

REGIONAL
HEALTH AGENCY
OF TUSCANY

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Regional Health Agency of Tuscany

Villa La Quiete alle Montalve
via Pietro Dazzi, 1
50141 Firenze

Tel: 055 462431
Fax: 055 4624330
info@ars.toscana.it

•••••

Epidemiology Unit
osservatorio.epidemiologia@ars.toscana.it

•••••

Quality and Equity Unit
osservatorio.qualita@ars.toscana.it

•••••

Documentary research centre
centrodocumentazione@ars.toscana.it

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www.ars.toscana.it

GENDER-RELATED HEALTH IN TUSCANY

About gender medicine

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A general overview

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Lifestyles

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Health problems

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Health
and social aspects

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Use of health services

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Violence, trafficking,
mistreatment,
and abuse

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Training
on gender medicine

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Gender-related Health in Tuscany

Coordinator

Francesco Cipriani – Director of the Regional Health Agency of Tuscany

Authors (in alphabetical order)

Rosanna Abbate	Department of Atherothrombotic Disease University Hospital Careggi, Florence University of Florence
Carolina Amador	Epidemiology Unit Meyer Children's University Hospital, Florence
Laura Aversa	Social Sector Epidemiology Unit Regional Health Agency of Tuscany
Sonia Baccetti	“Fior di Prugna” Regional Referral Centre for Complementary Medicines and Traditional Chinese Medicine Local Health Unit 10, Florence Tuscan Network for Integrated Medicine
Sara Bagatti	Anaesthesia and Resuscitation Local Health Unit 4, Prato Tuscan Organization for Transplants Local Health Unit 4, Prato, Greater Central Area
Daniela Bagattini	Provincial Social Observatory of Prato Regional Social Observatory Region Tuscany
Lorella Baggiani	Sector for Family Policies and the protection of minors DG Citizenship Rights and Social Cohesion Region Tuscany
Cristiana Baggione	Diabetes Care Hospital San Giovanni di Dio Local Health Unit 10, Florence
Alberto Baldasseroni	Regional Centre for the Analysis of Data on Occupational and Work-related Injuries and Diseases (CeRIMP) Region Tuscany
Emanuela Balocchini	Prevention and Safety in Living and Working Environments, Food and Veterinary Medicine DG Citizenship Rights and Social Cohesion Region Tuscany

Alessandro Barchielli	Epidemiology Unit Local Health Unit 10, Florence
Simone Bartolacci	Directorate Regional Health Agency of Tuscany
Valentina Barletta	Healthcare Sector Epidemiology Unit Regional Health Agency of Tuscany
Dario Bartolozzi	Department of Infectious Diseases University Hospital Careggi, Florence
Angelamaria Becorpi	Integrated Mother and Child Activities Pathophysiology, Menopause – Cancer Menopause Outpatient Department University Hospital Careggi, Florence
Alice Berti	Social Sector Epidemiology Observatory Regional Health Agency of Tuscany
Sonia Biagi	Sector for Policies for Immigrants, and Interventions for Vulnerable Individuals DG Citizenship Rights and Social Cohesion Region Tuscany
Fabrizio Bianchi	Institute for Clinical Physiology National Research Council Tuscan Foundation “Gabriele Monasterio”, Pisa
Maria Luisa Brandi	Department of Surgery and Translational Medicine Endocrinology and Metabolism Section University of Florence Department of Mineral and Bone Metabolism Disease University Hospital Careggi, Florence
Stefano Bravi	Social Sector Epidemiology Unit Regional Health Agency of Tuscany
Vincenzina Bruni	Faculty of Medicine and Surgery University of Florence
Sandra Bucciantini	Regional Referral Centre for Victims of Violence University Hospital Careggi, Florence
Rodolfo Buselli	Research Centre on Work-related Stress Occupational Medicine Unit University Hospital of Pisa

Rachele Capocchi	Directorate Regional Health Agency of Tuscany
Helen Casale	Sexual Medicine and Andrology Unit Department of Experimental and Clinical Biomedical Sciences University of Florence
Giovanni Castellini	Sexual Medicine and Andrology Unit Department of Experimental and Clinical Biomedical Sciences University of Florence
Anna Maria Celesti	Standing Committee for Gender-related Medical Issues Regional Health Council Region Tuscany
Elisabetta Chellini	Department of Environmental and Occupational Epidemiology Institute for Cancer Research and Prevention (ISPO)
Fiorella Chiappi	Tuscan Association of Psychologists
Luisella Cianferotti	Department of Surgery and Translational Medicine Endocrinology and Metabolism Section University of Florence Department of Mineral and Bone Metabolism Disease University Hospital Careggi, Florence
Francesco Cipriani	Directorate Regional Health Agency of Tuscany
Emanuele Crocetti	Clinical and Descriptive Epidemiology Unit Institute for Cancer Research and Prevention (ISPO)
Monica Da Frè	Social Sector Epidemiology Observatory Regional Health Agency of Tuscany
Alessandro Del Debbio	Psychiatric Unit Local Health Unit 12, Viareggio
Mario Di Fiorino	Psychiatric Unit Local Health Unit 12, Viareggio
Mariella Di Stefano	Tuscan Network for Integrated Medicine
Mariarosaria Di Tommaso	Department of Integrated Mother and Child Care University Hospital Careggi, Florence Department of Health Sciences University of Florence
Valeria Dubini	Obstetrics and Gynaecology Department San Giovanni di Dio Hospital Local Health Unit 10, Florence

Cristina Epifani	Epidemiology Unit Local Health Unit 4, Prato
Massimo Fabbiani	Obstetrics and Gynaecology New Hospital of Mugello Local Health Unit 10, Florence
Eleonora Fanti	Social Sector Epidemiology Observatory Regional Health Agency of Tuscany
Natalia Faraoni	Regional Institute for Economic Planning of Tuscany (IRPET)
Paolo Fedi	Tuscan Network for Integrated Medicine
Alessandra D. Fisher	Sexual Medicine and Andrology Unit Department of Experimental and Clinical Biomedical Sciences University of Florence
Paolo Francesconi	Healthcare sector Epidemiology Observatory Regional Health Agency of Tuscany
Flavia Franconi	Department of Biomedical Sciences University of Sassari Italian Laboratory of Gender Medicine Italian Institute of Biostructures and Biosystems, Osilo-Sassari
Sara Gallicchio	Prevention and Safety in Living and Working Environments, Food and Veterinary Medicine DG Citizenship Rights and Social Cohesion Region Tuscany
Gian Franco Gensini	Faculty of Medicine and Surgery University of Florence Department of Cardiology and Blood Vessels Department of General Cardiology I University Hospital Careggi
Barbara Giomi	Centre for Sexually Transmitted Diseases Department of Surgery and Translational Medicine Dermatology Section University of Florence Local Health Unit 10, Florence
Roberta Giommi	Research and Training Institute, Florence International Institute of Sexology, Florence
Lisa Gnaulati	Directorate Regional Health Agency of Tuscany

Elisa Gualdani	Healthcare Sector Epidemiology Observatory Regional Health Agency of Tuscany
Francesco Innocenti	Social Sector Epidemiology Observatory Regional Health Agency of Tuscany
Francesco Lapi	Healthcare Sector Epidemiology Observatory Regional Health Agency of Tuscany
Isabella Lapi	Child and Adolescent Mental Health Functional Unit, South-Eastern Area Local Health Unit 10, Florence
Claudia Livi	“Demetra” Centre for Medically Assisted Reproduction, Florence
Stefania Losi	Group for Prevention and Treatment of Abuse of Children and Adolescents (GAIA) Meyer Children’s University Hospital, Florence
Silvia Maffei	Institute of Clinical Physiology National Research Council Tuscan Foundation “Gabriele Monasterio”, Pisa
Luca Maggi	“Villamare” Therapeutic and Rehabilitative Community for Eating Disorders, Lido di Camaiore (Lucca)
Mario Maggi	Sexual Medicine and Andrology Unit Department of Experimental and Clinical Biomedical Sciences University of Florence
Paola Magneschi	Planning and Organisation of Care Sector Citizenship Rights and Social Cohesion Region Tuscany
Paola Mantellini	Regional Referral Centre for Cancer Prevention Institute for Cancer Research and Prevention (ISPO)
Andrea Martini	Department of Environmental and Occupational Epidemiology Institute for Cancer Research and Prevention (ISPO)
Teresita Mazzei	Department of Health Sciences Clinical and Oncological Pharmacology University of Florence
Nadia Olimpì	Social Sector Epidemiology Observatory Regional Health Agency of Tuscany

Linda Pannocchia	“Villamare” Therapeutic and Rehabilitative Community for Eating Disorders, Lido di Camaiore (Lucca)
Antonio Panti	Regional Health Council Region Tuscany
Simone Parri	Department of Surgery and Translational Medicine Endocrinology and Metabolism Section University of Florence Department of Mineral and Bone Metabolism Disease University Hospital Careggi, Florence
Valentina Pedani	Provincial Social Observatory of Prato Regional Social Observatory Region Tuscany
Adriano Peris	Anaesthesia and Emergency Resuscitation, and Regional Referral Centre for ECMO University Hospital Careggi, Florence Tuscan Organisation for Transplants
Anna Pierini	Institute of Clinical Physiology National Research Council Tuscan Foundation “Gabriele Monasterio”, Pisa
Federica Pieroni	Tuscan Foundation “Gabriele Monasterio”, Pisa
Laura Policardo	Healthcare Sector Epidemiology Observatory Regional Health Agency of Tuscany
Monia Puglia	Social Sector Epidemiology Observatory Regional Health Agency of Tuscany
Matilde Razzanelli	Healthcare Sector Epidemiology Observatory Regional Health Agency of Tuscany
Gianpaolo Romeo	Regional Centre for the Analysis of Data on Occupational and Work-related Injuries and Diseases (CeRIMP) Region Tuscany
Elio Rossi	Tuscan Network for Integrated Medicine
Franca Rusconi	Epidemiology Unit Meyer Children’s University Hospital, Florence

