World Bank.

³⁰ For more information, consult the methodological annex Cruz, M., & Ahmed, S. A. (2016). On the impact of demographic change on growth, savings, and poverty. The World Bank.

³¹ This calculation is made considering that all the people who increased the working-age population were effectively working, and considering that social contributions on the GDP in 2016 were 9.3% (source: Spanish Ministry of Labour, Migrations and Social Security).

Table 4. Opportunity cost

Source: Afi, from Spanish National Institute of Statistics (INE) and the World Bank.

	1984	2016 observed	2016 estimated
Birth rate in Spain	12.3	8.7	10.0
Number of births in Spain	473,281	410,583	464,754
Population in Spain	38,330,364	46,484,062	47,722,930
WAP	23,894,249	30,269,001	31,167,628
65 years and older	4,466,289	8,694,164	8,694,164
GDP (million €)	-	1,118,522	1,149,525
Δ GDP (million €)	-	-	31,003
% GDP 2016	-	-	2.8%
GDP per capita (€)	-	24,040	24,087
Dependency rate	18.7%	28.7%	27.9%

To conclude this chapter, we will point out that the available data shows that Spain faces an **important demographic challenge**.

The population projections of the Spanish National Institute of Statistics (INE) (2018) show that if the current demographic trends in fertility, mortality and migration are maintained, Spain will increase in 2.4 million inhabitants in the next 15 years and 1.8 million in 2068 compared to 2018 population.

The increase in deaths throughout the period will result in a negative vegetative balance. The migratory balance will be positive, compensating the previous effect and contributing to increase the population.

The number of births will continue until 2023 with the downward trend observed since 2009. Between 2018 and 2032 there will be around 5.7 million births, 16.2% less than in the previous 15 years. A small rebound in the number of births is expected between 2033 and 2048 and will subsequently decrease again in the following 15 years. The increase in the number of births between 2033 and 2048 is projected, assuming that fecundity of women evolves upwards, going from 1.31 children in 2018 to 1.41 in 2033.

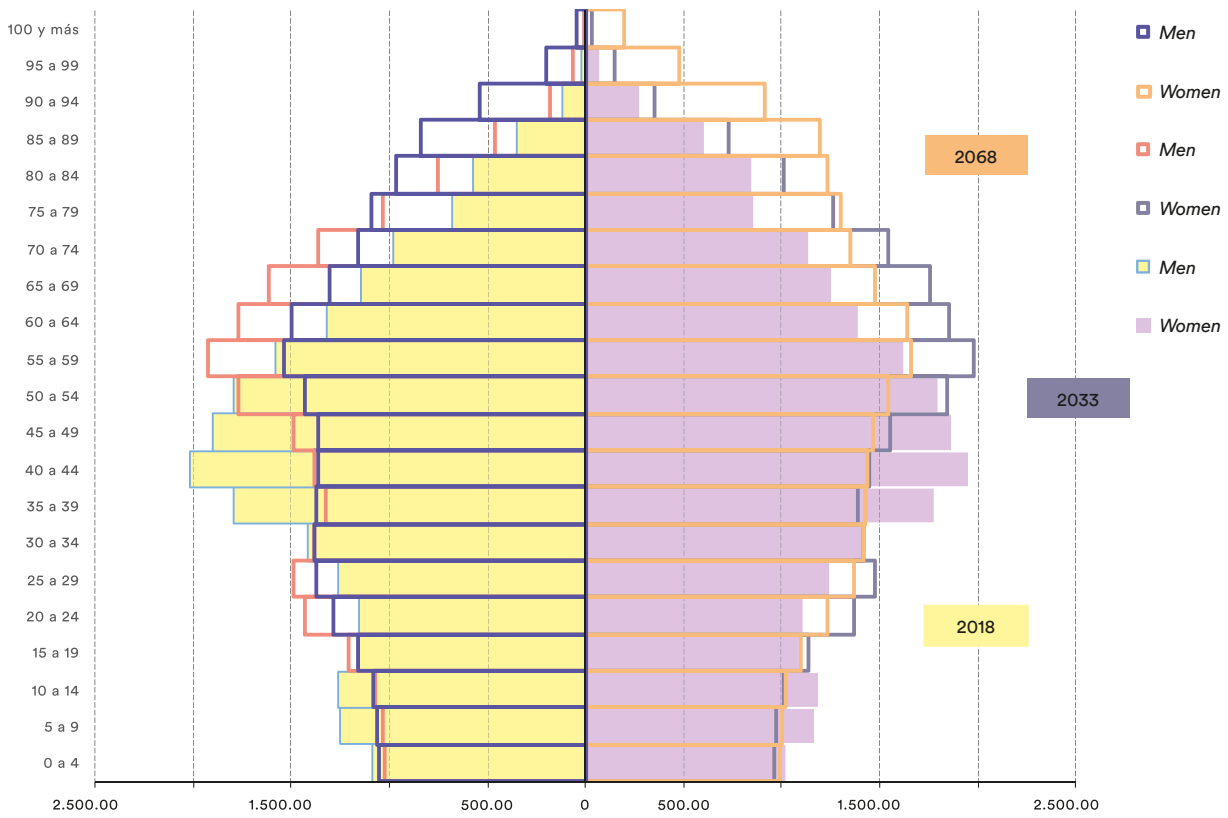
Life expectancy at the age of 65 will continue to increase by 23.0 years in men and 26.9 in women in 2067 (they are expected to live up to 88.0 and 91.9 years, respectively). Despite the increase in life expectancy, the number of deaths will continue to grow due to the aging of the population.

The intensity of the aging process of the population in Spain is reflected in the population pyramid (**Figure 26**). The decline in the birth rate in the next 50 years (until 2068) will decrease the proportion of young people under 16 years of age and the proportion of those over 65 years will increase. As a result, the dependency rate will rise from 28.7% in 2016 to 51.7% in 2068.



Figure 26. Projection of the population pyramids in Spain: 2018, 2033 and 2068

Source: Afi from Population projections (INE 2018)



En consecuencia...



Gross birth rate

The gross birth rate has fallen 2.5 times in Spain since 1975 and the total fertility rate has fallen more than twice. **In 2017, births were 58% of those registered in 1975** and the average age at the birth of the first child has increased six years, to 31 years of age.

Variation in the birth rate

Taking for Spain the variation of the average (simple) birth rate of the surrounding countries it can be concluded that in 2016 there could have been **47.7 million inhabitants in Spain, 1.2 million more** than today.

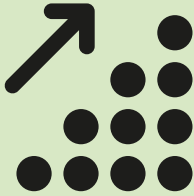


Population

Of those 1.2 million, almost **900,000 people** would be part of the Working Age Population, decreasing the dependency rate by 0.8%.

Total GDP

In terms of total GDP, the growth lost due to a lower birth rate would be **31,003 million euros** (2.8% of GDP observed in 2016), equivalent to almost 50% of the annual public spending on healthcare in Spain.



Social contributions

Of the 31,003 million euros of GDP of 2016 that we would have obtained with a working-age population, 9.3% would have been part of the collection for Social Security social contributions, which means 2,872 million euros more in collections.



2.3

The role of the non-professional caregiver from a gender perspective

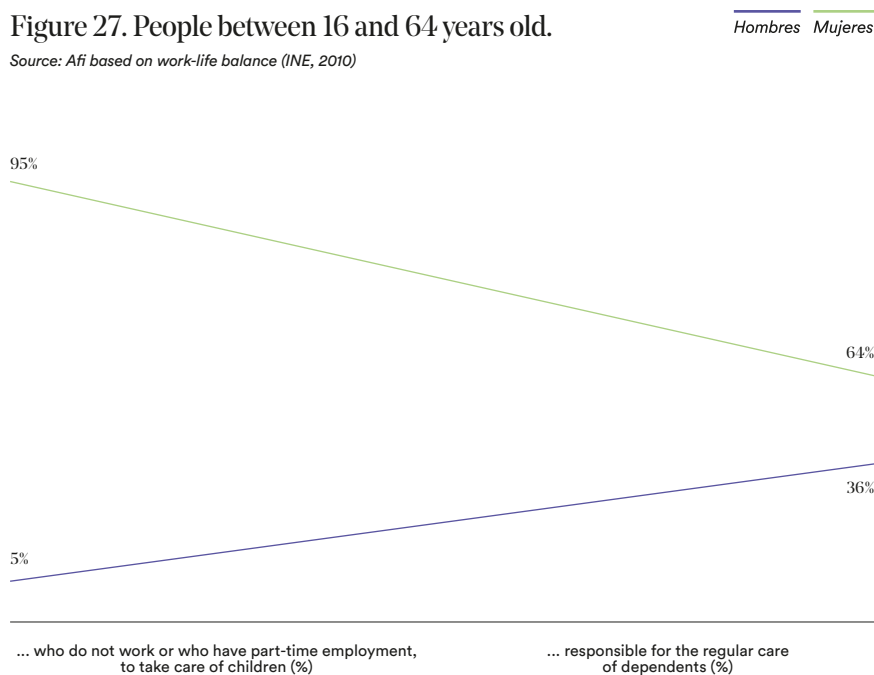
This block of the report will address the consequences that, in terms of opportunity cost, have for the health of women their still majority role of caregivers of children or family members in a situation of dependency, because the consequences in the work-life balance will be addressed in the monographic report of this gap.

Child care

Of the total number of people between the ages of 16 and 64 who give up studying or working for child care, 95% are women (Figure 27). In this same age group, women and men share in a 2:1 ratio the responsibility of attending dependents on a regular basis.

Figure 27. People between 16 and 64 years old.

Source: Afi based on work-life balance (INE, 2010)

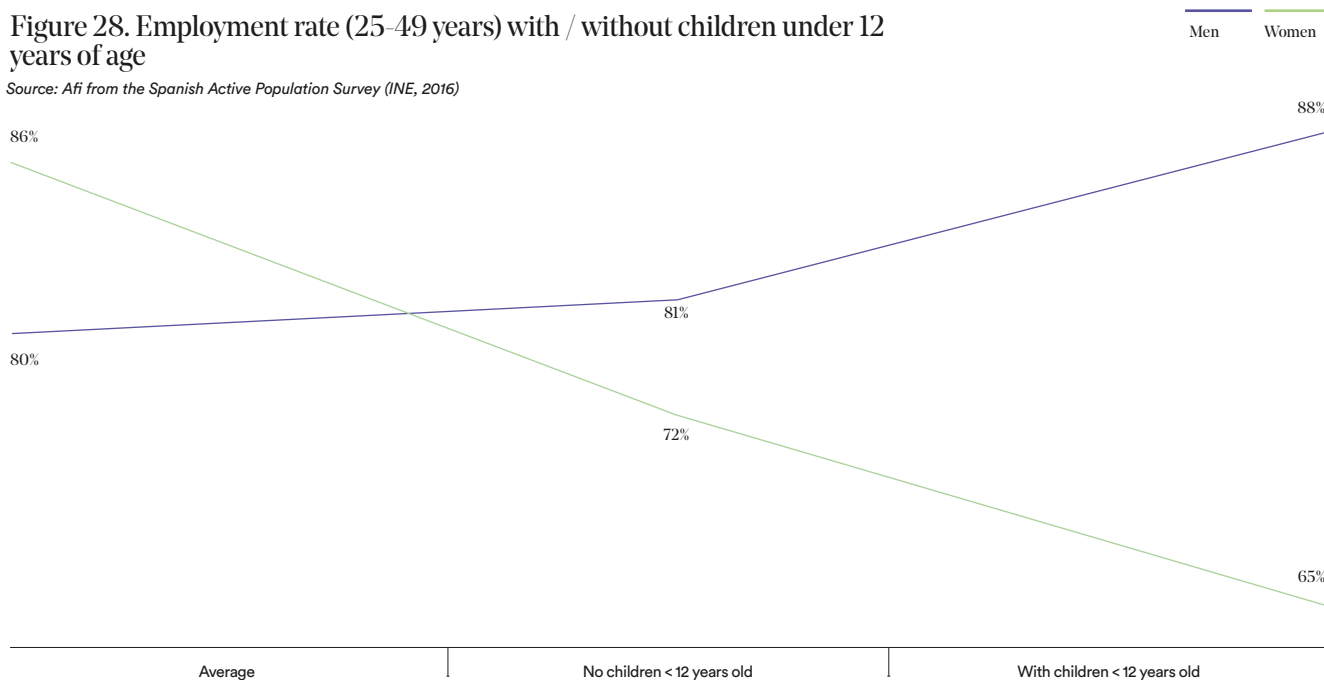


This allocation of tasks has an effect on the employment rate for people between 25 to 49 years depending on whether men and women have children under 12 years of age (age coinciding with the maximum limit recognised by law for the reduction of working hours to care for children). Thus (Figure 28), while having children of that age does not seem to have a negative effect on the employment rate in the case of men, its effect is the opposite in the case of women. Furthermore, the intensity of the effect in both grows with the number of children of this age.

This may be related to the fact that women, especially those who work outside the household, tend to assume the role of primary caregiver, while men tend to assume the role of secondary caregiver³³.