Giuseppe Seghieri	Centre for Studies on Gender Health Local Health Unit 3, Pistoia Healthcare Sector Epidemiology Observatory Regional Health Agency of Tuscany
Caterina Silvestri	Social Sector Epidemiology Observatory Regional Health Agency of Tuscany, Florence
Donatella Talini	Regional Centre for the Analysis of Data on Occupational and Work-related Injuries and Diseases (CeRIMP) Region Tuscany
Zelinda Tredici	Department of Sciences for Women's and Children's Health University of Florence
Paola Trotta	Department of Addiction Local Health Unit 10, Florence
Lucia Turco	Centre for Studies on Gender Health Local Health Unit 3, Pistoia
Cristina Vassalle	Institute of Clinical Physiology National Research Council Tuscan Foundation "Gabriele Monasterio", Pisa
Caterina Teodori	Group for Prevention and Treatment of Abuse of Children and Adolescents (GAIA) Meyer Children's University Hospital, Florence
Donata Villari	Department of Urology 2 Urology Clinic University of Florence University Hospital Careggi, Florence
Fabio Voller	Social Sector Epidemiology Observatory Regional Health Agency of Tuscany
Giuliano Zuccati	Centre for Sexually Transmitted Diseases Department of Surgery and Translational Medicine Dermatology Section University of Florence Local Health Unit 10, Florence
Alfredo Zuppiroli	Healthcare Sector Epidemiology Observatory Regional Health Agency of Tuscany, Florence

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Foreword

In reality, until a few decades ago, medical books described disease development in men and women based on the study of genetics, to provide clarity and understanding of the diversity that exists between the sexes. However, knowledge of genetic diversity has yet to provide substantial change in both the clinical description and treatment of many disease states.

Scientific knowledge has increased exponentially, and with it, the awareness that the role of gender, or better, the continuum of human sexuality, has profound influence. Therefore, it would be much more appropriate to speak of gender identity and its impact on the practice of medicine and the construction of the “health system”.

Our book presents the results of the collaboration of a large and extremely experienced group. It is edited and published by the Regional Health Agency of Tuscany and is based on the concerted efforts of a working committee of Tuscan experts, under the direction of Annamaria Celesti, a gynaecologist, who convinced the Tuscan Councillor for Health to include gender issues in the Tuscan Health Plan.

Dr. Antonio Panti
Vice President
Regional Health Council
Region Tuscany

Introduction

For too long diseases, their prevention and treatment have been studied mainly on case studies of male gender only, underestimating the hormonal-biological and anatomical peculiarities typical of women. Gender medicine is called upon to limit inequality in studies, care and treatment, which until now have been borne by women, not building a female-oriented and male-oriented medicine, but applying the concept of diversity to ensure everyone, women and men, the best possible treatment as a function of gender specificity. For this reason, gender medicine must not be a specialty in its own right, but a transversal integration of specialty and medical skills, so as to form a culture and treatment of the individual that keeps in mind gender differences, not only in terms of physiological and anatomical differences, but also of functional-biological, psychological, social and cultural ones, as well as of course of response to treatment. Therefore, gender medicine is now a requirement of the health service and as such, it is necessary to consider some organisational aspects of services which take account of gender differences. To this end, Region Tuscany, first in Italy, established within the Regional Health Board, clinical government unit, the “Permanent Commission for issues of gender-based medicine”.

The Commission is formed by thirty professionals working in various capacities in Tuscan health care and who have long been engaged in their course on issues related to gender differences, working for thematic groups: from research and drug testing, to cardiovascular and metabolic diseases. From health determinants to preventive medicine, to safety at work. From identifying indicators of gender equity in the organisation of the services, to the architectural design of healthcare facilities in a gender perspective.

Among the tasks of the Commission, as well as to identify how many and which gender differences are due to factors inherent to the gender biology and pathophysiology of the disease, and how many are to be ascribed to society and to the health care system, highlighting how much this difference costs, there is the task of finding optimal paths to sensitise and train health care workers to the gender determinant and to develop investigations and inquiries designed to highlight differences in risk factors, prevention and treatment, pharmacological and non-pharmacological, of emerging diseases among the female population, in order to arrive at recommendations or guidelines on prevention, including diagnosis, treatment and rehabilitation in a gender perspective. For this reason, the Commission decided to promote, in collaboration with the Regional Health Agency, this document on “Gender Health” in Tuscany.

Document which, thanks to the work of a large and prepared group of experts, presents a series of interventions related to current scientific knowledge on the different gender behaviour and the effect of these on health and illness, epidemiologically and clinically, with the goal that it will be useful to all professionals, in order to measure and plan public health interventions, applying them to the theme of gender.

Dr. Anna Maria Celesti
Coordinator
of the Regional Centre for Gender Medicine
Region Tuscany

Chapter 1

**About the significance
of “gender medicine”**

1. About the significance of “gender medicine”

Flavia Franconi, University of Sassari

Giuseppe Seghieri and Lucia Turco, Local Health Unit 3, Pistoia

Francesco Cipriani, Regional Health Agency of Tuscany, Florence

The term gender is frequently used interchangeably with sex, although they are two different concepts: so this is the reason why the term gender medicine generates some misunderstandings.

According to the first misunderstanding, gender medicine is related to medical and clinical situations strictly related to sex: in other terms it would be a medicine that is mainly involved with illnesses that are closely related to being a man or a woman. This is not what gender medicine is commonly meant for: the real definition is, on the contrary, that of a medicine which is related to differences about how common illnesses such as, atherosclerosis or conversely neoplasms, are differently presented, diagnosed, or treated in men, compared to women.

Therefore gender medicine is not ‘women medicine’ but in fact a medicine which considers the wide spectrum of all differences according to any aspect of gender instead of simply referring to sex. In other words is not a medicine of XX as opposite to XY individuals, embracing, on the contrary, the large concept of gender. The latter considers all the aspects of the problem. It represents the medicine of the differences: differences as to pharmacokinetics or pharmacodynamics, epidemiology, physiology, but also as to sociology, psychology, equity to health systems opportunities and so on. It is therefore easy to guess that it often becomes a ‘women medicine’ simply because medicine has in the past, been considered under the lenses of a male paradigm. In this respect several clinical trials have accrued evidence-based clinical conclusions after having enrolled a population represented by a study population enriched by men (Franconi F et al. 2011). And this happens for pathologies which encompass common clinical situations such as heart diseases, diabetes, hypertension, or neoplasms. This is even more contradictory when one considers that these chronic pathologies are more frequent in the elderly when women are more frequently involved since, as known, women have a life expectancy that in Western countries is longer than that of men.

Remaining in the field of clinical pharmacology, there is another aspect regarding the gender difference in the frequency of adverse events or simply of side effects after drug medication. For instance QT interval becomes longer among fertile women than among men: and as a consequence of this, women will experience a higher rate of iatrogenic long QT syndromes. In conclusion, gender medicine is facing the tremendous task of unveiling what is masked under the simple fact of being a man or a woman in terms of health and in particular in terms of quality of life. In summary, what is becoming more and more evident is in fact, that women are living longer but they will be experiencing a worse quality of life compared to men (Oksuzyan A et al. 2009).

This is, in summary the challenge expressed by gender medicine, which, as noted above has, due to its deep intrinsic nature, a multidisciplinary approach: basic medical sciences are interwoven with sociological and political aspects and from this multifactorial approach is rising a new discipline which suggests a new definition (Franconi F et al. 2012). We have observed that sex medicine is inadequate compared to the more appropriate definition of gender medicine. Consequently a further adjustment should be made: this is to overcome the second misunderstanding, instead of gender medicine it seems more appropriate to introduce the term ‘gender health’: this new definition will more accurately contain not only pharmacology, epidemiology, basic sciences of medicine, but also human and political sciences, all of which should be used to better understand what gender means in terms of public health. Gender health, more than a new branch of medical sciences, represents in this manner, a new concept which concerns physicians, epidemiologists, sociologists, public administrators or those generically involved in issues of health policy.

In Tuscany we have one of the most advanced public health systems in Europe, and both quality of life and life expectancy in our Region are scoring high in the Western scenario and with such premises this is becoming a good opportunity that Regional Health Agency (Agenzia Regionale Sanità Toscana) has taken up to better to clarify and understand what gender health means in this Region, taking into account several aspects which are involved with such an issue. From this effort we will have the tools to improve our knowledge about gender differences in our territory and, finally, will be giving policy makers all the tools to undoubtedly improve, both the health and the quality of life of women and men of our Region.

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Chapter 2

A general overview

Demographic trends

Education and work

**Mortality rates of women
in 1987-2010**

Health perception

2. A general overview

2.1 Demographic trends

Lisa Gnaulati

Regional Health Agency of Tuscany, Florence

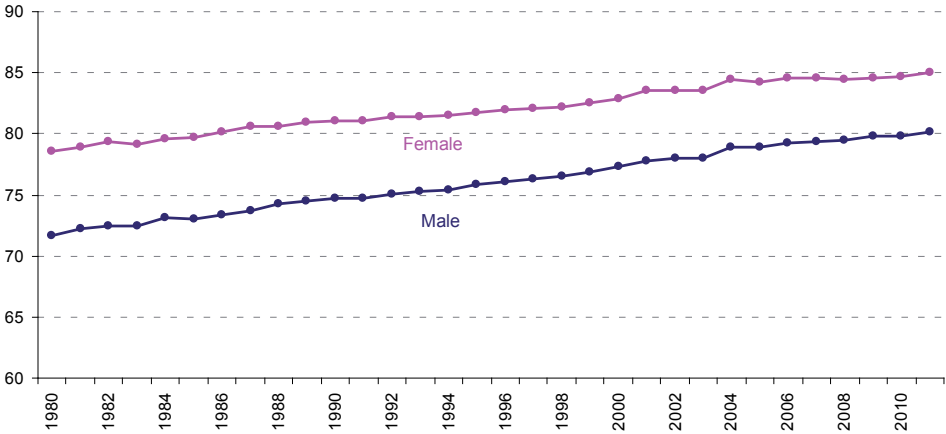
Residents in Tuscany as of January 2012 are 3,667,780, of which 48% men and 52% female. Over the past 150 years, the Tuscan population has nearly doubled. In 2011, the deaths exceeded births by about 10,000 units, but despite this, the Tuscan population continues, in absolute terms, to grow thanks to the increasing presence of foreign population, which in a decade has more than tripled, with an incidence that has risen from 3.1 to 9.7 per cent of foreigners out of the population surveyed. In 2011, the proportion of foreigners is two points higher than the national average and Tuscany is one of the regions with the highest presence of foreigners in Italy. Foreigners are a young population and most of them come from countries with strong migratory pressure. The prevalence of foreigners is higher in the resident population of women, from 20 years of age and up.

The age structure of the population of Tuscany shows that, although slightly, more males are born than females, but around 40 years of age, females surpass males, outnumbering them with inexorable progression as their age progresses, so much that those who come to exceed 80 years are found to be double the number of males. For both genders, young adults (< 25 years) are numerically less than the population over 65 years, especially in the female population because, as is well known, women live longer than men. In particular, the Tuscan population is among the oldest in Italy (183 elderly every 100 young individuals in 2011) and over the years, the old-age indicator has shown consistently increasing values. Among the elderly population, the female component is predominant: a Tuscan woman at birth can expect to live 85 years, while a Tuscan male 80 years (slightly higher values than the national average). Women live about 5 years more than men. Over the last 30 years, life expectancy at birth has increased in both genders, three months each year nationwide, thanks to the progressive reduction of mortality in older age (**Figure 2.1**). It is mainly women over 65 years that benefit from the increased rate of survival, although to a lesser extent after 80 years.

While the years of life increase, births decrease. Today in Tuscany the average number of children per woman is 1.4, below the threshold that would guarantee the generational change (2 children/woman), and the recent trend to recovery is linked to increasing migratory phenomena. In 2011, in Tuscany the birth rate was 8.5 birth per 1,000 inhabitants: Tuscany is now in sixth place among the regions with the lowest birth rate. Women have fewer children and become mothers later; in 2011, the average age at

childbirth is 31.6 years, with a difference between Tuscan and foreign women: the latter have more children and give birth before, at the average age of 27.9 years compared to 32.7 years of Tuscan women.

Figure 2.1
Life expectancy at birth by gender, years 1980-2011



2.2 Education and work

Natalia Faraoni - IRPET

The gender gap is crucial to understanding change in education and the labour market. As is known, Italy holds the lowest positions in Europe with regard to female employment rates, but there are stark differences amongst generations, between the centre and suburbs, or North and South. Tuscany is a “middle region”, being closer to European standards when compared to southern regions, but with lights and shadows due to its peculiarities.

In the last few decades, the level of females in education has substantially grown: today, Tuscan women between the ages of 20-34 with advanced level qualifications is almost twice the corresponding group of men. On the other hand, the percentages of graduates do not differ, even though females prefer liberal arts courses (Pescarolo 2011).

Despite a higher school performance from girls, Tuscan early school leavers (15-24 years old) are 16.6% in 2011, a higher percentage compared to other northern Italian regions. Girls are less than boys (33%), but nearly half of them risks to be left out of the labour market (IRPET 2013).

Nevertheless, increasing women’s schooling is changing the way they take part in the world of work. In fact, evidence points out that a high-level of education raises female propensity to work (IRPET 2013).

Another sign of the gender gap can be found in the socio-demographic group NEETs, namely young people Not (engaged) in Education, Employment or Training. Women prevail over men in cohorts with more than 24 years of age and they increase with age. This aspect could be explained in the light of female employment. Compared with men, Tuscan (and Italian) women work more intermittently, are often underpaid, and do jobs that are far below their level of education. In particular, female workforce participation is related to fertility: in 2011, the employment rate of women 25-49 years old is 79.3% for those without children, 71.5% for those with one child, 61.1% when the children are two, and 46.1% when they are three or over; yet, the employment rate of female graduates and postgraduates tends to be higher in each group.

However, greater educational equality does not guarantee equality in employment outcomes. On average, a female’s total income is 76% of men’s in Italy, and 70.3% in Tuscany.

The economic crisis has affected the economic sectors with a higher proportion of males in its workforce (e.g., the manufacturing industry), a trend that sharpened gender sectoral segregation in the world of employment. As is known, women are over-represented in mid-skill occupations, i.e. among clerks, service workers, and shop and sales assistants (CNEL 2012).

Beyond the effects of the economic crisis, women continue to face many obstacles to enter employment and to stay there. Therefore, some policy measures in support of female participation in employment seem urgent and essential.

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2.3 Mortality rates of Tuscan women in 1987-2010

Elisabetta Chellini, Andrea Martini - Tuscan Regional Mortality Registry - ISPO

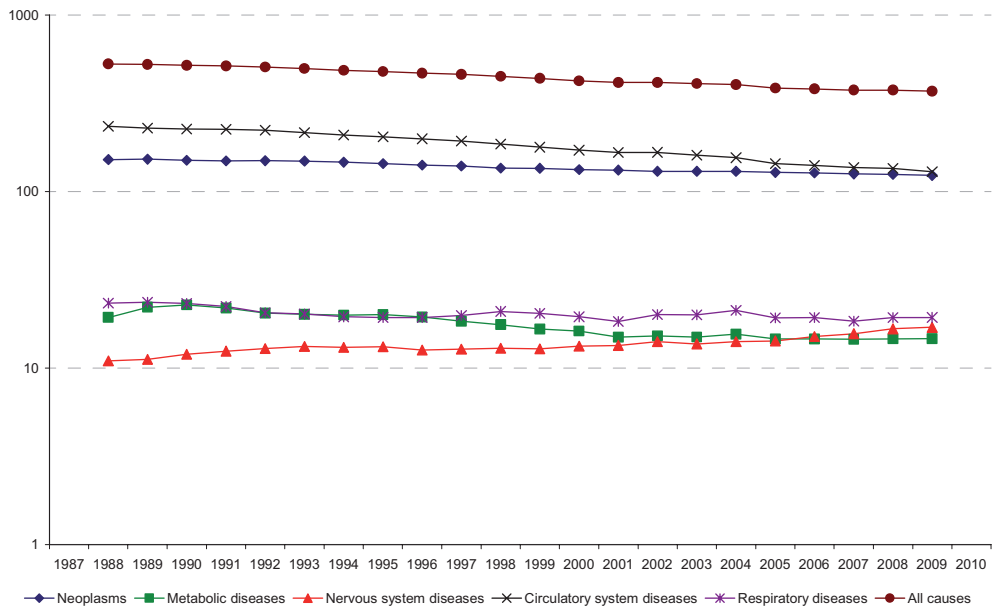
Mortality rates for all and specific causes of death in Tuscan women during 1987-2010 are described. More than 20,000 female deaths are observed every year: in 2010 there were 3,000 more deaths than those registered in 1987 (+17.1%), while in men the number of deaths remained stable in the study period. Nevertheless, the standardized (European standard population) mortality rates for all causes have been decreasing in both genders since the beginning of the period: -30% in women from 529.2 (CI95%: 524.4-534.0) in 1987-1989 to 369.8 (CI95%: 366.4-373.2) per 100,000 in 2008-2010; in women from 937.2 per 100,000 (CI95%: 929.5-944.9) to 589.3 (CI95%: 584.3-594.4) in 1987-1989 and 2008-2010 respectively. This phenomenon is due to the registered ageing of the Tuscan population, which is more common in women: the life expectancy at birth increased from 81 years in 1987 to 84.6 in 2010 in women, and from 79.6 in 1987 to 80.6 in 2010 in men.

The main causes of death, in both genders, are diseases of the circulatory system and neoplasms, whose standardized rates decreased in the period studied, as well as the standardized rates of other groups of diseases (such as those of the respiratory and digestive systems, mentioned for their relevance), with the exception of mental health disorders and diseases of the nervous system and sense organs (**Figure 2.2**). In particular, senile dementia (93.1% of the mental disorders) and Alzheimer disease (62.9% of the nervous system diseases) are increasing throughout the period due to the population ageing.

Among the specific causes of death, lung cancer mortality is increasing in women as a consequence of the increasing trend in their smoking prevalence. On the contrary, in men, both smoking prevalence and lung cancer mortality rates are decreasing. Mortality for pancreatic cancer is also increasing in both genders, probably related to the larger availability of diagnostic procedures for this cancer in more recent years.

Geographical differences in mortality rates continue to be studied, likely due to different diffusion of preventive, diagnostic and therapeutic actions assured by our Regional Health System in the observation period. In the future a reduction of these differences is expected, but the increasing numbers of immigrants from less developed countries will probably change the expected mortality trends by specific causes in Tuscan residents.