Figure 28. Employment rate (25-49 years) with / without children under 12 years of age

Source: Afi from the Spanish Active Population Survey (INE, 2016)



³³ Observatory for the Elderly. Bulletin on aging. No. 35 (October 2008). Caregivers and carers: the effect of gender on the non-professional care of the elderly, available at <http://www.imserso.es/interpresent3/groups/imserso/documents/binario/boletinopm35.pdf>



In order to make this unequal dedication visible, **Table 5** shows a true panorama of the available statistics of time spent to non-professional care of the elderly or chronically ill.

Caring for the elderly or the sick

More than 4.3 million people declare to care for these people in a non-professional manner. **59% of them are women and spend 62% of the hours declared, 1,800 million hours per year** (out of a total of 2,900 million). This is a non-professional work that, if formalised, would be equivalent to more than

977,000 full-time annual jobs, taking into account that the Spanish Workers' Statute establishes that the maximum legal workday in Spain is 1,826 annual hours. **The economic potential of the time differential that women employ in these care tasks amounts to 7,812 million euros a year, which is 0.7% of GDP and 85% of the monthly payroll of all contributory pensions in the country.**

Table 5. Number of hours spent in non-professional care of the elderly or those with chronic illnesses (Spanish National Health Survey-ENS-)

Source: Afi from the Spanish National Health Survey (ENS) and the Annual Labour Cost Survey (INE, 2016)

	Caregivers	% of total	< 10 H*	% of total	≥10 or < 20*	% of total	>20*	% of total
Total (men and women)	4,383,341	100%	1,573,082	35.9%	834,730	19.0%	1,954,048	44.6%
Total hours spent in a week	55,293,678	100%	7,865,412	14.2%	8,347,300	15.1%	39,080,966	70.7%
Total hours spent in a year	2,875,271,239	-	409,001,411	-	434,059,598	-	2,032,210,230	-
Nº women*	2,585,016	59%	839,365	19.1%	460,339	10.5%	1,276,171	29.1%
Nº hours spent in a week	34,323,633	62%	4,196,823	7.6%	4,603,392	8.3%	25,523,417	46.2%
Nº hours spent in a year	1,784,828,926	-	218,234,821	-	239,376,409	-	1,327,217,696	1,149,525
Nº men*	1,798,325	41%	733,718	16.7%	374,391	8.5%	677,877	15.5%
Nº hours spent in a week	20,970,044	38%	3,668,588	6.6%	3,743,907	6.8%	13,557,549	24.5%
Nº hours spent in a year	1,090,442,312	-	190,766,589	-	194,683,189	-	704,992,534	-
Difference nº hours women and men	694,386,614	24%	-	-	-	-	-	-
Labour cost of care/hour (€) ³⁴	11.25	-	-	-	-	-	-	-
Annual cost of the difference (million €)	7,812	-	-	-	-	-	-	-

* hours per week

³⁴ Estimado a partir de Encuesta anual de coste laboral (INE, 2016). Promedio de los códigos CNAE 87 Asistencia en establecimientos residenciales y 88 Actividades de servicios sociales sin alojamiento. El coste de los cuidados está conformado en un 73% por coste salarial y 27% coste laboral. Número de días trabajados al año= 217.



The time spent in care activities has, in addition to the direct economic implications described associated with unpaid working time, other related to health. In particular, a higher prevalence of diseases that can be disabling such as **depression, anxiety or stress**.

Prevalence of depression

According to the Spanish National Health Survey (ENS), 13.3% of women have suffered depression at some time in their lives (9.7% in the last year), compared to 6.0% of men (4.5%).

It is remarkable the highest prevalence of depression among women unable to work (34.2% of women unable to work report having suffered it in the last year), followed by retired women (17.7%), those who are dedicated to housework (12.8%), those who are unemployed (10.1%) and those who are working outside the household (5.1%).

· In men, it is also those who are unable to work who have the greatest proportion of depression in the last 12 months (29.0%), followed by those who are unemployed (7.1%), retired (6.7%) and those who are working (1.9%).

As for **anxiety**, 11.8% of women report having suffered at some time compa-

red to 5.5% of men, 9.8% of women and 4.8% of men in the last year.

· The prevalence of chronic anxiety in the last year in women is higher in those unable to work (32.2%), retired (13.7%), unemployed (12.1%), those who work in the household (10.6%) and employees (7.1%).

· In men, it is also the unable to work who have the highest prevalence of chronic anxiety (25.9%), followed by the unemployed (8.5%), the retired and those who work in the home (4.9%) and those who are working outside the household (3.1%).

The differences between men and women in instances of depression begin in adolescence, increase in adulthood and are reduced in long-lived periods. There are several studies that mention that these differences are not only due to biological causes but **also to social conditions** such as the inequality of power and social position, as well as the physical and emotional overload of balancing work and family care, as evidenced in this section.

These causes can affect both men and women, but women are more exposed to them, although “depressions are underdiagnosed and even more in men because they do not recognise or

show depression.” (Curto, Grau, Fortuño, Riobóo, & Vidal (2011).

Among the social factors mentioned above, the different role that women assume -or they have socially assigned- in society in general and in the provision of non-professional (and therefore unpaid) care of dependent persons (children, sick, and elderly), in particular. The following pages address this relationship and its economic effects.

Prevalence of depression and anxiety in relation to the care of people in situations of dependency

For this purpose, the database of the Spanish National Health Survey (ENS) is used, which refers only to the care of sick and elderly dependents, without including the care of the children. From these data it appears that 12.9% of women and 9.5% of men have taken care at least once a week of elderly or chronically ill people.

Of these people, **18.4% of women and 9.8% of men** report having had **depression** at some time in their lives, while 13.4% and 7.3%, respectively, declare to have suffered depression in the last 12 months. Regarding **anxiety**, 16.2% of women and 9.0% of men caregivers have suffered it at some time

in their lives (13.6% and 7.3%, respectively, in the 12 last months).

Comparing these figures with the general data, we see that there is a higher prevalence of depression and anxiety among women who care for the elderly or chronically ill.

The study carried out in Spain and in six other countries³⁶ within the framework of the campaign *Embracing Carers* (led by Merck) and supported by the European association Eurocarers together with other international organisations of caregivers, reveals that the 47 % of non-professional caregivers have symptoms and need medical attention for depression, anxiety and stress and 61% consider that their physical health suffers from the work they perform day by day as caregivers of family members or patients.

The reasons include difficulties to sleep, lack of time to go to the doctor or to do healthy exercise, effects in their professional careers and in the level of income due to the reduction of working hours, family stress, etc.

In order to analyse whether the prevalence of depression and anxiety is statistically and significantly different between men and women, and among caregivers, a probabilistic model is estimated with data from the Spanish National Health Survey done by INE, controlling for different socioeconomic factors (methodological detail can be found the annex)³⁷.

The probability of suffering depression in women is 5.5 points higher than in men. The care increases the probability of suffering depression in women by 3.4 additional points. As for anxiety, the probability of women suffering it is 5.8 points higher than in men, and care increases that probability by 2.7 additional points.

This situation has its corresponding opportunity cost. According to Oliva-Moreno, López-Bastida, Montejo-González, Osuna-Guerrero and Duque-González³⁸ (2009) the cost of mental illness for the population in general in Spain is 7,019 million euros (0.6% of the GDP in 2016), of which 39.6% are direct medical costs, 7.3% are informal care costs and 42.7% are labour productivity losses.

Considering the opportunity cost of labour productivity losses, the cost of temporary work leave due to the

prevalence of depression and anxiety is estimated. To calculate the distribution by gender of work leave due to temporary disability due to these diagnoses, the distribution of the cases registered in PC is applied (Table 6).

The probability of suffering depression in women is 5.5 points higher than in men.

³⁶ France, Germany, Italy, United Kingdom, United States and Australia. 3,516 non-professional caregivers interviewed in the period between July 7 and August 8, 2017.

³⁷ In this analysis we include, in addition to the explanatory variables mainly observed (gender, care) other socioeconomic variables (employment situation, age, marital status and educational level) that also affect the likelihood of suffering depression and anxiety. There are other non-observable factors not included in the estimate (number of children, family relationship with the recipient of the care, among others) that could affect the estimated probability and vary the results. Nonetheless, from the analysis carried out, significant results are obtained that are also consistent with those found in the related literature.

³⁸ Oliva-Moreno, J., López-Bastida, J., Montejo-González, A. L., Osuna-Guerrero, R., & Duque-González, B. (2009). The socioeconomic costs of mental illness in Spain. *The European Journal of Health Economics*, 10(4), 361-369.

Table 6. Cases of mental disorders in PC (2014)

Source: Clinical Database Primary Care (BDCAP)

	Men	Women
P01 - Feeling of anxiety / tension / nervousness	239,183	444,228
P03 - Depressive feelings	8,877	22,615
P74 - Anxiety disorders / anxiety state	365,042	627,303
P76 - Depression / depressive disorders	158,294	347,181
Subtotal depression and anxiety in PC	771,396	1,441,327
Distribución	34,9%	65,1%





The temporary inability to work that depression and anxiety generate has an **impact on the GDP of 345 million euros more in the case of women.**

Thus, taking into account the total gross labour cost and the cost per hour in 2016 for an average worker (30,708 and 15,35 euros, respectively), it is calculated the cost of temporary work leaves caused by anxiety and depression. There were 140,708 temporary work leaves (MTOIT, Spanish National Institute of Social Security-INSS-) with an average duration of 66 days³⁹. Considering a full work day of 8 hours, the losses due to depression and anxiety would mean 1,140 million euros (0.1% of GDP) in 2016.

Distinguishing between men and women, and with the hypotheses described, the incidence of depression and anxiety in the GDP by way of temporary disability that is **345 million euros is greater in women than in men, which represents 0,03% of GDP.**

The data show that there is a higher prevalence and probability of suffering depression and anxiety for women.

However, despite this evidence, in order to be able to accurately measure the proportion of the opportunity cost that corresponds to the impact of care on women's health, there should not be unobservable factors that condition the analysis; factors that cannot be isolated due to the level of detail of the information available.

³⁹ See note 37



En consecuencia...

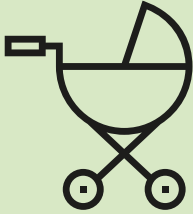
Care of elderly and sick people



In Spain, 4.3 million people declare to care for the elderly and the chronically ill in a non-professional manner. **59% are women** (64% in the case of dependents) and spend 62% of the total hours declared (1,800 million hours per year) to this end. This is a non-professional work that, if formalised, would be equivalent to more than 977,000 full-time annual jobs, taking into account that the Workers' Statute establishes that the maximum legal workday in Spain is 1,826 annual hours.

12.9% of women and 9.5% of men take care of the elderly or chronically ill at least once a week. Of these, 13.4% of women and 7.3% of men report having suffered depression in the last 12 months. As for **anxiety**, the percentages for this same period reach 13.6% and 7.3% respectively.

Children under 12 years old



Having children under 12 years of age does not have a negative effect on the employment rate of men between 25 and 49 years old. In contrast, for women it is the opposite with a gap of 23 percentage points.

Economic potential

The economic potential of this greater time spent in the care of the elderly or sick by women amounts to **7,812 million euros a year, 85% of the monthly payroll of all contributory pensions in Spain.**

Care



The care increases the probability of suffering depression in women by 3.4 additional points. Regarding anxiety, care increases its probability in women by 2.7 additional points.

GDP

The effect of depression and anxiety on GDP through temporary disability is **345 million euros higher in women than in men**, equivalent to 0.03% of GDP.



2.4

Employment and its consequences in health

Another issue analysed in this report is the consequences of employment as a determinant element for health and, therefore, with potential of generating value for the economy.

In this regard, it is observed that, by type of working day, **six out of ten full working days are undertaken by men compared to one in four of the part-time work days.**

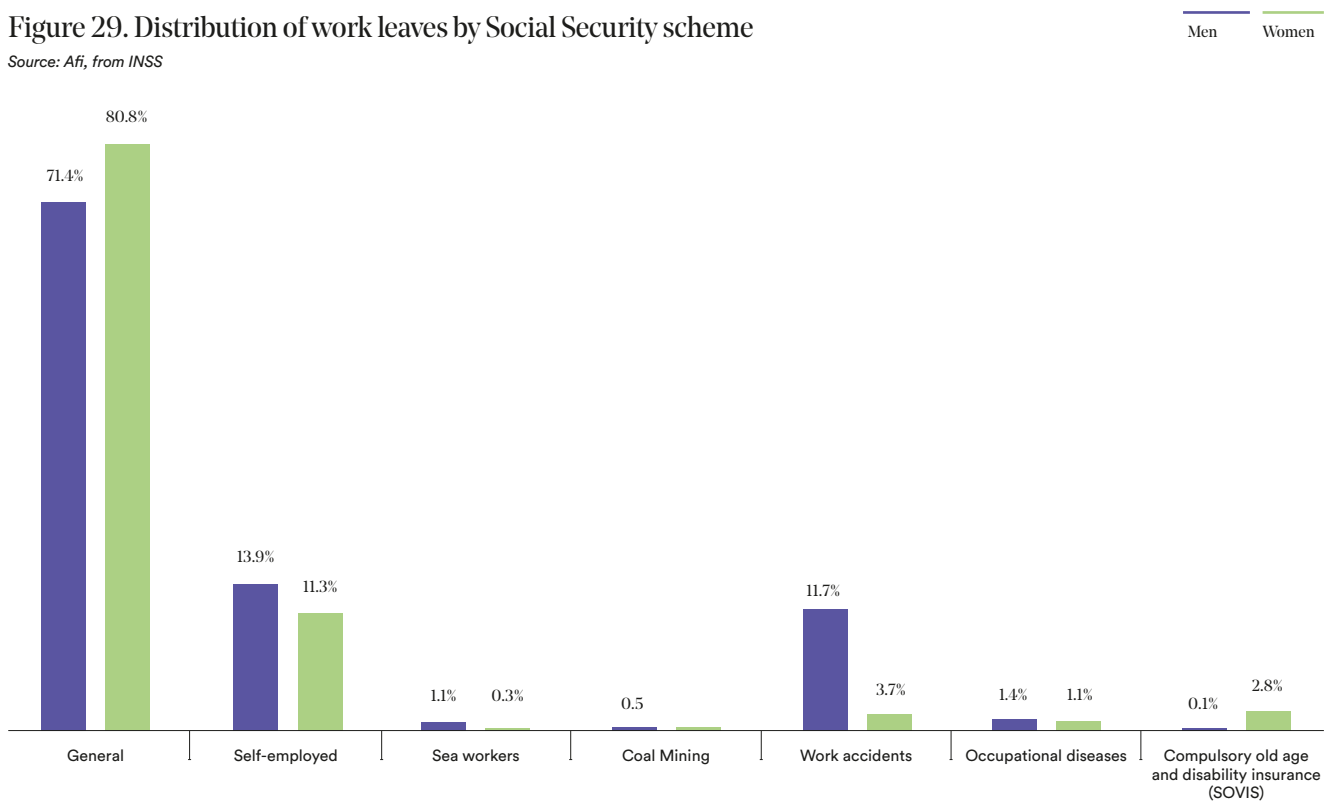
The main areas of activity by number of employed men are manufacturing (17.3%), commerce (14.6%), construction (10.0%), transportation and storage (7.4%) and hospitality (7, 4%). The main areas of employment for women are concentrated in the

commerce sector (17.4%), health activities (14.2%), hospitality (10.2%), education (9.9%) and manufacturing (7.2 %).

By **professional situation**, women are usually salaried employees (87.8%, of which 68.1% correspond to the private sector and 19.6% to the public sector), while self-employed workers are only 12.2% of the total of employees. Four out of every five men (79.9%) are salaried workers (private sector 66.8% and public sector 13.1%) and one in five (20.1%) are self-employed workers.

Figure 29. Distribution of work leaves by Social Security scheme

Source: Afi, from INSS



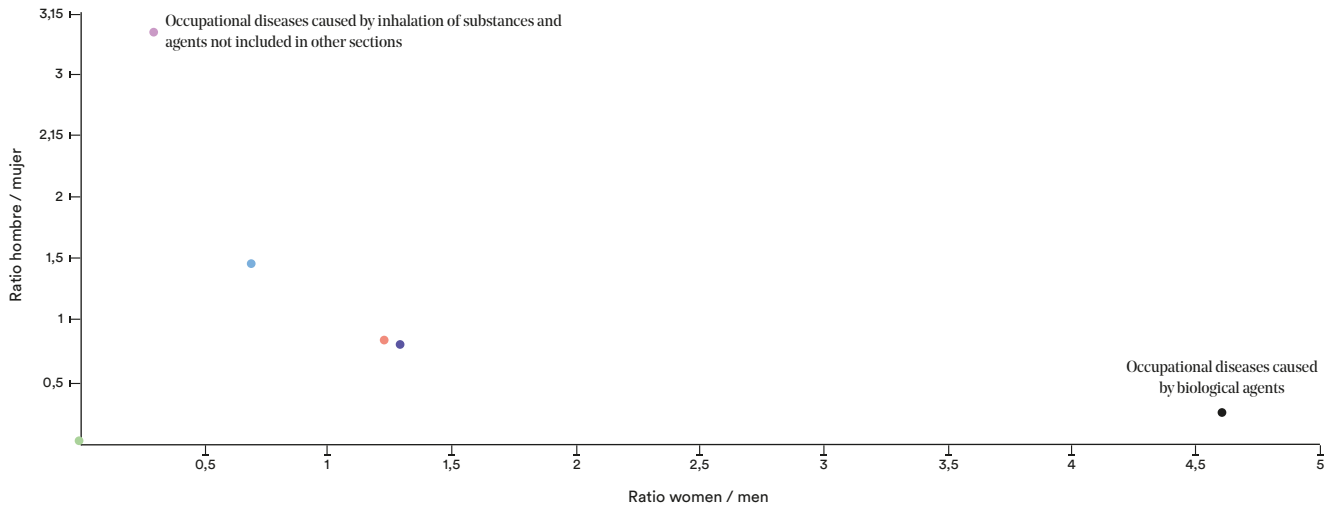
In relation to **occupational diseases (OD)** - those contracted as a result of work and caused by external elements or substances⁴⁰-, **men** are more affected -from the percentage of the reports with leave in the OC group- by **inhalation of substances**, while **women** are more affected by **biological agents (Figure 30)**. The average duration of sick leave for OD is 95.21 days in the case of men and 105.84 days in the case of women (about 11 days more).



⁴⁰ 40 Group 1: Occupational diseases caused by chemical agents; Group 2: Occupational diseases caused by physical agents; Group 3: Occupational diseases caused by biological agents; Group 4: Occupational diseases caused by inhalation of substances and agents not included in other sections; Group 5: Occupational skin diseases caused by substances and agents, not included in any of the other sections; Group 6: Occupational diseases caused by carcinogenic agents. The Spanish Secretary of the State of Social Security, General Directorate of Social Security Management, collects this information in the CEPROSS database.

Figure 30. Main agents that cause OD in men and women

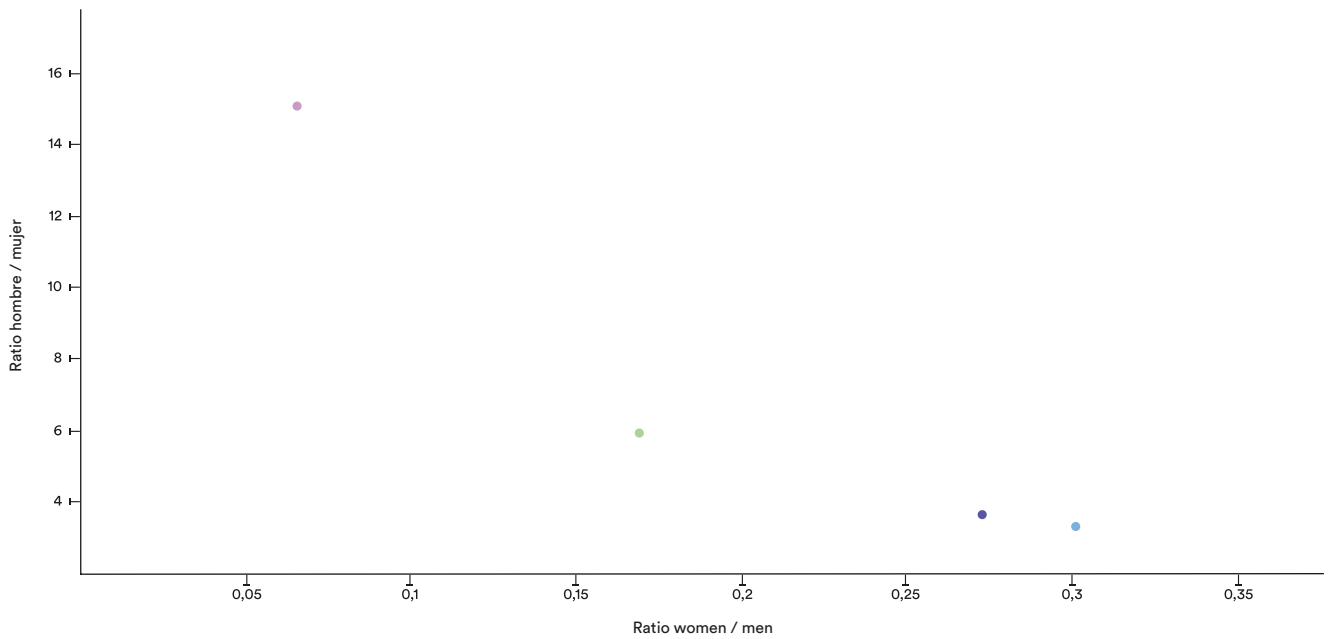
Source: Afi from CEPROSS 2017



- Occupational diseases caused by chemical agents
- Occupational diseases caused by chemical agents
- Occupational diseases caused by biological agents
- Occupational diseases caused by inhalation of substances and agents not included in other sections
- Occupational diseases of the skin caused by substances and agents not included in any of the other sections
- Occupational diseases caused by carcinogens

Figure 31. Work accidents with leave according to economic activity. Men

Source: Afi from PANOTRASS 2017



- Activities of households as employers of domestic personnel
- Building
- Other services
- Water supply, sanitation activities, waste management and decontamination

A higher incidence of “home” accidents reported by women has been also detected -in a ratio greater than 2 times compared to men, as reported in **Figure 15**.

The activities with the highest OD reported in men are manufacturing of metallic products except machinery and equipment (8.9%); food industry (8.1%); manufacture of motor vehicles, trailers and semi-trailers (7.8%) and specialised construction. In women, retail trade (13.6%); health activities (11.1%); services to buildings and gardening activities (9.2%) and food and beverage services.

By activity sectors⁴¹, among women

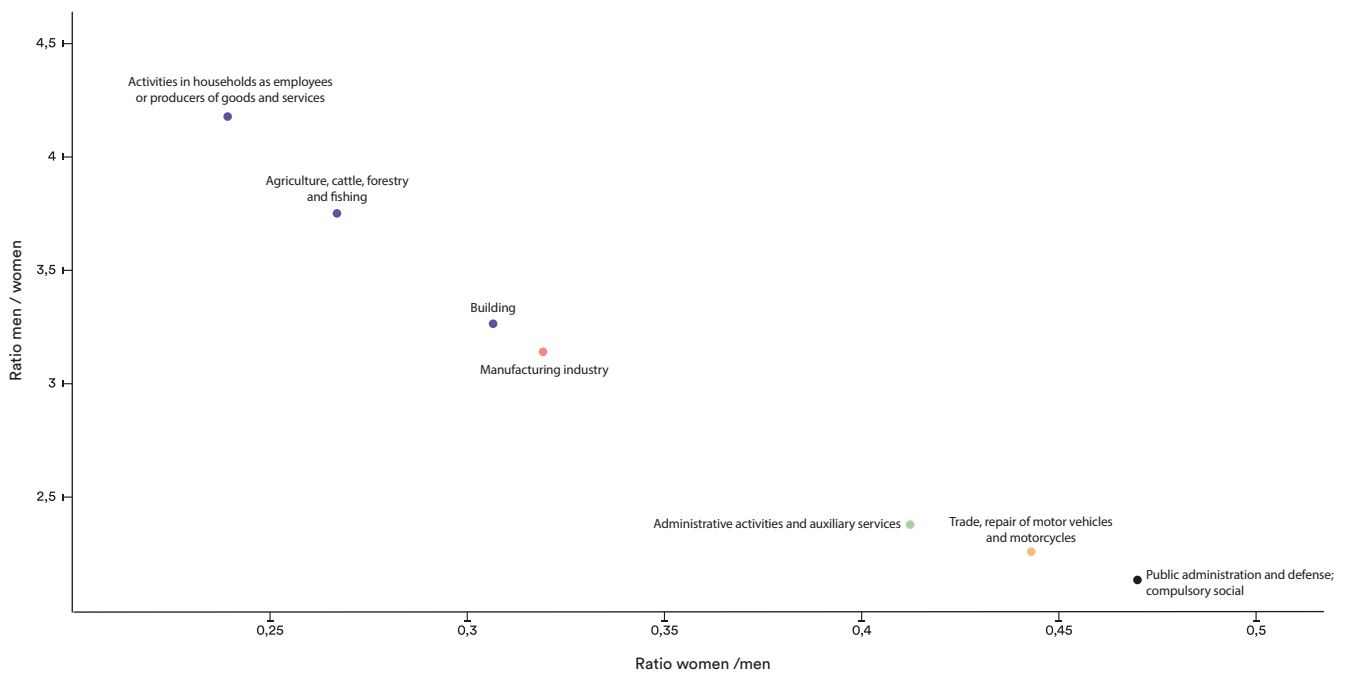
(**Figure 32**), information and communications have an incidence of OD caused by physical agents 14 times higher than men.

The accumulation of OD caused by different agents in the same sector of activity is also observed in women. Such is the case of other services, primary sector, hospitality and education (where ODs are caused by physical agents and skin diseases), and health and social services activities, where ODs are caused by chemical agents and skin diseases.



Figure 32. Incidence of OD by causative agent and activity sector. Women. 2017

Source: Afi, from CEPROSS



Among men (**Figure 33**), the incidence of OD related to **physical agents** is more than 4 times higher than in women in activities carried out as **employers or producers of goods and services**, while in **construction** it is more than 3 times.

In activities of the **primary sector** performed by men, ODs caused by **biological agents** are the ones with the greatest differentiation.