Figure 2.2
Trends of standardized (standard: European population) three-year moving average mortality rates per 100,000 on logarithmic scale for all causes of deaths and groups of diseases in the period 1987-2010, in Tuscan females



2.4 Health perception

Fabio Voller, Stefano Bravi - ARS

An investigation of health conditions of a population brings about a very complex problem; the World Health Organisation (WHO) defines health as a state of “physical and mental well-being”, highlighting both the objective (presence or absence of diseases) and the subjective component (the way of living and perceiving the disease itself), Both these aspects are completely different from a gender perspective, because as we all know, women in Italy live longer than men, but suffer from more illnesses, with a higher percentage of disabilities, particularly starting from the post-menopausal period,

For years the ISTAT Multiscopo survey¹ has been reserving some questions of their questionnaire on the (self-referred) health conditions of the surveyed sample, on the perception of health and on the satisfaction of health, As far as the objective component of a health issue is concerned, the question asked is if they are currently suffering from a chronic illness,

As expected, the perception of one’s own health worsens with age, both in Tuscany and Italy (**Table 2.1**): “only” 40,6% of those over 60 years old (36,4% in Italy) claim to be completely satisfied with their health, In Tuscany, in line with what we know relating to the indicators of the elderly population, the perception of health in those over 60 is better when compared to that of Italians in the same age,²

Approaching the gender-related differences, we can note that the percentage of women that respond positively with regards to their perception is always significantly lower than that of men both in Tuscany and Italy, particularly for those over 40, With regard to the satisfaction of their health, a gradient associated with age can be confirmed that shifts the judgement almost completely positive of the younger age groups to that more problematic related to the own health in the adult and elderly age groups, As far as the gender-related differences on the perception of one’s own health are concerned, the male gender is more satisfied, In terms of the objective condition of health, almost 40% of residents in Tuscany claimed to be affected by at least one of the major chronic diseases detected (selected from a list of 15 illnesses or chronic conditions) and the figure has remained stable in recent years, Chronic degenerative diseases are more common in the elderly age group: already in the 50-60 age range, more that 50% are affected and those over 75 reach nearly 90%, As for the perception of health, the disadvantage of the female gender emerges also from the analysis of data relating to the population that suffers from at least one chronic illness, Women are in fact more often affected, in particular those over 40, More than 20% of the population stated that they are affected by two or more chronic diseases, with marked gender-related differences beginning from

1 ISTAT Multiscopo survey “Aspects of daily life”, Various years,

2 National observatory on health in Italian regions, Osservasalute Report 2012,

those over 40, Amongst the over 75 age group, the comorbidity amounted to almost 70% (60% amongst men and 75% amongst women), The number of people that, whilst claiming to be affected by at least one chronic disease, perceive themselves to be in good health, is over 40%,

Table 2.1
Perception of their health – Tuscany and Italy 2011

Age group	Opinion	ITALY			TUSCANY		
		Males	Females	Total	Males	Females	Total
0-19	Excellent	49,7	48,1	48,9	49,8	44,8	47,3
	Good	45,3	46,6	46	44,5	50,9	47,6
	Neither good nor bad	4,4	4,9	4,6	5,1	3,9	4,5
	Poor	0,5	0,4	0,4	0,6	0,4	0,5
	Extremely poor	0,1	0	0,1	0	0	0
20-39	Excellent	29,3	25,4	27,4	28,8	21,4	25,1
	Good	60,2	61	60,6	63,4	67,2	65,3
	Neither good nor bad	9,5	12,5	11	7,1	9,4	8,2
	Poor	0,7	0,9	0,8	0,3	1,2	0,8
	Extremely poor	0,2	0,2	0,2	0,4	0,7	0,5
40-59	Excellent	13,9	10,8	12,3	10	9,7	9,8
	Good	61,1	58,2	59,6	66,6	64	65,3
	Neither good nor bad	22	26,8	24,4	19,5	22,1	20,8
	Poor	2,7	3,7	3,2	3,6	3,4	3,5
	Extremely poor	0,3	0,5	0,4	0,3	0,7	0,5
60 and over	Excellent	3,7	2,2	2,9	3,6	2,6	3
	Good	38,9	29,4	33,5	44,8	32,1	37,6
	Neither good nor bad	43,7	49,9	47,2	41,1	45,3	43,5
	Poor	11,4	15,4	13,6	8,5	17,8	13,8
	Extremely poor	2,4	3,1	2,7	2	2,2	2,1
All age groups	Excellent	22,7	18,7	20,7	20,0	15,5	17,7
	Good	52,4	48,5	50,4	56,1	52,2	54,1
	Neither good nor bad	20,4	26,0	23,3	19,6	24,0	21,9
	Poor	3,8	5,8	4,8	3,6	7,2	5,4
	Extremely poor	0,7	1,1	0,9	0,7	1,1	0,9

Chapter 3

Lifestyles

Tobacco

Alcohol

Diet

Physical activity and sport

Body weight and obesity

3. Lifestyles

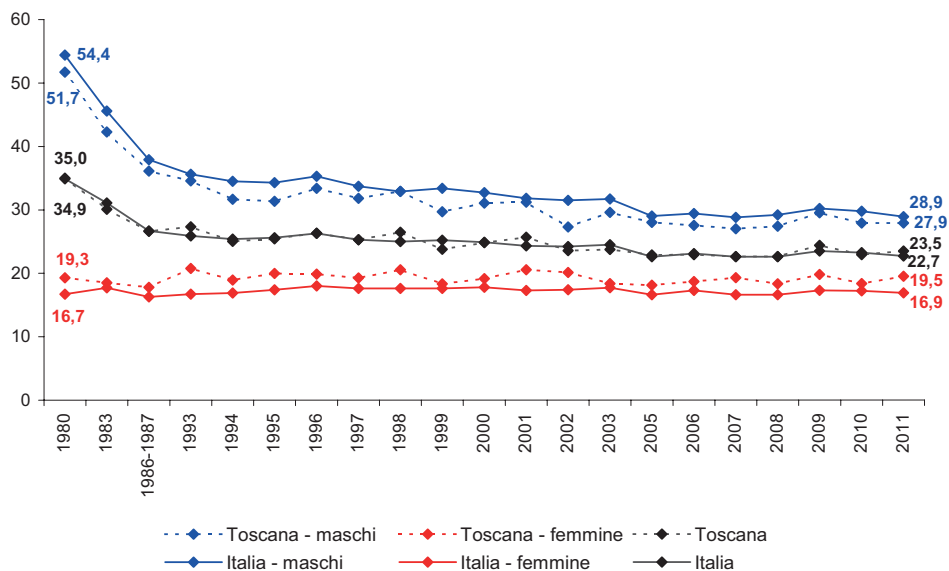
Nadia Olimpi, Stefano Bravi, Matilde Razzanelli - Regional Health Agency of Tuscany, Florence

3.1 Tobacco

Although tobacco use is more prevalent in men, the difference between genders in adults is currently very small in countries such as Austria, Denmark, Ireland, Norway, the Netherlands, Sweden and the United Kingdom. In Sweden and Norway, the prevalence is even higher in women (WHO Europe, Tobacco - Facts and figures). In younger people, in WHO regions, the gender gap is smaller than that observed in adults. Tobacco use among women is a complex phenomenon, which is influenced by factors such as marketing strategies, globalization, urbanization and changes in social conditions and roles (Amos A et al., 2012). In Tuscany, as in the rest of Italy, smoking has long been in decline: the proportion of smokers has decreased from 35% in 1980 to 23.5% in 2011. The decrease in smoking is mainly due to those who have stopped smoking. The trend of prevalence in genders shows some differences in the examined period 1980-2011, similar to regional and national levels (**Figure 3.1**). Males already extensively experimented the habit in the past decades and, over the years, have been stopping. In Tuscany the amount of male smokers has almost halved (from 51.7% to 27.9%). Females, on the contrary, have begun smoking more recently, and have reached a stable prevalence: the proportion of female smokers was 19.3% in Tuscany in 1980 and 19.5% in 2011. Smoking is however less common in females than males (in Tuscany, 19.5% vs 27.9%). Consumption levels are also lower in females. In Tuscany, in 2011, the prevalence of smoking is consistent with the national average (23.5% vs. 22.7%), as is the average daily consumption of cigarettes (about 13). If we consider the trends over the years, the prevalence in males is slightly lower compared to national data, while in females the percentage of smokers is higher than the national average (Figure 1). The pattern of smoking-related deaths in Tuscany reflects the historical trend: the reduction of smoking in males corresponds to a decrease in smoking-related deaths, while in women, smoking-related deaths have not reduced. In particular, there has been an upward trend in females in terms of smoking-related deaths due to cancer in the period 2000-2008 (Ars elaborations on Istat data with Sammec program). Nearly all tobacco consumers start smoking at a young age. It has been estimated that about 88% of adults smokers tried smoking their first cigarette before the age of 18 (U.S. Department of Health and Human Services, 2012). In 2011 in Tuscany, about 24.1% of adolescents aged 14-19 years were smokers, a greater proportion compared to 2005 (19.2%) and 2008 (23.4%). Unlike adults, smoking in Tuscan adolescents is more similar in genders terms, and there also seems to be a greater propensity in females for this behaviour: in 2011, in Tuscany

22.6% of boys and 25.7% of girls aged 14-19 years smoked. As for adults, on the other hand, males have higher levels of consumption (Studio Edit, Ars Toscana, 2011).

Figure 3.1
Proportion of smokers (%) by gender, Tuscany and Italy, 1980-2011 - Age ≥ 14 years (for 1986-1987: age ≥ 10 years) - Source: elaborations by Ars based on Istat data



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3.2 Alcohol

The literature on alcohol use in adults suggests that the physiological sensitivity in females at lower amounts of alcohol, the greater disapproval of society towards drinking and the increased risk of physical and sexual assaults are preventive factors of heavy use of alcoholic beverages. Females are also less likely to have characteristics associated with excessive alcohol consumption, such as aggression, substance use to reduce stress, looking for thrills and antisociality (Schulte MT et al., 2009; Nolen-Hoeksema S, 2004).

In Tuscany, according to Istat data of 2011, the proportion of those who drink at least one alcoholic drink is equal to 67.3%, with a higher prevalence in males (81.9% vs. 54.0%), consistent with the national figure. The proportion of drinkers in Tuscany, as in Italy, is decreasing, and the gender difference remains over the years. In our region, beer is the preferred alcoholic beverage among males up to 39 years old, and after, in later life, it is wine. In females, by the age of 20 years old, wine is the favourite alcoholic beverage. In Tuscany, 25.3% of the population (28.8% in Italy) drink out of meal times, 5.4% (7.8% in Italy) are binge drinkers (i.e., consumers of 6 or more units of alcohol on a single occasion) and 9.4% (7.3% in Italy) are at risk drinkers (consumers of more than 40 g of alcohol/day for males and more than 20 g alcohol/day for females). We found differences between genders also regarding some of the latter behaviours: drinking out of meal times is more prevalent in men, as is binge drinking. At risk drinking, according to the consumption of grams of alcohol/day, is instead similar in males and females (**Table 3.1**). In Tuscan adolescents aged 14-19 years, males also seem to have a greater propensity to alcohol use. With regard to binge drinking, the gap between the genders is large (concerning 40.1% of males and 29.5% of females), but for some behaviours, however, gender differences are minimal, as for those who have consumed alcoholic beverages (74.8% of males and 69.9% of females reported having drunk at least one alcoholic beverage in the last month) and have been drunk (53.8% of males and 48.7% of females reported having had at least one episode of drunkenness in the past year). In both genders, alcohol consumption is concentrated in the days of the weekend. In younger people, therefore, we found some kind of greater homogenization of consumption in the genders. Aperitifs and sparkling wine are the preferred alcoholic beverages of female teenagers of all age groups, while in males these are the drinks of consumer socialization, but beer then becomes the preferred alcoholic beverage (Ars Toscana, 2011). The Tuscan alcoholic consumption pattern still seems mostly to follow the traditional model which is typical of the Mediterranean area, characterized by drinking at meals, but among young people a consumption pattern typical of northern European areas is unfortunately widespread: large amounts of alcohol (especially aperitifs, spirits and beer) consumed on few single occasions.

Table 3.1
Consumers (%) of alcoholic beverages, drinkers out of meal time, binge-drinkers and at risk drinkers* - Tuscany and Italy, 2011 - Source: elaborations by Ars based on ISTAT data

Territory	Consumers of at least one alcoholic beverage in a year (age ≥ 14 years)			Drinkers out of meal time (age ≥ 14 years)			Binge drinkers (age ≥ 11 years)			At risk drinkers* (age ≥ 14 years)		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
Tuscany	81,9	54,0	67,3	35,2	16,0	25,3	7,8	3,1	5,4	9,0	9,8	9,4
Italy	82,3	53,6	67,4	41,2	17,2	28,8	12,5	3,4	7,8	7,7	7,0	7,3

* At risk drinkers: consuming more than 40 grams of alcohol a day for males and more than 20 grams of alcohol per day for females.

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3.3 Diet

Studies in modern Western societies have reported relationships between genders and consumption of specific foods: meat (especially red), alcoholic beverages and generous portions are associated with males, while vegetables, fruits, fish and sour dairy products (such as yogurt, ricotta) are associated with female diet patterns. Females, usually, seem to prefer healthier foods and to give greater importance to choices and behaviours with respect to food for maintaining good physical shape. This female attitude is reflected in the nutritional pattern. A higher intake of fruits and vegetables is one of the elements that characterizes the dietary profile of the females (Arganini C et al., 2012). Over the years, according to ISTAT Multipurpose Survey, in the population aged 3 years old or over, in Tuscany, as in Italy, some dietary habits have been changing: dinner tends to be the most important meal of the day; the habit of having lunch at home on working days is less common; the percentage of subjects who have the habit of making a proper breakfast has been increasing. These behavioural changes have been observed in both males and females. Overall, then, food habits in both genders seem to slowly and gradually change, probably to fit in with the new daily customs of the family. These changes in females are more pronounced in Tuscany in comparison with national data. In Tuscany, some aspects of diets are different in the genders. Consumption of bread, pasta and rice, cured meats, beef and pork is more common in men, while milk, vegetables (leafy vegetables, cooked and raw including spinach, salads, chicory, cabbage, broccoli or other vegetables, as well as tomatoes - not canned, eggplant, peppers, fennel, zucchini, artichokes, carrots, pumpkins, cauliflower, peas or other fresh pulses), and fruits are more typical of women's diets, who pay greater attention to the use of salt and/or salty foods (**Table 3.2**). The differences between genders in consumption of fruits and vegetables are confirmed by the data on the overall number of servings per day: in Tuscany 44.2% of females consume 3 or more servings per day of these foods, compared to 33.5% in males. It should be noted, however, that the intake of these foods is still very far from what is recommended in national guidelines, which advice consuming five or more portions daily (INRAN, 2003). Females follow the recommendation more than men: in the Tuscan population of 3 years old or over, according to Istat, 4.2% vs. 2.2% (in Italy, 4.9% vs. 3.4%). Consuming adequate levels of fruits and vegetables remains a critical issue with respect to eating habits, in Tuscany as in Italy. We have observed gender differences in eating behaviour also in the younger population. In 2012, Tuscan girls 8-9 years old have better habits regarding consumption of fruits, vegetables, sugar-sweetened beverages, and nutritional adequacy of the mid-morning snack (Lazzeri G et al., 2012). In Tuscany in adolescents of 11, 13 and 15 years old, daily consumption of fruits and vegetables are more prevalent in females (29% of males and 40% of females aged 15 years old eat fruits every day) (Giacchi MV et al., 2010).

Table 3.2
Percentage of subjects for consumption of certain foods, by gender (age ≥ 3 years) - Tuscany, 2011 - Source: elaborations by ARS based on ISTAT data

Foods	Tuscany		
	Males	Females	Total
Bread, pasta, rice at least once a day	90,0	84,0	86,9
Cured meats at least a few times a week	64,9	52,9	58,6
White meat at least a few times a week	86,6	85,0	85,8
Beef at least a few times a week	75,6	69,2	72,3
Pork at least few times a week	56,1	46,7	51,1
Milk at least once a day	61,7	69,4	66,0
Cheese at least once a day	19,8	21,2	20,5
Eggs at least few times a week	56,1	55,9	56,0
Leafy vegetables raw and cooked (spinach, salads, chicory, cabbage, broccoli) at least once a day	53,0	60,0	56,7
Tomatoes (not canned) eggplant, peppers, fennel, zucchini, artichokes, carrots, pumpkins, cauliflower, peas and other fresh pulses at least once a day	47,6	54,6	51,3
Fruit at least once a day	74,7	81,2	78,4
Dried or canned pulses at least a few times a week	49,4	46,8	48,1
Fish at least a few times a week	57,9	59,0	58,5
Salty snacks at least few times a week	19,1	15,9	17,4
Sweet at least a few times a week	48,4	47,1	47,7
Cooking with olive oil and vegetable fats	99,4	99,6	99,5
Raw condiment with olive oil and vegetable fats	99,2	99,0	99,1
Pay attention to the consumption of salt and / or salty foods	67,2	74,7	71,1
Use of iodine-enriched salt	47,6	50,8	49,2

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3.4 Physical activity and sport

Given the importance for one's health of an active lifestyle, scientific literature has questioned the factors that may be related to the practice of physical activity. Gender seems to be one of these factors and, in particular, being male, along with other variables, such as confidence in physical abilities (self-efficacy), having already practiced physical activity and family supporting adolescents are positively associated to physical activity (Bauman AE et al., 2012). The ISTAT Multipurpose Survey data of 2011 referring to the Tuscan population of 3 years old or over show that only 23.5% play sport regularly (22% in Italy), while 36.5% (40% in Italy) do not practice any kind of physical activity. Females are more sedentary: in 2011, in Tuscany, 40.7% of females and 32% males did not practice any kind of physical activity (**Table 3.3**).

In both genders, the Tuscan population is a little less sedentary than the general population in Italy. The recommended level of physical activity for the age group of 5-17 years old is at least 60 minutes of moderate to vigorous intensity physical activity daily (WHO, 2010), an uncommon practice according to the data.

In 2012 in Tuscany, in fact, only 14.9% of children of about eight years old did at least an hour a day of physical activity for 5-7 days per week (16.1% in Italy), with higher proportion in males (16.7%) compared to females (12.7%). In children, males' greater propensity to movement is confirmed. They do physical activity more days than females (Lazzeri et al., 2012).

In Tuscany, in 2011, in adolescents aged 14-19 years, only 6.8% reached the recommended amount of physical activity of at least an hour a day every day, 8% in males and 5.5% in females. The prevalence increases to 69.8% in males and 46.6% females if we consider the daily practice of at least one hour of physical activity for three or more days a week. In this age-group, boys also do more exercise than girls. Data on playing sport confirm males' greater tendency to have an active lifestyle: 84.8% of males 69.5% females have practiced some sport in the last year. The preferred sport of males is football/soccer, followed by gym, basketball and swimming, while females prefer gym and dance/aerobics, followed by volleyball and swimming (Ars Toscana, 2011).

In the age group 18-69 years, analysis by gender shows that even in adults gender differences are confirmed: 25.5% of men (29% in Italy) and 30.1% of women (32% in Italy) are sedentary. A sedentary lifestyle, is also more common with increasing age, in people who have the lowest level of education and with many economic difficulties (Cecconi R et al. 2010). Overall, the practice of physical activity should be increased in Tuscany, as in Italy. Habits of females are more critical for this behaviour, along with children, the elderly, people with lower educational levels and economic difficulties.

Table 3.3
Percentage of subjects who play sports or do some physical activity and those who do not, by gender (age \geq 3 years) – Tuscany and Italy, 2011 - Source: elaborations by Ars based on ISTAT data

Territory	Play sport		Practice some physical activity*	Do not practice any kind of physical activity
	regularly	occasionally		
Tuscany				
Males	28,5	10,4	29,0	32,0
Females	19,0	6,7	33,6	40,7
Total	23,5	8,5	31,4	36,5
Italy				
Males	26,1	12,6	26,1	35,1
Females	18,1	7,9	29,4	44,6
Total	22,0	10,2	27,8	40,0

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3.5 Body weight and obesity

Globally, it was estimated that, in 2008, the average value of BMI in adults, standardized by age, was 23.8 kg/m² in men and 24.1 kg/m² in women. The value was higher in males than females in the regions with high income, while the opposite trend was observed in most areas with low- and middle-incomes (Finucane MM et al., 2011). In high-income countries, and, according to geographical classification, in the regions of Europe, Central Asia and of OECD (Organization for Economic Co-operation and Development), overweight is more prevalent in males; low, middle and high income group countries have a greater overall prevalence of female obesity compared with male obesity (Kanter R e Caballero B, 2012).