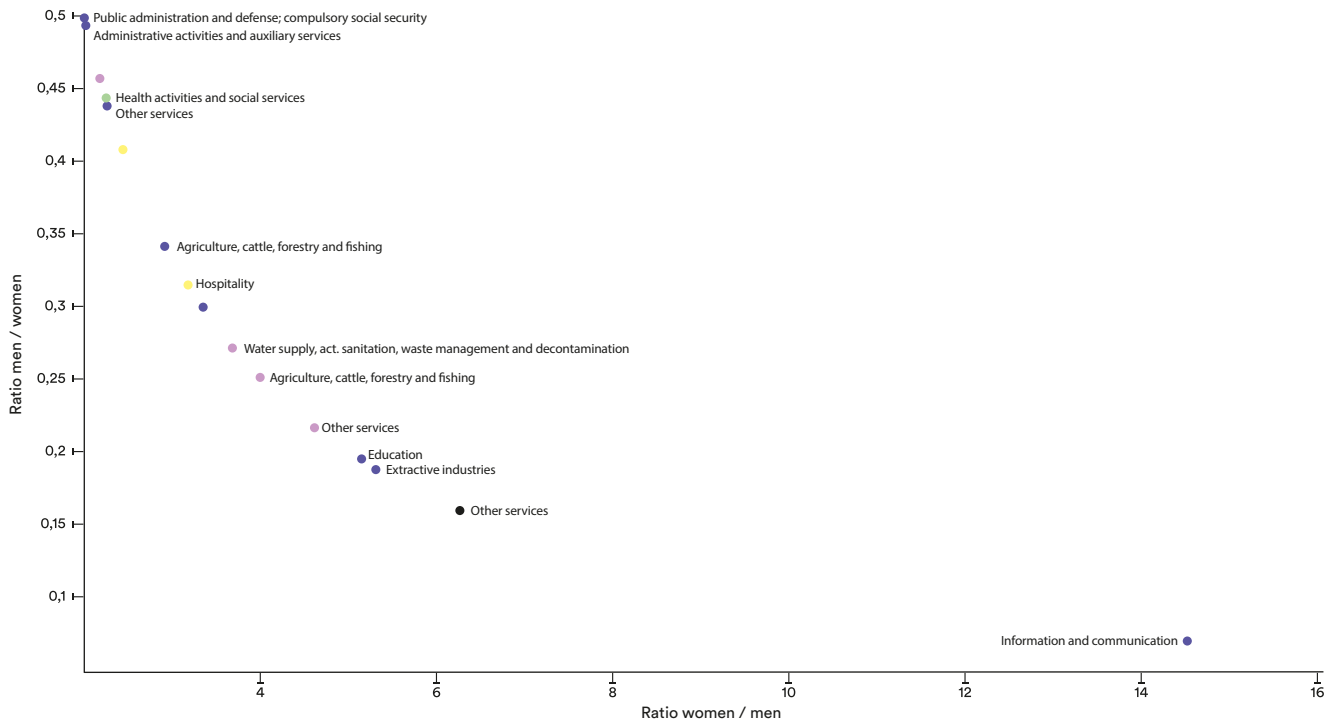
A greater incidence of ODs caused by **inhalation of substances** is observed in the manufacturing industry,

administrative activities and auxiliary services and Public Administrations, defence and social security.

⁴¹ The analysis of the differential incidence of OD by sector of activity was carried out by controlling for the number of employees, for each gender, in each sector.

Figure 33. Incidence of OD by causative agent and activity sector. Men. 2017

Source: Afi, from CEPROSS



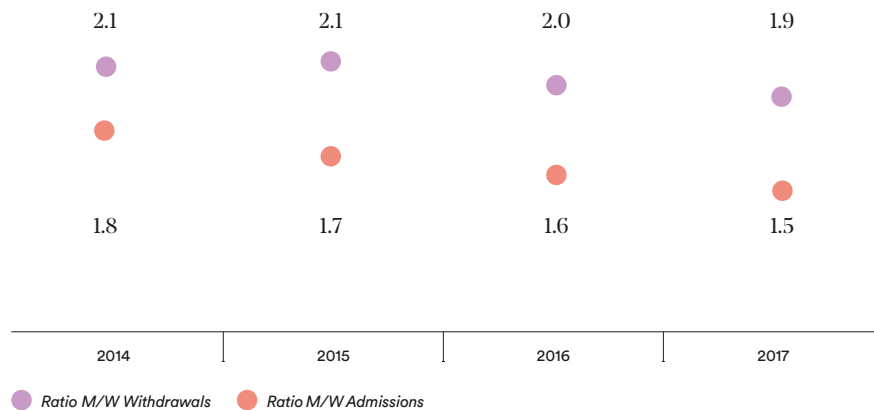
Permanent disability (PD) is a social benefit that covers the loss of salary or professional income of people affected by an illness or work accident that limits or doesn't allow them to work in a predictably definitive manner. It is divided into total PD, full PD and severe disability.

Men benefit from PD more than twice as much as women (Figure 34), although the trend has been going gradually downward over the last four years. On the other hand, **PD leave shows a proportion between men and women (1.5 times in 2017)**, probably motivated by the very circumstances of this leave (death, attainment of the age or benefit period).

It has not been possible to carry out an analysis of causes and valuations of requested PD certifications with the public information available in the competent public administrations.

Figure 34. M / W ratio of admissions and withdrawals due to Permanent Disability⁴², 2014- 2017

Source: Afi, based on Spanish Social Security System



⁴² It is understood that the admission is initial when a new benefit dossier is opened (admissions due to rehabilitation, transfer or revision are not included). The definitive withdrawals compute all the cases of foreseeably definitive cessation of the benefit, excluding therefore the suspensions and withdrawals due to transfer or revision. They are considered as definitive withdrawals: death of the holder, loss of the right due to age or end of term (partial retirement or ordinary retirement) and other causes of withdrawal (sanction, option to another benefit).

En consecuencia...

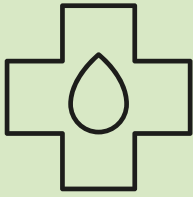


Accumulation of OD

In women the **accumulation of OD caused by different agents takes place in the same sector of activity**. This is the case of **other services, primary sector, hospitality and education** (where there are those caused by physical agents and skin diseases), and **health and social services activities**, which combine those caused by chemical agents and skin diseases.

Higher incidence

There is a higher incidence of **“home” accidents** in women - more than twice as much compared to men. It is necessary to contextualise this data in a scenario in which women, among other issues, take 92% and 83% of the leaves for the care of minors and dependents, according to data from the Spanish Ministry of Labour, Migration and Social Security.



Main occupations

Occupations predominantly undertaken by women concentrate occupational diseases that require a longer recovery time, which could explain why the average duration of sick leave is 11 days higher for women (105.84 days) than for men (95.21 days).

Economic potential

Men benefit from PD in a proportion more than twice than women.



2.5

Unconscious gender biases in health



The health problems related to cardiovascular diseases (CVD) are more frequently diagnosed in men, even though women die more due to these illnesses.

In this chapter we will analyse the unconscious biases of gender and its effects in health. These are materialised in two types of expressions: the universalisation of diagnoses/ therapies/ procedures by extrapolating the results obtained with men (androcentrism) and the differential treatment based on beliefs or stereotypes.

Accuracy in diagnostics

Another dimension that we propose to analyse is the greater **frequency of lack of accuracy in the diagnosis of illnesses in the case of women** (recurrence to the “other” category) and the different procedures applied to men and women with the same symptoms.

Women died from CVD in a greater proportion than men⁴⁴ and cerebrovascular diseases were the main cause of death in women in 2016. However, when **diagnoses**⁴⁵, it is observed that:

- **Men** are more frequently diagnosed with **diseases of the cardiovascular system** (327,448 cases) than women, prevailing over women in **angina pectoris, acute myocardial infarction (AMI), other ischemic heart diseases, cardiac dysrhythmias, cerebrovascular diseases, atherosclerosis** and other diseases of the circulatory or cardiovascular system.
- **Women** are less frequently diagnosed with these diseases (252,323 cases), of which the most important are hypertensive diseases, diseases of the pulmonary circulation, cardiac insufficiency and varicose veins of the lower extremities.

Also, the most **prevalent illnesses**, by level of attention, are:

- In PC, the **diagnosis of AMI and cardiac ischemia without angina in men**⁴⁶, while in women is the **varicose veins in the lower extremities**⁴⁷.
- In HA, the diagnosis of **coronary atherosclerosis and other heart diseases in men**⁴⁸, while in women there was **no evidence of CVD**.

Therefore, it is evident that throughout the medical care cycle, **health problems related to CVD are diagnosed more often in men than in women, although the causes of death in women are more related to CVD than in the case of men.**



The **reasons** behind the greater number of deaths due to CVD in women are conditioned by genetic/ hereditary/ **biological risk factors** such as age, gender or genetic/ hereditary factors that cannot be modified, they are immutable; and by **social factors/ life habits/ androcentrism**, on which we can act⁴⁹ in a **preventive way**. Among others, arterial hypertension (much more frequent in women), **smoking** (addiction trends were analysed in previous sections), **the level of blood cholesterol, diabetes, overweight/ obesity, sedentary lifestyle and stress**, among others.

Other specific risk factors for women are the **polycystic ovaries**, the **oral contraceptive** consumption and the **hormonal factors** throughout the life cycle already mentioned.

According to the WHO⁵⁰, **AMI and premature cerebral vascular accidents are preventable in more than 80% of cases** by promoting a **healthy lifestyle**, as well as education and research in health.

Women tend to have a **higher heart rate**, smaller size of the cardiac cavities and narrower coronary arteries than men, which influences the functioning of the cardiovascular circulatory system. In addition, the hormones also influence the risk of suffering CVD, since oestrogen are a mechanism of protection that varies throughout the life cycle.

43 Death statistics according to the cause of death of the (INE)

45 Source: CMBD-H main diagnoses (MSCBS, 2015).

46 260,804 and 232,598 cases in men, respectively, compared to 77,676 and 109,875 in women.

47 1,059,429 cases in women versus 279,141 in men.

48 30,623 diagnoses in men compared to 10,238 in women in SAC; 430,134 diagnoses in men versus 157,248 in women in hospitalisations.

49 <https://secardiologia.es/comunicacion/notas-de-prensa/notas-de-prensa-sec/8946-la-cardiopatía-isquémica-es-la-primera-causa-de-muerte-en-la-mujer>; http://www.msbs.gob.es/organizacion/sns/planCalidadSNS/pdf/eqidad/07modulo_06.pdf;

50 http://www.who.int/cardiovascular_diseases/es/

At the end of fertility for women, the **risk factors are multiplied (diabetes, hypercholesterolemia, hypertension and obesity)**. For this reason, they are older when they suffer from CVD, which also complicates recovery. There are also cardiovascular illnesses typical of the peripartum to be taken into consideration.

Social knowledge about health plays a decisive role in the detection of diseases. According to a report⁵¹, 39% of women recognise the symptoms of AMI compared to 57% of men. They are mistaken for digestive, respiratory or anxiety/ depression problems. As a consequence, the delay in coming to emergencies by women is greater, which increases the probability of death.

This lower diagnosis is due to the fact that women may present a **different symptomatology** to men regarding AMI and a lower risk perception, since people tend to relate it more frequently to elderly men.



Procedures and treatments

The situation that has just been exposed in relation to the symptomatology also has consequences in the treatments. According to the Spanish Society of Cardiology (SEC), “with the same symptoms of cardiovascular disease, **only 15% of women receive adequate treatment**, while the percentage reaches **56% in men**”⁵².

Women realise late that they are suffering a CVD, which delays the treatment and worsens the prognosis. Therefore, for the improvement of the detection of CVD, it is essential to carry out **studies and clinical trials** that include **women**, with the objective of finding the particular symptoms in them and disseminating information to society.

The hospitalisation database (CMBD-H) allows the **crossing of main diagnoses with registered procedures**, gender and age groups. In order to isolate as much as possible the biological effects on the diagnoses and their corresponding procedures, we select those related to neoplasms and the circulatory, cardiovascular and nervous systems for men and women aged 65 and over, taking into account the number of diagnoses by system and gender in this age group.

The number of procedures performed per diagnosis is calculated for each gender and those that represent at least 1% of the total procedures are selected to analyse whether there are differences according to gender.

No differences were observed between men and women in the procedures performed in hospitalisations in neoplasms and diseases of the nervous system but in some of the diagnoses of the cardiovascular system. Thus, in the case of the diagnosis of AMI, it is observed that for each diagnosis in men a greater number of procedures are performed than for each diagnosis in women.

For every 100 men diagnosed with AMI, 80.9 coronary arteries and catheterisations are performed, 65.1 in the case of women diagnosed with AMI, which means a difference of 15.9 points.

As for the rest of the procedures (other procedures in vessels other than head and neck, diagnostic ultrasound of the heart -echocardiograms-, other cardiovascular therapeutic procedures wi-

thout surgery and Percutaneous Transluminal Coronary Angioplasty -PTCA-), the differences are 22.2, 4.5; 12.1, and 11.2 points, respectively.

In the case of **acute cerebrovascular diseases**, for every 100 people diagnosed, 21.5 **magnetic resonances** are performed in men and 16.6 in women (4.9 points of difference).



Health problems related to cardiovascular diseases are more frequently diagnosed in men than in women, although there are more women who die of these illnesses.

⁵¹ Men and women face to AMI, do we act differently? “Presented at the SEC Congress of Cardiovascular Diseases 2017. <http://www.congresosec.org/web/index.php>.