According to ISTAT Multipurpose Survey data, in 2011, in Tuscany, the overweight subjects represent 35.8% of the population of 18 years old or over, with marked differences in the two genders: 44.2% in males and 28.2% in females. Prevalence of obesity is 8,5%, 9,4% in males and 7,7% in females. Overweight in adults, then, in Tuscany, as in Italy, affects mostly the male population, while obesity has few differences in the two genders. If we consider underweight, the prevalence rates are higher in men than in women (respectively, 4% vs. 0.6%) (**Table 3.4**). In recent years the increasing trend of overweight and obesity prevalences in adults in Tuscany seems to be stopped.

The analysis of overweight and obesity prevalence in young children and adolescents is relevant for the impact on short-and long-term health. In Tuscany, in 2012, 7.0% of children 8-9 years old were obese, 19.6% overweight, 72.2% normal weight and 1.2% underweight. There were no significant differences between the two genders. Excess weight in Tuscan children in 2012 was lower compared to the national values (in Italian, 22.2% and 10.6% of children were, respectively, overweight and obese) (Lazzeri G et al., 2012), as well as in subjects aged 11, 13 and 15 (Giacchi MV et al., 2010).

As regards Tuscan adolescents 14-19 years old, overweight and obesity are more frequent in males (in 2011, respectively, 15.2% and 3.3%) than females (in 2011, respectively, 9.9% and 2%), while thinness is more common in girls. In this age, weight excess has lower values than those observed in the other periods of life. In girls the correspondence between the “real” weight condition and the subjective assessment of nutritional status is not as good as in boys. Only 49.3% of females in the normal range according to BMI, in fact, consider themselves “normal” with respect to weight, and 40.8% consider themselves as “a little above the norm”. In boys, 70.2% of the normal-weight according to BMI believes their weight “in the norm” (Ars Tuscany, 2011). The overall data indicate that in children there are no gender differences in body weight according to BMI classification, but from adolescence some features which are typical of adulthood become evident: a higher prevalence of overweight in male and thinness in female gender. Obesity affects the two genders in each age group in a similar way.

Table 3.4
Percentage of subjects aged 18 and over according to BMI classification and gender – Tuscany and Italy, 2011 - Source: elaborations by Ars based on Istat data

Classification according to Bmi	Tuscany			Italy		
	Males	Females	Total	Males	Females	Total
Underweight	0,6	4,0	2,4	0,9	5,0	3,0
Normal range	45,9	60,1	53,3	41,9	58,6	50,6
Overweight	44,2	28,2	35,8	46,7	27,1	36,5
Obese	9,4	7,7	8,5	10,5	9,3	9,9
Total	100	100	100	100	100	100

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Chapter 4

Health problems

Cardiovascular diseases

Cancer

Other chronic diseases

Rare diseases

Infectious diseases

Mental health

Use and abuse of illegal drugs

Traumas

Work-related accidents,
diseases, and stress

4. Health problems

4.1 Cardiovascular diseases

Alessandro Barchielli - Local Health Unit 10 of Florence

Rosanna Abbate - University of Florence

Alfredo Zuppiroli - Local Health Unit 10 of Florence

Valentina Barletta e Paolo Francesconi - Regional Health Agency of Tuscany, Florence

Gender differences in cardiovascular diseases (CVDs) are known and apply to various areas. First, prominent biological differences exist between the sexes (i.e. the role of sex hormones and hormonal changes during menopause in women) concerning both incidence of diseases (clinically overt ischemic heart disease develops about 7-10 years later in females) and response to medical treatments (Poli D et al., 2009). Moreover the prevalence of the most relevant CVD risk factors, such as smoking, diabetes, hypertension, is significantly different between the sexes. Relevant gender inequalities also concern diagnostic and therapeutic management of CVDs. Differences in presentation, with more 'atypical' symptoms in women when compared with the classical pattern in males, and a lower awareness of CVD health risk in women among healthcare professionals, often causing misinterpretation of symptoms, contribute to explain the difference in the clinical approach for men and women.

Results of studies carried out in Tuscany on gender differences in occurrence and clinical management of CVDs can be summarized as follows:

Acute myocardial infarction

About 2/3 of hospitalised acute myocardial infarctions (AMIs) in 2012 occurred in males and age-standardised rates confirmed higher hospitalization levels in males. Age-specific rates showed that the M/F ratio lowered from 5.0 in age 45-64 years to 1.4 among people older than 85 years.

Hospital discharge data showed that about 57% of males with acute ST elevation myocardial infarction (STEMI) underwent a PCI within a day from admission (a *proxy* of primary PCI), compared to 39% of females. This gender gap was confirmed by the AMI-Florence2 study, a population-based registry (case enrolment in the Florence area, about 20% of Tuscan population, 2008-10) (Balzi D et al., 2012a). As reported in the literature (Berger JS et al., 2009), low reperfusion rates in females can largely be explained by older age and clinical features at hospital arrival. In the AMI-Florence2 STEMI series, the use of statins in the first year after a discharge for AMI was significantly lower in females than in males (age-adjusted percentage, respectively: 76% and 86%).

Heart failure

In Tuscany, heart failure (HF) prevalence rates, estimated using electronic health-care data-bases, were slightly lower in females (M/F ratio: 1.14). The percentage of patients treated with drugs according to current clinical guidelines was significantly higher in males than in females (respectively: beta-blockers 40.5% vs. 31.1%; ACE inhibitors/ARBs: 56.7% vs. 47.3%).

Stroke

In Tuscany, stroke prevalence rates, estimated using hospital discharge data-bases, were slightly lower in females (M/F ratio: 1.18). Antiplatelet therapy for secondary stroke prevention was used significantly more often in males (39.8%) than in females (35.8%).

Arterial hypertension

In Tuscany, arterial hypertension (AI) prevalence rates, estimated using drugs claims data-bases, were similar in both genders (M/F ratio: 1.03). Laboratory investigations aimed to assess the presence of additional risk factors or to find out asymptomatic organ damage were performed more often in women (i.e.: Serum cholesterol measurement: 42.0% in females vs. 38.6% in males; Serum creatinine measurement or GFR estimation: 55.2% vs. 48.9%, respectively).

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4.2 Cancer

4.2.1 Incidence and prevalence

Emanuele Crocetti - Institute for Cancer Research and Prevention, Florence

In Italy and Tuscany, one female in three and one man in two have the theoretical probability of developing cancer in their lifetime (from birth to 84 years). In Italy there are approximately 5 cancer diagnoses for every 1,000 females each year and about 7 for every 1,000 men.

The five most frequently diagnosed cancers are breast (29%), colorectal (14%) lung (6%), corpus uteri (5%) and thyroid cancer (5%) among females and prostate (20%), lung (15%) colorectal (14%), bladder (10%) and stomach cancer (5%) among men.

Among females, of all ages, the most common cancer is breast. Among young females (<50 years), breast cancer accounts for over 40% of all cancers. Among young men the first is testis cancer (11%). Prostate cancer is the most frequent among men over 50 years. The most common in both sexes are colorectal and lung cancer. The overall numbers of cancers, in both sexes, showed an increasing trend that in Italy reversed in recent years.

Mortality rates for all cancers is decreasing in both sexes, indicating the effectiveness of the health system as a whole. With regards to cancer mortality rates, in first place is breast (16% of all cancer deaths) among women and lung (27 %) among men.

An overall relative 5-year survival is 61% of women and 52% for men. The difference is due to the weight of tumors with different prognosis. For example, breast cancer has a survival close to 90%, while lung cancer close to 10%.

It has been estimated that in Italy there are 2,240,000 people who have had a previous diagnosis of cancer (prevalent cases) (158,000 in Tuscany), of whom 56% are women. Nearly a quarter of all prevalent cancers are represented by breast cancer.

In conclusion, cancers among men and women in Italy and Tuscany differ for several reasons. Among women, breast cancer is most prevalent, while among men , there are three tumors with a similar prevalence but different nature, pathogenesis and prognosis (prostate, lung, colonrectal). If there is no change in smoking habits in the near future, there will be an increase in lung cancer in women, and even a rise in death rates. Moreover, the ageing population, especially with women who have a longer life expectancy than men, will increase the workload for the healthcare system.

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4.2.2 Anticancer chemotherapy: Gender differences in toxicity and efficacy

Teresita Mazzei, Sara Diacciati and Stefania Nobili - University of Florence

Most recent data show that major gender differences influence the efficacy and toxicity of anticancer drugs, used either as single agents (e.g. fluoropyrimidines, platinum compounds, anthracyclines) or in combination chemotherapy (CHT). Higher incidence of toxic effects in women treated with 5-fluorouracil(5-FU)-based CHT has been shown. Also, high numbers of nausea/vomiting and thromboembolic events have been observed after cisplatin administration. Both acute and late-onset cardiotoxic effects were significantly more frequent in females treated with anthracycline-based CHT for childhood leukemia, compared to same age male pts.

A sex-based analysis of trials in small cell lung cancer (SCLC) patients (pts) reported that women had a higher incidence of hematological/non-hematological toxicity than males, but also a longer overall survival (OS) after treatment with cyclophosphamide, doxorubicin (Doxo), vincristine or etoposide and cisplatin. Also, a reduced drug clearance (Cl) in women has been shown after Doxo or epirubicin. Therefore, the high number of toxic effects could be related to higher plasmatic and/or tissue concentrations in females. Experimental and clinical data indicate several and relevant gender differences in various PK parameters (**Table 4.1**).

Gastrointestinal differences may affect the absorption of oral drugs. However, drug Cl variations can mainly affect blood concentrations of some drugs (e.g. 5-FU and Doxo). Significant variations on PK of methotrexate, topotecan, and gemcitabine have also been described.

Gender-dependent differences in the expression levels of the main metabolic phase I enzymes may affect the Cl of substrate drugs. Women have significantly higher levels of CYP3A4.

However, gender diversity of metabolic processes cannot explain alone the drug inter-individual variability. Membrane efflux proteins (e.g. P glycoprotein, P-gp), substrates of many anticancer drugs, should also be considered.

It has been reported that the activity of P-gp is more than twice lower in female pts than in men. This would explain the greater toxicity in women.

Among the several studies focusing on 5-FU, one showed that in females the AUC of blood concentrations was significantly higher; women also developed more nausea/vomiting related to CHT. Along with these PK gender differences, an increased presence of dihydropyrimidine dehydrogenase mutations, responsible for 5-FU catabolism, was reported in females.

However, in women there is also evidence of higher clinical response to CHT, often associated to prolonged OS. A relevant example is the higher clinical response observed

in women with NSCLC treated with erlotinib or gefitinib. This was related to a higher percentage of EGFR activating mutations in women than in men.

Several experimental and clinical data indicate the relevant role of gender differences in toxicity and efficacy of anticancer CHT. Such evidences deserve further investigation for a better future personalization of cancer CHT.

Table 4.1
Gender differences in pharmacokinetics

Parameter	Gender-specific differences
Mass ratio lean/fat	Lower in women
Volume of distribution	Increased for lipophilic drugs in women
Drug protein binding	Hormonal influences
Gastrointestinal variables	Lower motility with increased gastrointestinal emptying; higher pH
Gut enzymes	Lower activity of alcohol aldehyde dehydrogenase in women
Metabolism (phase I) CYP450	Increased CYP3A4 activity and decreased CYP1A2, 2E1 2D6 activity in women
Elimination	Active secretion reduced

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4.3 Other chronic diseases

4.3.1 Diabetes

Cristiana Baggione - Local Health Unit 10 of Florence

Valentina Barletta - Regional Health Agency of Tuscany, Florence

Gender medicine usually comes from the need to differentiate women from men from the biological, social, psychological and cultural point of view.

Diabetes is particularly affected by a lot of gender differences, and cardiovascular risk profile is worse in diabetic women than in diabetic men. In fact, the risk of fatal cardiac complications is higher in women, especially with the onset of the menopause, worsening their quality and quantity of life.

Gestational diabetes, moreover, is by definition a disorder related to gender and it is a major risk factor for the onset of type 2 diabetes in later years. Another typical disease of female post-reproductive lifespan such as osteoporosis show more severe clinical picture and worse prognosis in women with diabetes compared with those that are non-diabetic.

Data derived from AMD Annals 2011 show a higher prevalence of diabetes in males in Tuscany as well as in Italy. Age distribution shows a higher prevalence in Tuscan women over 85 (178.6 per 1000 inhabitants). Considering process indicators more related to the cardiovascular risk profile of diabetic patients, more than two-thirds of the patients had an annual assessment of lipid profile, according to national data. The use of statins in Italy, even if not yet optimal in the population at risk, is however significantly higher compared to what happens in Tuscany. Moreover, in Tuscany the percentage of women treated with statins is lower than that of men (17.3% vs 20.4%). This could be taken into account if we think of the different cardiovascular risk profile between the two genders in the diabetic population. Diabetes, in fact, increases the risk of coronary death (compared to non-diabetics) much more in women than in men, and this may partly be explained by the different atherogenic profile in the two genders.

Some researchers in Germany (University of Cologne, Bonn and Hamburg), in collaboration with the Faculty of Medicine at Harvard University, argue that diabetic women suffering from cardiovascular disease have a worse control of important modifiable risk factors than men and that the same patients receive a less intensive lipid-lowering treatment.

With regards to metabolic control, there are not significant differences in the two genders, according to national data. According to national data, in more than 90% of cases, for both genders, HbA1c has been assessed at least once a year, demonstrating that physicians are adequately monitoring an indicator of medium-and long-term metabolic compensation, in accordance with the recommendations of the Italian guidelines for diabetes mellitus treatment.

However, apart from the metabolic control monitoring, for all the other process indicators, there is a constant difference between the percentages of men and women receiving an appropriate follow up, always to the detriment of the female population. These results are confirmed by the analysis of Tuscan data. In fact, considering the GCI (Guidelines Composite Indicator) which estimates the overall adhesion to recommendations and therefore the appropriateness of follow up monitoring, we can see there is a big difference between the two genders, especially if we consider women under 45 years of age and over 85 whose care profile is worse (19.8% and 16.6% respectively versus 35.1% and 39.7% for the 45-64 and 65-84 years of age).

Therefore, we can conclude that women are receiving a global care less satisfactory than men, despite the medical approach to treatment does not appear dissimilar in both genders.

It is likely that these differences are driven primarily by an increased difficulty for women to access care for reasons related to the psycho-social profile and more complex comorbidity pictures, which will have to be thoroughly investigated and understood to enable the most appropriate educational and treatment strategies.

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4.3.2 Osteoporosis

Luisella Cianferotti, Simone Parri, Maria Luisa Brandi - University Hospital Careggi, Florence

Osteoporosis is a chronic, multifactorial, systemic disease characterized by a reduction in bone mass and deterioration of bone microarchitecture leading to poor quality and decreased resistance of skeletal tissue associated with an increased fracture risk. In contrast to the majority of chronic diseases, where the reference standard is the male population and the characteristics of female population are described as deviations from the male norm, the paradigms for diagnosis and treatment in osteoporosis have been developed for women. The WHO densitometric definition of osteoporosis itself (i.e. bone mineral density, BMD, of 2.5 standard deviations or more below the mean peak bone mass – average of young, healthy adults - as measured by dual-energy x-rays absorptiometry) has been developed and validated for postmenopausal women. Nonetheless, osteoporosis may also affect men. Although BMD is a major determinant for fracture risk, there is no consensus definition for osteoporosis threshold in male subjects. In clinical practice, the WHO densitometric criteria used for postmenopausal women have been applied to men. While oestrogen deficiency represents the major cause for osteoporosis in women, the majority of male osteoporosis is considered to have a secondary cause, such as hypogonadism or corticosteroid therapy. One in three women and one in five men will experience an osteoporotic fracture. Fragility fractures are major causes of increased morbidity and mortality, especially in the elderly. Indeed, mortality rates for fragility fractures are comparable to those of stroke and breast cancer. For this reason, WHO considers osteoporosis second to cardiovascular diseases in terms of critical public health issue.

In Italy, 4.5 million women and 1 million men are affected by osteoporosis. According to the ESOPPO study (Epidemiological Study of Prevalence of Osteoporosis, year 2000, 16000 subjects), 23% of women and 15% of men over 60 years of age are osteoporotic. About 20% of postmenopausal women have experienced one or more vertebral osteoporotic fractures. More than 55000 hip fractures occur in women over 50 years old.

In the period 2000-2009, 84,000 hip fractures occurred (the majority in women aged over 75 years old), with 15,000 of hip fracture-related deaths and 200,000 with a permanent disability, with health care costs of 10 billion euros. The incidence of hip fractures has increased in both sexes over the 10 years of observation.

Antiosteoporotic treatments are also effective against refractures. In Tuscany only 1000 out of 6000 hip fractured patients over 65 years of age, each year begin a specific therapy after the first episode. In this group, 60% will spontaneously discontinue the treatment, with a consequent loss of antifracture protection, with a regional waste of €250,000 per year.

The Tuscany Region has started a multicenter program for the prevention of hip re-fractures in people over 65 years of age (T.A.R.Ge.T. project: *Trattamento Appropriato delle Rifratture Geriatriche in Toscana*) coordinated by University Hospital Careggi (Unit of Bone and Mineral Metabolism), University of Florence and University of Siena, and supported by orthopedics, general practitioners and paramedical personnel. The main objective is to start to maintain the appropriate treatment after a major osteoporotic fracture, therefore increasing adherence to treatment (at least 70% in 1 year and 50% in two years). In **Table 4.2** hip fracture events are reported as exact numbers and are according to sex and age groups.

Table 4.2
Number and percentage of hip fractured patients over 65 years old by gender and age in Tuscany (years 2009-2011)

	Male		Female	
	n	%	n	%
Year				
2009	1251	22.2	4385	77.8
2010	1389	23.5	4525	76.5
2011	1325	24.3	4127	75.7
Age (year 2011)				
65-69	67	5.1	184	4.5
70-74	128	9.7	330	8.0
75-79	211	15.9	611	14.8
80-84	309	23.3	1.000	24.2
85-89	392	29.6	1.206	29.2
90-94	151	11.4	565	13.7
95 +	67	5.1	231	5.6
65-69	67	5.1	184	4.5

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4.3.3 Urinary Incontinence

Massimo Fabbiani - Local Health Unit 10 of Florence

Donata Villari - University Hospital Careggi, Florence

Definition

In 2002 the International Continence Society (ICS) defines urinary incontinence (UI) as “any involuntary urinary leaking” thus facilitating the reproductivity of the epidemic and clinical study.

Epidemiology

This condition, very frequent and increasing with age, emerges today as a prevalent pathology requiring greater medical treatment than in the past. UI affects women twice as much compared to men. Even though most of the epidemic information is based on the North European and American population and information pertaining to the Italian population is scarce and fragmented, we can confirm to this day, over 3 million people are affected by UI, even if this number is underestimated. OMS has evaluated the incontinence phenomenon involves more than 200 million people around the world. This includes all ages with a prevalence of people of over 65 years of age. This problem also affects males, but minimally compared to females. Male UI is highly represented after 60 years of age. A study conducted in Padova, with a postal questionnaire on subjects of more than 5 years of age, demonstrated that the prevalence of UI on the general population is 13%; respectively 17% in females and 9% in males. If we report this analogy to the Tuscan population, we estimate 477,000 people experience UI (**Table 4.3**). This result is to be considered particularly indicative, as it involves subjects of all ages and not institution guests.