⁵² <https://secardiologia.es/512-formacion-y-becas/congreso-sec-2011/3607-enfermedad-cardiovascular-mata-a-casi-un-8-mas-de-mujeres-que-hombres-espana>

⁵³ Diagnostic cardiac catheterisation and coronary arteriography, other procedures in vessels other than head and neck, diagnostic ultrasound of the heart (echocardiograms), other cardiovascular therapeutic procedures without surgery and Percutaneous Transluminal Coronary Angioplasty (PTCA).

En consecuencia...

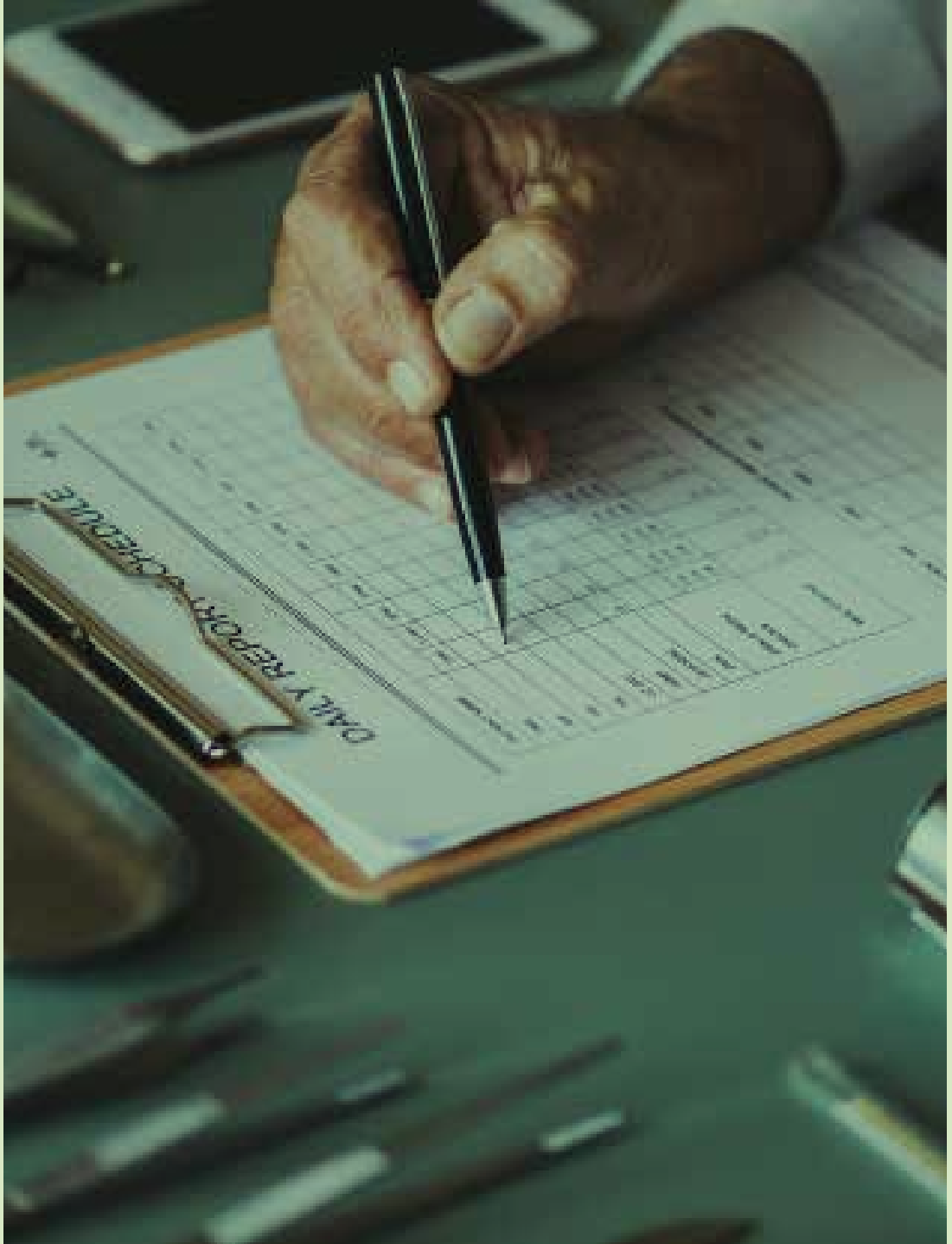


Diagnostics

In the field of diagnoses, health problems related to CVD are more frequently identified in men than in women, although the causes of death in women are more related to CVD than in men. This difference in diagnosis is due to the fact that women may present a **symptomatology different** from that of men regarding **AMI** and a lower perception of the risk of suffering it.

Treatments

In the field of treatments, for each diagnosis of AMI, a greater number of procedures are performed on men compared to women. For example, for every 100 men diagnosed, 80.9 coronary arteries and catheterizations are performed, compared to 65.1 in women. In acute cerebrovascular diseases, magnetic resonances performed in men diagnosed exceed in five points those performed in women diagnosed.



2.6

Women live four years longer but with worse health

Finally, we analyse the **consequences of the opportunity cost in the last phase of women's lives**, especially on the consequences of greater longevity in the context of a country, Spain, that is amongst the top positions in the world in terms of life expectancy at birth (85.84 years in women and 80.31 years in men, 2016, INE).

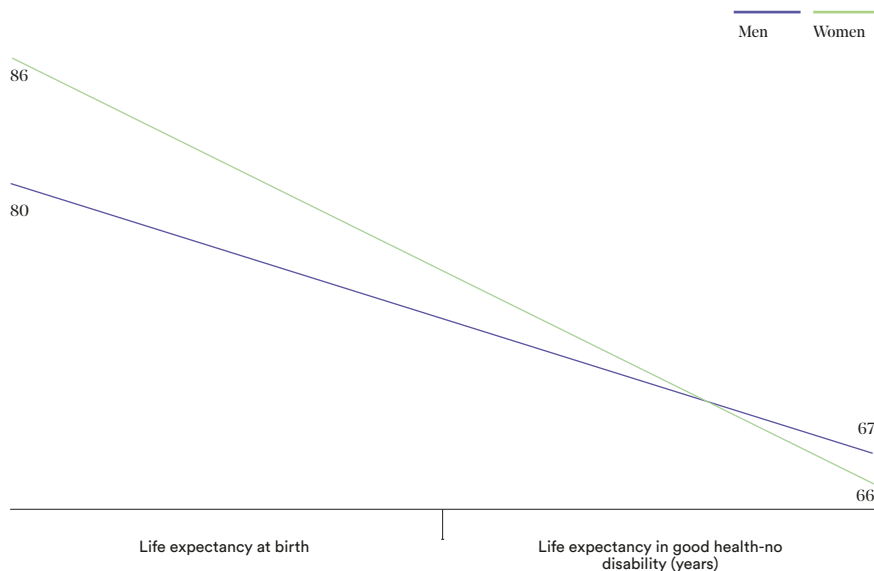
Thus, in October 2018 the Institute for Health Metrics and Evaluation (IHME) in Washington published in The Lancet the results of a study that places Spain as the longest-lived country in the world in 2040. However, although women have a **life expectancy at birth six years higher than men**, and 3.9 years higher when they reach 65

years of age, if only years in good health are considered the difference disappears (Figure 35) and even it is reversed compared to men (66.06 vs 67.47 years).



Figure 35
Life expectancy at birth and in good health-free of disability

Source: Afi from ENS

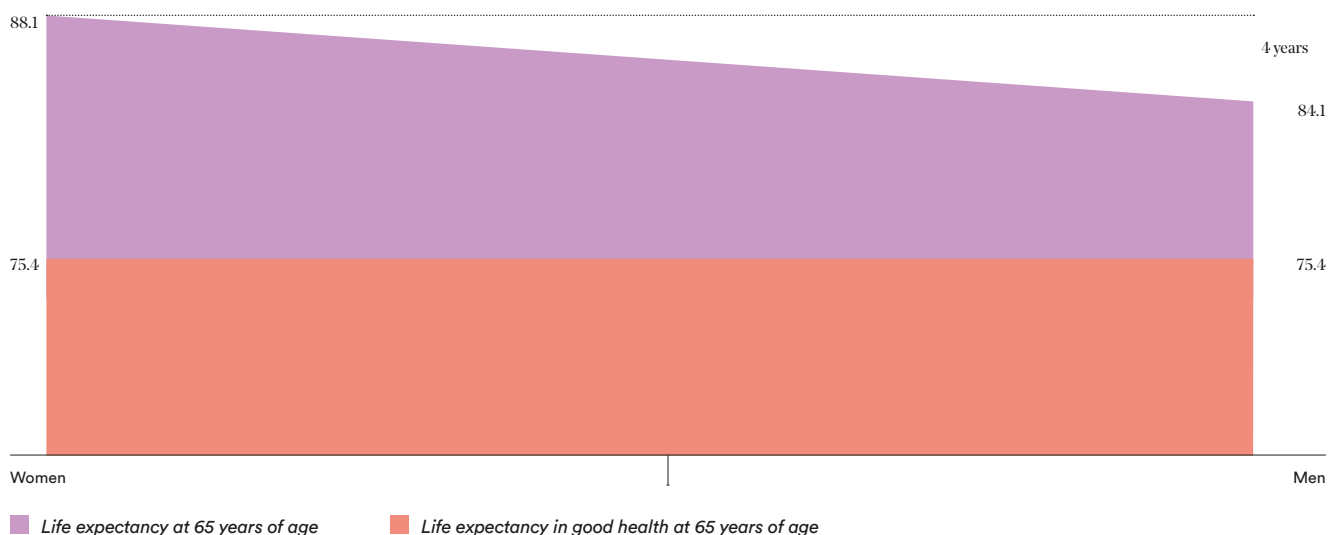


Therefore, **women live longer than men, but with worse health**. Specifically, women live four more years in a situation of poor health or disability with respect to men (Figure 36).

In addition, three out of every four single-person households over 65 years of age are women living alone.

Figure 36. Difference of life expectancy in good health between men and women

Source: Afi, from (INE, 2017)





Women live longer than men, but with worse health.

The differences in the health conditions in which women and men reach old age is a reflection of the accumulation of gender inequalities and other social factors that have been analysed throughout the report, which condition some of the prevalent illnesses.

If these inequalities are eliminated, the potential saving for the whole society of women reaching old age with better health would be **8,945 million euros per year** (during those four additional years in poor health) due to the care required by dependents. This is equivalent to 70% of the total pharmaceutical bill.

After having reached 75 years of age, men and women live in poor health,

respectively, 8.7 and 12.7 more years, generating a gap of 4 years of poor health for women.

In 2016, there were 2,651,874 women in Spain over 75 years of age, of whom 1,832,163 (69.1%) were functional dependents for personal care (Table 7), that is, they have difficulties to eat, sitting and getting up, getting dressed, going to the toilet, showering, etc. If we apply to this group the distribution of dependence degrees assigned by public administrations⁵⁴, the estimated distribution would be as shown in Table 8.

Table 7
Population > 75 years and declared functional dependency

Source: Afi from Spanish Resident population 2016 and National Health Survey 2016 (INE)

	No. of people	Population > 75 years with some declared functional dependency	% over total > 75 years
Women > 75 years	2,651,87	1,832,163	69.1%
Men > 75 years	1,718,433	924,600	53.8%

Table 8
Distribution of functional dependents > 75 years by degree (estimate)

Source: Afi estimate from SAAD 2016

Mujeres	Data
Degree III	438,957
Degree II	549,711
Degree I	475,495
No Degree	367,999

Men	Data
Degree III	221,520
Degree II	277,411
Degree I	239,958
No Degree	185,711

⁵⁴ Certification of the System for Autonomy and Care for Dependency (SAAD, 2016) for dependents: Degree III (Heavy Dependency): 24% of the total number of reports (363,920); Degree II (Severe Dependency): 30% (455,741); Degree I (moderate dependency): 26% (394,212); No Degree: 20.1% (305,092).



The cost of the care that this group of men and women need to improve their welfare in their situation of functional dependency, has been estimated considering the salary and labour cost of the caregivers, that is, 11.25 euros/hour⁵⁵ per caregiver.

If we assign care considering the degree of dependency (Degree III 8 hours/ day, Degree II 4 hours/ day and both Degree I and No Degree 2 hours/ day), the **potential savings associated**

with a better health situation in the women older than 75 years (equivalent to extend the life expectancy in good health), considering the differences between men and women, would be 8,945 million euros, equivalent to 0.8% of GDP. This means 70% of the total pharmaceutical bill.

Table 9. Estimation of the economic value (potential savings) of extending women's life expectancy in good health

Source: Afi from Spanish Resident population 2016 and National Health Survey 2016 (INE)

	Million € per year	% of GDP	Potential savings (Difference women – men)
Women > 75 years old	18,059	1.6%	8,945 million euros a year
Men > 75 years old	9,114	0.8%	0.8% of GDP

The economic value has been contrasted with other previous reports on longevity and dependency⁵⁶ whose summary is presented in the methodological description of the Annex and which presents similar values.



⁵⁵ Estimated from the Spanish Annual Labour Cost Survey (INE, 2016). Average of the CNAE codes 87 Assistance in residential establishments and 88 Social service activities without accommodation. The cost of care is formed by 73% of salary and 27% of labour cost. Number of days worked per year = 217.
⁵⁶ Afi (2009), Braña (2004), Monteverde (2003).

En consecuencia...



Life expectancy

Women have a **life expectancy at birth six years higher than men**, and 3.9 years higher when they reach 65 years of age. However, if only the years in good health are considered, the difference disappears and men present better perspectives.

Lifetime

Therefore, **women live longer than men, but with worse health**. Specifically, women live four years longer than men in a situation of poor health or disability.



GDP

If women could live in better circumstances for these four years that they are living in poor health compared to men, **the potential savings would be 8,945 million euros a year, which is nearly 1 point of GDP (0.8%)**. This is equivalent to 70% of the total pharmaceutical bill.



03

Conclusions



At birth, Spanish women have a life expectancy of 85.84 years and men of 80.31 years. Men rate their health better (78%), compared to women (70%).

There are two types of factors that determine the health of people: biological and social. The first one genetically predisposes people to certain health problems; the second determines the vulnerability of people's health according to gender, age, income, educational level, employment status and residence, among other socio-demographic factors.

When women and men present differences regarding their health status, we encounter a **gender gap in this area**. This has several economic and social effects which have been quantitatively and qualitatively analysed by this report.



Inequalities in the prevalence of diseases and life habits

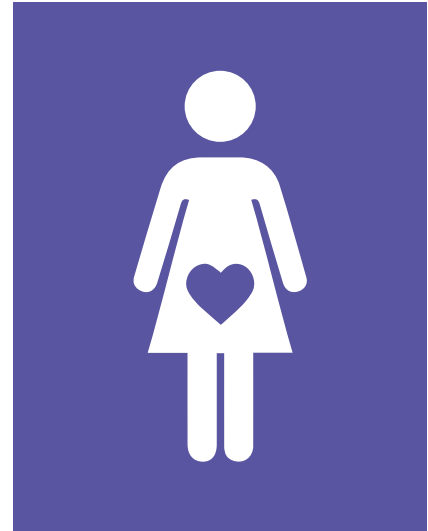
The use of the health system does not present significant differences between women and men, although there is a greater use of Primary Care in women and of Hospital Care in men.

However, there are **important differences in the prevalence** of diseases. In men, diseases of the respiratory or cardiovascular system, and cancer. In women, diseases of the osteo-myoearticular system, nervous system and mood disorders.

In relation to mortality, **women die more frequently in situations of senile and presenile mental disorder**, from Alzheimer's and from causes related to hypertensive diseases, and in a higher proportion than men due to cardiovascular diseases, with cerebrovascular diseases being the main cause of death in women. For men, the main differential causes of death are tumours (bladder, respiratory system, liver), chronic diseases of the lower respiratory tract, self-inflicted injuries and cirrhosis.

In relation to **habits and lifestyle**, there is greater levels of obesity and overweightness in men, less physical activity by women and a higher prevalence of tobacco and alcohol consumption in men, although this is increasing in women.

In addition, **social gender stereotypes still persist**, a situation considered as a problem by two out of every three Spaniards. One of the associated health determinants are eating disorders (ED), among which are anorexia and bulimia. 87.6% of the total cases diagnosed in PC in 2015 corresponded to women.



The reduction of the fertility rate has effects on the demographic and economic health of the country

Maternity determines the relationship of women with health services, as well as their state of health throughout their lives. Its influence on health goes beyond the biological perspective, extending to the responsibility of the care of minors in the first months or years.

The reduction of the fertility rate has effects on the demographic and economic health of the country. The gross birth rate, determined by multiple factors, has decreased 2.5 times with respect to that registered in 1975, while the total fertility rate has decreased more than 2 times, with a number of births in 2017 that is 58% of those registered in 1975, and an increase in the average age at the birth of the first child of six years, up to 31 years old.

These indicators have effects on the demographic and economic health of the country. If Spain had behaved similarly in line with the average of other countries in the region, in 2016 the Spanish population would have reached **47.7 million inhabitants, 1.2 million more than the population registered that year.**

Almost 900,000 of them would be today part of the working-age population, what would **decrease the dependency rate by 0.8% and contribute to GDP with 31 billion euros in 2016 (2.8% of GDP, equivalent to almost 50% of the annual public expenditure on health in Spain), of which 2,872 million euros (9.3%) would have been part of the collection for Social Security contributions.**



The role of the non-professional caregiver from a gender perspective

When analysing the role of the non-professional caregiver from the perspective of gender, we realise that in Spain persists, as in other countries of the region, an unequal distribution of the non-professional care responsibilities between men and women.

59% of the 4.3 million people who take care of the elderly and chronically ill in a non-professional manner are women (64% in the case of care for dependents). They spend 1,800 million hours (62% of the total hours declared) per year. This is non-professional work that, if formalised, would be equivalent to more than 977,000 full-time annual jobs, taking into account that the Spanish Workers' Statute establishes that the maximum legal working day in Spain is 1,826 annual hours.

The economic value of the greater time spent by women in care tasks amounts to 7,812 million euros per year.

This inequality regarding care also has implications for health. Since the probability of suffering depression and anxiety in women is 5.5 and 5.8 points, respectively, higher than in men, it is increased by 3.4 and 2.7 additional points, respectively, in the case of women caregivers.

This greater probability means a deterioration of health that, in exclusively economic terms, regarding the greater amount of leave by temporary disability in women, amounts to 345 million euros (0.03% of the GDP).

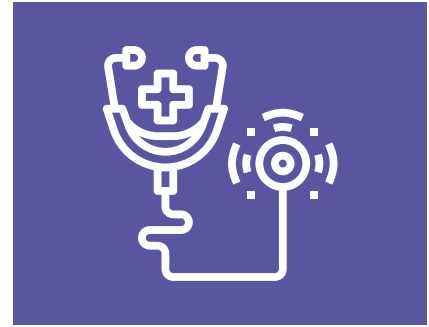


Employment and its consequences in health

The report also showed that women accumulate occupational diseases caused by different factors in the same sector of activity. This is the case of other services, primary sector, hospitality and education (where there are those caused by physical agents and skin diseases) and health activities and social services, with diseases caused by chemical agents and skin diseases.

In this same area, it has been detected that occupations predominantly performed by women concentrate occupational diseases that require a longer recovery time, which could explain why the average duration of sick leave is 11 days higher for women (105.84 days) than for men (95.21 days).

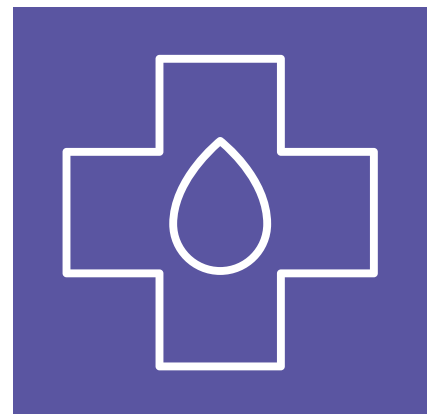
The incidence of "home" accidents reported by women is two times higher than men.



Unconscious gender biases in health

The analysis of prevalent pathologies indicates unconscious biases in gender in terms of health.

Health problems related to cardiovascular diseases are more frequently diagnosed in men than in women, despite there being more women who die from these illnesses than men. The symptoms of acute myocardial infarction in women are less known, which could lead to a lower perception of the risk of suffering it by women, and could explain why there are less diagnoses in their case.



Women live four years longer but with worse health

The gender inequalities that have been exposed throughout the report contribute to the different conditions and health status in which women and men reach old age. In fact, women live four years longer than men, but with worse health.

The potential saving for the whole society of women reaching old age with better health would be 8,945 million euros per year (during these four additional years in poor health), which means 0.8% of GDP. This is equivalent to 70% of the total pharmaceutical bill.

Opportunity cost			
	Personal and family sphere	Economy and society	Public budgets
Inequalities in the prevalence of diseases and life habits	<p>Main illnesses found in men: cardiovascular, respiratory, endocrine, metabolism and nutrition, digestive and psychological problems</p> <p>Main illnesses found in women: locomotor, endocrine, metabolism and nutrition, nervous, blood, urinary, circulatory cardiovascular, skin and psychological problems (depression)</p> <p>Male mortality: tumours (bladder, respiratory system, liver), chronic lower respiratory tract diseases, self-inflicted injuries and cirrhosis</p> <p>Female mortality: senile and presenile mental disorder, Alzheimer's, hypertensive diseases, cerebrovascular and cardiovascular diseases</p>		
	<p>Men: pathologies of the digestive and respiratory system related to consumption habits and risk practices</p> <p>Women: pathologies of locomotor system, thyroid and mood disorders, associated with sedentary lifestyle and obesity</p> <p>To pay attention to the smoking trend in women</p> <p>There are no inequalities or gaps in the access to and the use of health services</p>		
	36.000 patients; 88% women		Treatment cost
The reduction in the fertility rate has effects on the demographic and economic health of the country	<p>Loss of the possibility of reaching 47.7 million inhabitants in 2016, (+1.2 million) of which 0.9 million would be part of the working-age population</p> <p>Loss of 31 billion euros in 2016 (2.8% GDP) and of the possibility of reducing the dependency rate at 0.8%</p>		
The role of the caregiver from a gender perspective	Δ probability of depression in 3.0 percentage points	1,800 million more hours spent in unpaid care (€ 7,812 million/ year)	Higher occurrences of depression, anxiety in informal women caregivers > € 345 million/ year (0.03% GDP)
Employment and its consequences in health	<p>+ Exposure to biological agents</p> <p>+ Combination of agents</p> <p>- work accidents + home accidents</p>	Men benefit from PD in a ratio > 2 times than women.	Duration of the recovery time due to occupational disease 11 days longer in women
Unconscious gender biases in health	Higher number of procedures in response to the same CVD and cerebrovascular in men		
In old age, women live four years longer in poor health	<p>1.8 million women > 75 years old functional dependent</p> <p>Living 4 years longer in poor health</p> <p>€8,945 million/ year (0.8% GDP)</p>		

Qualitative projection

Quantitative estimation

ANNEX

Methodology

Approach

The “Guide of indicators to measure the inequalities of gender in health and its determinants” of the Andalusian School of Public Health makes a proposal of approach and indicators, inspired by “*Unequal, Unfair, Ineffective and Inefficient. Gender Inequity in Health: Why it exists and how can we change it*”, that served as a starting point for the analytical approach to the gap.

Methodological description

Inequalities in the prevalence of diseases and life habits.

Primary Care (PC)

1.1. Source and classification codes

Source: Primary Care Clinic Database, Spanish Ministry of Health and Consumer Affairs (BDCAP, MSCBS), 2015. Codes of International Classification of Primary Care 2 (CIAP2).

1.2. Calculation of differential diseases

From the total number of cases of registered health problems (HP) -problem or circumstance for which a user is treated, either by a health promotion action, a disease prevention action or by attending to it, and which is reflected in the clinical history with an international classification code in use-:

1. Those related to the reproductive system (M and W), including breasts, are eliminated.
2. The percentage of prevalence of each HP for each gender is calculated on the total number of people attended for each gender (the same person can register several health problems in the period analysed).
3. The ratio between the prevalence of both is calculated from both the male (M / W) and the female (W / M) perspective.
4. The ratios indicating a prevalence 2 times higher than the prevalence of the opposite gender are identified.
5. HPs with a prevalence <1% over the total for each gender are eliminated.

1.3. List of diseases related to the reproductive system and breasts removed from the analysis

W Family planning, pregnancy, childbirth and puerperium (eliminated health problems)

W76: Congenital anomalies that complicate pregnancy

W70: Infection / puerperal sepsis

W71: Other infectious diseases in pregnancy / childbirth / puerperium

W75: Injuries that complicate pregnancy

W73: Benign / unspecified neoplasms in relation

to pregnancy

W72: Malignant neoplasms in relation to pregnancy

W78: Pregnancy

W79: Unwanted pregnancy

W80: Ectopic pregnancy

W81: Toxaemia of pregnancy

W82: Miscarriage

W83: Induced abortion

W84: High risk pregnancy

W85: Gestational diabetes

W90: Normal delivery / newborn alive

W91: Normal delivery / newborn dead

W92: Complicated delivery / newborn alive

W93: Complicated delivery / newborn dead

W93 / 92: Complicated delivery not included in W92 or W93

W93-90: Delivery not included in W90 to W93 or W93 / 92

W94: Puerperal mastitis

W95: Other breast problems / diseases in pregnancy / puerperium

W96: Other complications of the puerperium

W99: Other problems / diseases of pregnancy / delivery

W99 / 96: Other problems / diseases of pregnancy / delivery / puerperium not included in W96 or W99

W01: Questions about pregnancy

W02: Fear of being pregnant

W03: Haemorrhage before delivery

W05: Pregnancy vomiting / morning sickness

W10: Post coital contraception

W11: Oral contraception, in women

W12: Intrauterine contraception

W17: Postpartum haemorrhage

W18: Other signs / symptoms of postpartum

W19: Signs / symptoms of breast / breastfeeding

W21: Concern about appearance in pregnancy

W27: Fear of complications of pregnancy

W28: Incapacity / disability due to pregnancy / delivery / puerperium

W29: Other signs / symptoms of pregnancy / delivery / puerperium

XY Genital system (eliminated health problems)

X83: Congenital anomalies of the female genital tract

Y81: Phimosis / Excessive foreskin

Y82: Hypospadias

Y83: Testicle not descended

Y84: Other congenital anomalies of the male genital tract

X72: Genital candidiasis, in women

X74: Pelvic inflammatory disease

X92: Genital infection due to chlamydia in women

Y73: Prostatitis / seminal vasculitis

Y74: Orchitis / epididymitis

Y75: Balanitis

X78: Uterine fibromyoma

X80: Benign neoplasms of the female genital tract

X81: Unspecified / other genital neoplasms in women

Y79: Benign / unspecified neoplasms of the breast / male genital tract

YX79: Benign breast neoplasms (includes X79)

X75: Malignant neoplasms of the cervix

X76: Malignant neoplasms of the breast, in women

X77: Other female genital neoplasms

Y77: Malignant prostate neoplasms

Y78: Other malignant neoplasms of the breast / male genital tract

X84: Unspecified vaginitis / vulvitis

X85: Other problems of cervix

X86: Abnormal cervical cytology

X87: Uterovaginal prolapse

X88: Fibrocystic mastopathy

X89: Premenstrual syndrome

Y85: Benign prostatic hypertrophy

Y86: Hydrocele

X01: Genital pain in women

X02: Menstrual pain

X03: Intermenstrual pain

X04: Pain during intercourse, in women

X05: Absent / poor menstruation

X06: Excessive menstruation

X07: Irregular / frequent menstruation

X08: Intermenstrual bleeding

X09: Premenstrual signs / symptoms

X10: Induced postponement of menstruation

X11: Menopausal signs / symptoms

X12: Postmenopausal bleeding

X13: Post coital bleeding

X13 / 08-05: Alteration of menstruation / other bleedings not included in X05 to X08 or X13

X14: Excessive vaginal discharge

X15: Other vaginal signs / symptoms

X16: Other vulvar signs / symptoms

X17: Other signs / symptoms of the female pelvis

X22: Concern about the appearance of the breasts, in women

X26: Fear of breast cancer, in women

Y01: Pain in the penis

Y02: Pain in the scrotum / testicles

Y04: Other signs / symptoms of the penis

Y05: Other signs / symptoms of scrotum / testicles

Y06: Prostatic signs / symptoms

Y07: Unspecified organic impotence

Y08: Other signs / symptoms of male sexual function

YX18: Mammary pain (includes X18)

YX19: Breast mass / lump (includes X19)

YX21: Other mammary signs / symptoms (X21 + Y16 *)

YX99: Other diseases of the genital tract / breast (X99 + Y99)

YX03: Urethral discharge (includes Y03)

YX20: Signs / symptoms of nipples (includes X20)

YX27: Fear of other genital / breast diseases (X27 + Y27)

YX29: Other signs / symptoms of the genital tract / breast (X29 + Y29)

YX28: Inability / disability of the genital tract (X28 + Y28)

Hospital Care (HC)

Specialised Outpatient Care (SOC)

2.1. Source and classification codes

Source: Minimum Basic Data Set - Specialised Outpatient Care, Spanish Ministry of Health and Consumer Affairs (CMBD AAE, MSCBS) 2015. Code of International Classification 9 Clinical Modification (CIE9MC)

2.2. Calculation of differential diseases

From the total number of registered care cases:

1. Those related to the reproductive system (M and W), including breasts, are eliminated.
2. The percentage of prevalence of each diagnosis for each gender is calculated on the total number of cases (contacts) registered for each gender.
3. The ratio between the prevalence of both is calculated from both the male (M / W) and the female (W / M) perspective.
4. The ratios indicating a prevalence 2 times higher than the prevalence of the opposite gender are identified.
5. Diagnoses with a prevalence <1% over the total of cases for each gender are eliminated.

2.3. List of diseases related to the reproductive system and breasts removed from the analysis

- 24: Breast cancer
- 25: Cancer of the uterus
- 26: Cervical cancer
- 27: Ovarian cancer
- 28: Cancer of other female genital organs
- 29: Prostate cancer
- 30: Testicular cancer
- 31: Cancer of other male genital organs
- 46: Benign neoplasm of the uterus
- 164: Hyperplasia of the prostate
- 165: Inflammatory conditions of the male genital organs
- 166: Other male genital disorders
- 167: Non-malignant conditions of the breast
- 168: Inflammatory diseases of the female pelvic organs
- 169: Endometriosis
- 170: Prolapse of the female genital organs
- 171: Menstrual disorders
- 172: Ovarian cyst
- 173: Menopausal disorders
- 174: Female infertility
- 175: Other female genital disorders
- 177: Miscarriage
- 178: Induced abortion
- 179: Post abortion complications
- 180: Ectopic pregnancy
- 181: Other complications of pregnancy

182: Haemorrhage during pregnancy, placenta abruptio and placenta praevia

183: Hypertension complicating pregnancy, delivery and puerperium

184: Preterm delivery or threat of preterm delivery

185: Post term pregnancy

186: Diabetes or abnormal glucose tolerance that complicates pregnancy, delivery or puerperium

187: Defective position and anomalous presentation

188: Foetopelvic disproportion, obstruction

189: Previous caesarean section

190: Foetal distress and abnormal contractions in delivery

191: Polyhydramnios and other problems of the amniotic cavity

192: Complication of the umbilical cord

193: Trauma of the perineum and vulva

194: Delivery with forceps

195: Other complications of the delivery and puerperium that affect the treatment of the mother

196: Normal pregnancy and delivery

163: Genitourinary symptoms and ill-defined conditions

215: Genitourinary congenital anomalies

Hospitalisation (H)

3.1. Source and classification codes

Source: Minimum Basic Data Set - Hospitalisation, Spanish Ministry of Health and Consumer Affairs (CMBD H, MSCBS) 2015. Code of International Classification 9 Clinical Modification (CIE9MC)

3.2. Calculation of differential diseases

From the total amount of hospital admissions by diagnosed cause:

1. Those related to the reproductive system (M and W), including breasts, are eliminated.
2. The percentage of prevalence of each cause is calculated over the total for each gender.
3. The ratio between the prevalence of both is calculated from both the male (M / W) and the female (W / M) perspective.
4. The ratios indicating a prevalence 2 times higher than the prevalence of the opposite gender are identified.
5. Diagnoses with a prevalence <1% over the total for each gender are eliminated.

3.3. List of diseases related to the reproductive system and breasts removed from the analysis

- 24: Breast cancer
- 25: Cancer of the uterus
- 26: Cervical cancer
- 27: Ovarian cancer
- 28: Cancer of other female genital organs
- 29: Prostate cancer
- 30: Testicular cancer
- 31: Cancer of other male genital organs
- 46: Benign neoplasm of the uterus
- 164: Hyperplasia of the prostate
- 165: Inflammatory conditions of the male

genital organs

166: Other male genital disorders

167: Non-malignant conditions of the breast

168: Inflammatory diseases of the female pelvic organs

169: Endometriosis

170: Prolapse of the female genital organs

171: Menstrual disorders

172: Ovarian cyst

173: Menopausal disorders

174: Female infertility

175: Other female genital disorders

177: Miscarriage

178: Induced abortion

179: Post abortion complications

180: Ectopic pregnancy

181: Other complications of pregnancy

182: Haemorrhage during pregnancy, placenta abruptio and placenta praevia

183: Hypertension complicating pregnancy, delivery and puerperium

184: Preterm delivery or threat of premature delivery

185: Post term pregnancy

186: Diabetes or abnormal glucose tolerance that complicates pregnancy, delivery or puerperium

187: Defective position and anomalous presentation

188: Fetofetal disproportion, obstruction

189: Previous caesarean section

190: Foetal distress and abnormal contractions in delivery

191: Polyhydramnios and other problems of the amniotic cavity

192: Complication of the umbilical cord

193: Trauma of the perineum and vulva

194: Delivery with forceps

195: Other complications of the delivery and puerperium that affect the treatment of the mother

196: Normal pregnancy and delivery

163: Genitourinary symptoms and ill-defined conditions

215: Genitourinary congenital anomalies

Mortality

4.1. Source and classification codes

Source: Death statistics according to the cause of death (Spanish National Institute of Statistics -INE-) 2016. Codes of International Classification 10 (ICD10).

4.2. Calculation of differential diseases

From the total amount of deaths by causes:

1. Those related to the reproductive system (M and W), including breasts, are eliminated.
2. The percentage of prevalence of each cause is calculated over the total for each gender.
3. The ratio between the prevalence of both is calculated from both the male (M / W) and the female (W / M) perspective.
4. The ratios indicating a prevalence 2 times higher than the prevalence of the opposite gender are identified.
5. Diagnoses with a prevalence <1% over the

total for each gender are eliminated.

4.3. List of diseases related to the reproductive system and breasts removed from the analysis

- 009-041: II. Tumours
 023: Malignant tumour of the breast
 024: Malignant tumour of the cervix
 025: Malignant tumour of other parts of the uterus
 026: Malignant tumour of the ovary
 027: Malignant tumours of other female genital organs
 028: Malignant tumour of the prostate
 029: Malignant tumours of other male genital organs
 077-080: XIV. Diseases of the genitourinary system
 078: Diseases of the male genital organs
 079: Diseases of the female genital organs and breast disorders
 081: XV. Pregnancy, delivery and puerperium.

The reduction of the fertility rate has effects on the demographic and economic health of the country

Population growth

$$Y_{t+1} = Y_t + \text{Births}_t - \text{Deaths}_t - \text{Emigrations}_t$$

Cruz and Ahmed (2016) estimate for 160 countries between 1950 and 2010, the effect of demographic changes on economic growth, savings and poverty. To measure the demographic changes, they use the proportion of working-age population over the total population. Thus, their estimate is based on the following equation:

$$1. \quad \frac{Y}{N} = \frac{Y}{L} \frac{WAP}{N} \frac{L}{WAP}$$

Where Y is the total GDP, N is the total population (Y/N is the GDP per capita), L is the number of workers (Y/L is productivity), WAP is the working-age population (WAP/N the proportion of working-age population over the total population) and (L/WAP is the occupation rate).

By taking logarithms of the variables in (1) and representing the equation in terms of growth:

$$2. \quad g_y = g_z + g_w + g_l$$

Where g_y is the growth of GDP per capita, g_z is the productivity per worker, g_w is the growth of the proportion of working-age population and g_l is the growth of the active population.

Considering that the growth of productivity per worker is a function of X variables and that the growth of the active population is constant, it results in the following equation:

$$3. \quad g_y = a + b f(x) + g_w + g_l$$

This equation (3) suggests that, keeping everything else constant, an increase in the proportion of the working-age population increases the GDP growth per capita.

For this to be the case, certain requirements must be met.

There are several factors that are not included in the analysis that influence this equation (omitted variables). Thus, the fertility ratio affects the growth of the working-age population (g_w), which also changes the size of the population (N). A higher life expectancy and migratory movements also affect the size of the population (N). The omission of variables that affect the equation (2) that also affect GDP growth per capita can lead to problems of endogeneity.

To solve the problems of endogeneity, the authors use different econometric approaches for finding solid results. Thus, the increase of 1 percentage point of the ratio of working-age population over the total population generates an increase of 1.5 percentage points of GDP per capita.

The role of the non-professional caregiver from a gender perspective

In order to analyse whether the prevalence of depression and anxiety is statistically and significantly different between men and women, and among caregivers, a probabilistic model is estimated with microdata from INE's National Health Survey, controlled by different socioeconomic factors. In addition, the factor of elevation of survey has been applied to the estimates so that the results are representative for the whole population.

The probabilistic models (probit) allows us to measure the probability for an individual to be part of the subject of study, taking into account certain explanatory variables of the individuals.

The probit model, of binary classification and estimated by Maximum Likelihood, has as a dichotomous dependent variable the probability that the individual answers "depression" or "chronic anxiety" to the following questions of the Spanish National Health Survey:

25. I'm going to read a list with certain diseases or health problems. Do you suffer or have you ever suffered from any of them?

The independent binary variables are a series of socioeconomic characteristics (gender, economic activity, age group, marital status and educational level) and the care variable, which is determined by the affirmative response to the next question from the Spanish National Survey of Health:

Do you care, at least once a week, for an elderly or chronically-ill person? Do not consider it if it is part of your job.

Regarding the interpretation of the estimated parameters, the sign indicates in which direction

the probability of suffering depression / anxiety goes when the independent variable increases. Unlike the linear model, the amount of the parameter does not have a direct interpretation as a variation of the probability. Due to the non-linearity of the model, the marginal effects are calculated in points of interest. Marginal effects reflect the change in the probability of suffering depression / anxiety when a variable that belongs to the vector of independent variables changes, keeping the other factors fixed.

For more information on probabilistic models, see Wooldridge, J.M. (2002). *Econometric Analysis of Cross Section and Panel Data*. Cambridge: MIT Press.

Depression probabilistic model

Probit regression : Log pseudolikelihood = -10835694 | Number of obs = 23055 | Wald chi2 (18) = 1188,09 | Prob > chi2 = 0 | Pseudo R2 = 0,1317

depression	Coef.	Robusts Std. Err.	z	P> z	[95%	Conf. Interval]
gender	0.409007	0.033195	12.32	0.000	0.3439455	0.474068
care	0.222804	0.042270	5.27	0.000	0.1399567	0.305650
studying	0.201920	0.139389	1.45	0.147	-0.0712765	0.475117
unemployment	0.367296	0.048048	7.64	0.000	0.2731230	0.461469
retired	0.317293	0.058666	5.41	0.000	0.2023103	0.432275
disable	1.239462	0.071497	17.34	0.000	1.0993320	1.379593
household	0.334278	0.055993	5.97	0.000	0.2245329	0.444023
other_active	-0.089587	0.442423	-0.20	0.840	-0.9567208	0.777547
adult_young	0.688739	0.129814	5.31	0.000	0.4343078	0.943170
adult_old	0.991666	0.131317	7.55	0.000	0.7342905	1.249042
elderly	1.053736	0.140489	7.50	0.000	0.7783826	1.329090
married	-0,99257	0.041530	-4.80	0.000	-0.2806546	-0.117859
widow	0.089960	0.057123	1.57	0.115	-0.0219990	0.201919
separated	0.090897	0.090942	1.00	0.318	-0.0873456	0.269139
divorced	0.231935	0.066579	3.48	0.000	0.1014421	0.362427
other_civil	-0.808228	0.508253	-1.59	0.112	-1.8043860	0.187931
education_superior_no_uni	-0.127004	0.037289	-3.41	0.001	-0.2000899	-0.053918
education_university	-0.416762	0.047663	-8.74	0.000	-0.5101790	-0.323345
_cons	-2.471584	0.130695	-18.91	0.000	-2.7277420	-2.215425

Marginal effect of depression probabilistic model

Marginal effects after probit: $y = Pr(\text{depression}) (\text{predict}) = 0,07025331$

variable	dy/dx	Std. Err.	z	P> z	[95%	C.I.]	X
gender*	0.055087	0.00432	12.75	0.000	0.046617	0.063557	0.512995
care*	0.034012	0.00728	4.67	0.000	0.019737	0.048287	0.112102
education*	0.030633	0.02371	1.29	0.196	-0.015832	0.077098	0.092978
unemploym*	0.060442	0.00940	6.43	0.000	0.042016	0.078867	0.119308
retired*	0.048970	0.01021	4.80	0.000	0.028964	0.068975	0.206907
disable*	0.328790	0.02690	12.22	0.000	0.276066	0.381513	0.026174
household*	0.054851	0.01095	5.01	0.000	0.033397	0.076305	0.086515
other_o*	-0.011287	0,05202	-0.22	0.828	-0.113236	0.090662	0.001259
adult_n*	0.110950	0.02421	4.58	0.000	0.063509	0.158391	0.332576
adult_r*	0.172492	0.02767	6.23	0.000	0.118263	0.226720	0.333800
elderly*	0.213344	0.03738	5.71	0.000	0.140081	0.286607	0.219295
married*	-0.027579	0.00590	-4.68	0.000	-0.039135	-0.016022	0.588145
widow*	0.012819	0.00863	1.49	0.137	-0.004093	0.029732	0.069239
separated*	0.013051	0.01389	0.94	0.347	-0.014169	0.040270	0.015877
divorc_o*	0.036456	0.01204	3.03	0.002	0.012851	0.060062	0.035871
other_l*	-0.059112	0.01516	-3.90	0.000	-0.088824	-0.029401	0.001171
education_i*	-0.016448	0.00462	-3.56	0.000	-0.025508	-0.007388	0.289718
e_universit*	-0.046491	0.00434	-10.71	0.000	-0.055001	-0.037980	0.189139

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Depression probabilistic model

Probit regression : Log pseudolikelihood = -10623240 | Number of obs = 23054 | Wald chi2(18) = 684,39 | Prob > chi2 = 0 | Pseudo R2 = 0,0831

ansiedad	Coef.	Robusts Std. Err.	z	P> z	[95%	Conf. Interval]
gender	0.424680	0.033020	12.86	0.000	0.3599611	0.489398
care	0.181303	0.041930	4.32	0.000	0.0991221	0.263483
studying	0.080787	0.123758	0.65	0.514	-0.1617747	0.323349
unemployment	0.301494	0.046683	6.46	0.000	0.2099958	0.392992
retired	0.237286	0.059521	3.99	0.000	0.1206278	0.353945
disable	1.014484	0.073187	13.86	0.000	0.8710414	1.157928
household	0.156766	0.055775	2.81	0.005	0.0474491	0.266082
other_active	0.596387	0.406700	1.47	0.143	-0.2007294	1.393504
adult_young	0.608076	0.113028	5.38	0.000	0.3865452	0.829607
adult_old	0.787123	0.114817	6.86	0.000	0.5620855	1.012161
elderly	0.637131	0.124161	5.13	0.000	0.3937793	0.880483
married	-0.164731	0.040576	-4.06	0.000	-0.2442597	-0.085203
widow	-0.004261	0.059741	-0.07	0.943	-0.1213498	0.112829
separated	-0.049036	0.094061	-0.52	0.602	-0.2333927	0.135320
divorced	0.181391	0.067619	2.68	0.007	0.0488595	0.313923
other_civil	-0.464154	0.387128	-1.20	0.231	-1.2229110	0.294603
education_superior_no_uni	-0.132466	0.036636	-3.62	0.000	-0.2042710	-0.060660
education_university	-0.301635	0.045591	-6.62	0.000	-0.3909915	-0.212278
_cons	-2.253690	0.112822	-19.98	0.000	-2.4748170	-2.032562

Marginal effect of depression probabilistic model

Marginal effects after probit: $y = Pr(\text{depression}) (\text{predict}) = 0,07151562$

variable	dy/dx	Std. Err.	z	P> z	[95%	C.I.]	X
gender*	0.057992	0.00438	13.24	0.000	0.049407	0.066578	0.513101
care*	0.027398	0.00698	3.93	0.000	0.013719	0.041077	0.112274
education*	0.011568	0.01859	0.62	0.534	-0.024870	0.048007	0.092985
unemploym*	0.048518	0.00870	5.57	0.000	0.031459	0.065578	0.119200
retired*	0.035852	0.00987	3.63	0.000	0.016510	0.055194	0.207085
disable*	0.248839	0.02557	9.73	0.000	0.198714	0.298964	0.026176
household*	0.023502	0.00913	2.57	0.010	0.005598	0.041406	0.086658
other_o*	0.121022	0.11116	1.09	0.276	-0.096858	0.338901	0.001260
adult_n*	0.097084	0.02062	4.71	0.000	0.056665	0.137503	0.332553
adult_r*	0.131506	0.02261	5.82	0.000	0.087184	0.175827	0.333760
elderly*	0.112392	0.02686	4.18	0.000	0.059739	0.165045	0.219423
married*	-0.022995	0.00578	-3.98	0.000	-0.034320	-0.011669	0.588146
widow*	-0.000580	0.00811	-0.07	0.943	-0.016475	0.015316	0.069272
separated*	-0.006464	0.01197	-0.54	0.589	-0.029917	0.016990	0.015956
divorc_o*	0.027944	0.01165	2.40	0.016	0.005109	0.050778	0.035862
other_l*	-0.044675	0.02412	-1.85	0.064	-0.091942	0.002591	0.001171
education_i*	-0.017367	0.00459	-3.78	0.000	-0.026363	-0.008370	0.289567
e_university*	-0.035922	0.00468	-7.67	0.000	-0.045104	-0.026741	0.189019

(*) dy/dx is for discrete change of dummy variable from 0 to 1

Employment and its consequences in health

The differential calculation of occupational diseases between men and women follows the same methodology applied to differential prevalent pathologies of primary care and hospital care.

The sources used in this section are the database of non-traumatic pathologies caused by work (PANOTRASS) and occupational diseases (CEPROSS) of the Spanish Ministry of Labour, Migration and Social Security.

Unconscious gender biases in health

The calculation of differential procedures for the same diagnosis between men and women

follows a methodology similar to that applied to differential prevalent pathologies of primary care and hospital care.

The main diagnostic data is crossed with the registered procedures, by gender and age group, of the Minimum Basic Data Set - Hospitalisation (CMBD-H). In order to isolate as much as possible the biological effects on the diagnoses and their corresponding procedures, those related to neoplasms and to the circulatory and nervous systems are selected for men and women aged 65 and over, taking into account the number of diagnoses per system and gender in that age group.

The number of procedures performed is calculated according to the number of diagnoses for each gender, selecting the most frequent (representing at least 1% of the total number of procedures) and analysing whether there are gender differences of at least 4.5 points.

Women live four years longer, but with worse health

Economic value of care compared to several reports.

	ClosinGap (2018)	Afi (2009)	Braña (2004)
DEGREE III	19,530	24,497	18,646
DEGREE II	9,765	14,557	11,245
DEGREE I	4,883	9,587	5,504
NO DEGREE	4,883	-	-

Working definitions

The gender approach⁵⁸ is the “concept that refers to social differences - as opposed to biological differences - between men and women that have been learned, change over time and present great variations both between different cultures and within the same culture. They respond to social constructions, subject to change by social consensus”.

Gender is therefore the **social construction of differences based on sex**, and includes the functions, behaviours and attributes that societies consider appropriate for men and women.

Health⁵⁹ is the “**complete state of physical, psychological, social and spiritual welfare, not just the absence of illness or malaise**”.

Health is a **multidimensional element** and is affected by several factors. Its knowledge can be approximated by indicators identified in the literature and in the available statistical information. There are many dimensions that partially “inform” about the degree of welfare included in the definition⁶⁰, so it is necessary to delimit those that best explain the existence, incidence and effects of gender inequality in terms of health.

The gender gap in health is the subject analysed in this report, and it is defined as the **set of inequalities by gender - and that, therefore, can be avoided- in the state of physical, psychological, social and spiritual welfare**.

In this regard, despite the fact that women have a higher life expectancy at birth (and at 65

years of age) than men, they have a worse self-perception of their health. For this reason, it has been proposed as the main indicator of the health gap (“the problem”) that of “women perceiving that they have worse health (own perception of the state of health)”, contrasted with a set of complementary indicators selected by their ability to objectify the proposed main indicator, apparently subjective in nature⁶¹.

Opportunity cost is the economic value of the alternative which one rejects when deciding on a certain action or expense. The economic value quoted equals the benefits that would have been obtained from having chosen the best possible alternative. There is always an opportunity cost because available resources are limited (whether it is money or time) and this is precisely what forces us to choose among the possible options.



⁵⁸ Preamble to the Constitution of the World Health Organisation, which was adopted by the International Sanitary Conference, held in New York from June 19 to July 22, 1946, signed on July 22, 1946 by the representatives of 61 States. (Official Records of the World Health Organization, No. 2, p.100), and that entered into force on April 7, 1948. The definition has not been modified since 1948.

⁶⁰ Morbidity, mortality, vulnerability, perception of health, behaviours in relation to health problems (preventive, curative, promoter), response of the health sector (availability of health services for a specific problem, distance to the health service, accessibility, quality of care), results in health and immediate consequences (mortality, recovery, disability), social and economic consequences (stigma, loss of employment, etc.), fundamentally.

⁶¹ See bibliography and data sources.

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Women for a healthy economy

What is ClostinGap? Women for a healthy economy

On Merck's initiative, eight large companies have joined together with the objective of creating a cluster that analyses, in a constructive and rigorous way, what the opportunity cost for the economy is derived from the waste of women's talent due to the persistence of gender gaps.

Who's joined this cluster

The companies that have joined this cluster are Merck, MAPFRE, Repsol, Vodafone, Meliá Hotels International, Mahou San Miguel and Solán de Cabras, BMW Group and L'Oréal.

ClostinGap Board: Marieta Jiménez (Merck), Begoña Elices (Repsol), Antonio Huertas (MAPFRE), Francisco Román (Vodafone), Guenter Seemann (BMW Group), Gabriel Escarrer (Meliá Hotels International), Eduardo Petrossi (Mahou San Miguel and Solán de Cabras) and Juan Alonso de Lomas (L'Oréal).

ClostinGap Executive Committee:

Ana Polanco (Merck), María Pilar Rojas (Repsol), Eva Píera (MAPFRE), Rebeca Navarro (Vodafone), Natalia González-Valdés (L'Oréal), Pilar García de la Puebla (BMW Group), Lourdes Ripoll (Meliá Hotels International) and Patricia Leiva (Mahou San Miguel and Solán de Cabras)

What work are we developing

On a bi-monthly basis, the cluster will publish detailed reports on the impact of the persistence of the different gender gaps on GDP in areas such as health, pensions, work-life balance, information technologies, tourism, leisure or mobility, in addition to developing other common actions.

What are our objectives

To generate knowledge and data on gender gaps, to share good practices that are already being undertaken, to create new initiatives that help to close gender gaps and to contribute to maintain the debate on equality in the public agenda.

More about us

You can find more information about us by visiting www.closingap.com or our Twitter (@ClostinGap) and LinkedIn profiles.





Thanks

This report on the opportunity cost of the gender gap has been prepared in collaboration with Afi under the supervision of **Dr. Julio Zarco**, director of the Personalisation Area of Health Care and Corporate Social Responsibility of the San Carlos Clinical Hospital (Madrid), and **Rafael Myro Sánchez**, Professor of Applied Economics at the Complutense University of Madrid, to whom ClosinGap wishes to express its gratitude and appreciation for the time spent and the contributions made to enrich the research.