Table 4.3
Population with urinary incontinence in Tuscany (year 2005)

Gender	Population	Percentage	Total
Male	1.755.812	9%	158.023
Female	1.879.650	17%	319.540
Total	3.635.462		477.56

Classification

UI, based on the symptoms can be defined as: urge incontinence (UUI); stress incontinence (SUI); mixed incontinence (MUI). A particular condition is overactive bladder syndrome, OAB, characterized by urgency, frequency with or without urinary urge incontinence. OAB affects both men and women, respectively 10.8% and 12.8%. Of those who suffer from these symptoms, 60% are women, and more than 50% is associated with UUI.

Pathophysiology

Risk factors for women: age; pregnancy and labor; obesity; diabetes; symptoms of irritation on the LUT; smoking; diet; neurological, musculoskeletal conditions. Risk factors for men are similar.

Diagnosis

Today UI and pelvic floor dysfunction request collaboration between specialized professionals (gynecologist, urologist, colon-proctologist, physiatrician, neurologist). Communication between doctors specialized in general medicine and people affected by incontinence is fundamental. A good anamnesis is the most important element for clinical diagnosis.

Therapy

UI can be treated with various therapeutical options: conservative; pharmacology; surgery and change of lifestyle.

Social and psychological impact

UI has important repercussions on one's family, social and sexual lifestyle, resulting in changing who is affected by it. To avoid this, there are a series of defense measures to be applied to limit this problem. Moreover UI can affect in particular the sex life of women who thus do not seek sexual intimacy, resulting in a negative relationship with the partner.

Urinary incontinence costs

From the Italian Ministry of the prosthesis assistance delivered from the nomenclature, we can deduce that the amount for incontinence aid represents around 64 % of the total expenses sustained by the National Sanitary Service for prosthesis administration. From the FINCO data relative to the year 2011, 300,000,000 euros were spent on sanitary napkins and 34,500,000 euros on permanent catheters and urinary bags (FINCO, 2012).

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4.4 Rare diseases

*Fabrizio Bianchi, Anna Pierini – National Research Centre and Tuscan Foundation “Gabriele Monasterio”, Pisa
Federica Pieroni, Michele Lipucci - Tuscan Foundation “Gabriele Monasterio”, Pisa*

Rare diseases (RDs) are a group of approximately 7-8,000 diseases characterized by a prevalence of less than 5 cases per 10,000 persons. According to Decree 279/2001 which established the National Registry of RDs, the Tuscany Region implemented a framework to identify the public health districts for the RDs regional network of Reference Centres. In 2006, the Tuscany Registry of RDs, coordinated by the Tuscany Region and managed by the Fondazione Toscana “G. Monasterio”, became fully operative. The registration concerns the entire region involving all public health districts (www.malattierare.toscana.it).

To date 27,344 patients (54% females) have been registered, accounting for 461 different RDs (365 according to the national list, 73 according to the regional list, 23 included for epidemiological purposes).

32% of the RDs involved ‘nervous system/sense organs’, 20% ‘endocrine-nutrition-metabolism-immune system’, 17% ‘congenital malformations’.

Males were more represented in RDs of the ‘respiratory system’ (65%), ‘hematopoietic organs’ (61%), ‘congenital malformations’ (53%).

Females were more represented in RDs of the ‘musculoskeletal/connective system’ (87%), the ‘digestive system’ (70%), the ‘circulatory system’ (69%).

Considering the 35 RDs with at least 30 new cases collected in 2008-2012, the ratio between male and female (M/F) was compared with the ratio observed in the regional population, with and without adjustment for 5 age classes (**Table 4.4**).

The total number of incident cases consisted in 2,000 males and 2,592 females, with a M/F of 0.77 that means 23% of females more than males. An excess of males was observed for 15 RDs, for one disease the M/F was balanced and for 19 RDs a predominance of females was observed. For 5 RDs the male rate doubled that of females, and vice versa for 6 Rds where the female rate was over twice that of the males.

The adjustment by age produced some relevant changes in the statistical significance of the M/F deviations due to the different distribution by age and gender of cases with RDs compared with the general population. In the case of ‘Down’s syndrome’, ‘polymyositis’ and ‘idiopathic pulmonary arterial hypertension’ the age-adjusted M/F lost the statistical significance observed in the crude estimate, on the other hand for ‘primary immunodeficiencies’, ‘myasthenia gravis’ and ‘bullous pemphigoid’ the age-adjustment acquired statistical significance from the crude M/F.

This information, combined with that already recognized regarding the classes of age mostly related to imbalances between males and females, is of interest especially for planning targeted health care services for diagnosis, treatment, rehabilitation and social support, by taking into account the needs and demands expressed by patients of different gender and age.

Table 4.4
Gender distribution of 35 rare diseases - Incident cases (2008-2012) in the Tuscan Registry of Rare diseases

DISEASE	Male		Female		Total	M/Tot%	M/F	Crude RR	Signif	Adjusted RR	Signif	Classes of age Significant classes of age
	Male	Female	Total	M/Tot%								
KLINFELTER SYNDROME	41	0	41	100.00					*			
PRIMITIVE INTERSTITIAL LUNG DISEASES	34	12	46	73.91	2.83	3.05	+	1.48	+			4
KERATOCONUS	93	39	132	70.45	2.38	2.56	*	2.36	*			2
HEREDITARY HEMOCHROMATOSIS	43	20	63	68.25	2.15	2.31	+	2.34	*			4
LICHEN SCLEROSUS ET ATROPHICUS	65	38	103	63.11	1.71	1.84	+	1.97	+			2
DOWN SYNDROME	33	23	56	58.93	1.43	1.54	+	1.48				ns
HEREDITARY SPHEROCYTOSIS	22	12	34	64.71	1.83	1.97	ns	1.75	ns			ns
GASTROINTESTINAL TUMORS	35	22	57	61.40	1.59	1.71	ns	1.99	ns			ns
DUPLICATION SYNDROMES/CHROMOSOMAL DEFICIENCY	25	17	42	59.52	1.47	1.58	ns	1.41	ns			ns
MUSCULAR DYSTROPHIES	29	21	50	58.00	1.38	1.48	ns	1.47	ns			ns
CHRONIC INFLAMMATORY DEMYELINATING POLYNEUROPATHY	20	16	36	55.56	1.25	1.34	ns	1.42	ns			ns
CHROMOSOMAL ANEUPLOIDY SYNDROMES	19	16	35	54.29	1.19	1.28	ns	1.15	ns			ns
BEHÇET DISEASE	28	24	52	53.85	1.17	1.25	ns	1.19	ns			ns
OTHER MULTIPLE CONGENITAL ANOMALIES WITH MENTAL RETARDATION	52	47	99	52.53	1.11	1.19	ns	1.05	ns			ns
HEREDITARY DEFECTS COAGULATION	21	19	40	52.50	1.11	1.19	ns	1.09	ns			ns
PEMPHIGUS	26	26	52	50.00	1.00	1.08	ns	1.16	ns			ns
UNDIFFERENTIATED CONNECTIVE TISSUE DISEASE	10	120	130	7.69	0.08	0.09	*	0.09	*			2,3,4
SYSTEMIC SCLEROSIS	27	166	193	13.99	0.16	0.17	*	0.19	*			2,3,4,5
GIANT CELL ARTERITIS	17	67	84	20.24	0.25	0.27	*	0.36	*			4,5

POLYMYOSITIS	7	26	33	21.21	0.27	0.29	+	0.31	ns	
IDIOPATIC PULMONARY ARTERIAL HYPERTENSION	12	35	47	25.53	0.34	0.37	+	0.42	ns	
CELIAC SPRUE	166	409	575	28.87	0.41	0.44	*	0.41	*	1,2,3
PRIMARY IMMUNODEFICIENCIES	49	69	118	41.53	0.71	0.76	ns	0.73	*	4
MYASTHENIA GRAVIS	44	57	101	43.56	0.77	0.83	ns	0.90	*	2
BULLOUS PEPHIGOID	54	62	116	46.55	0.87	0.94	ns	1.36	*	5
DERMATOMYOSITIS	11	28	39	28.21	0.39	0.42	ns	0.47	ns	
ANTIPHOSPHOLIPID ANTIBODIES SYNDROME	14	35	49	28.57	0.40	0.43	ns	0.42	ns	
MYOTONIC DYSTROFIES	11	22	33	33.33	0.50	0.54	ns	0.53	ns	
MITOCHONDRIAL DISEASES	15	29	44	34.09	0.52	0.56	ns	0.56	ns	
CHURG-STRAUSS SYNDROME	14	23	37	37.84	0.61	0.65	ns	0.69	ns	
PHEOCHROMOCYTOMA - PARAGANGLIOMA SYNDROME	14	23	37	37.84	0.61	0.65	ns	0.65	ns	
CHARCOT MARIE TOOTH DISEASE	17	25	42	40.48	0.68	0.73	ns	0.73	ns	
MIXED CRYOGLOBULINEMIA	58	75	133	43.61	0.77	0.83	ns	0.87	ns	
NEUROFIBROMATOSIS	29	33	62	46.77	0.88	0.94	ns	0.86	ns	
AMYOTROPHIC LATERAL SCLEROSIS	79	82	161	49.07	0.96	1.04	ns	1.19	ns	
TOTAL 35 RARE DISEASES	1234	1738	2972	41.52	0.71	0.76	*	0.78	*	2,3,4
TOTAL RTMR	2000	2592	4592	43.55	0.77	0.83	*	0.83	*	2,3,4

Legend:
RR=Relative Risk between Observed M/F and Expected M/F;
test on RR: + p<0.05; * p<0.01; ns= not significant;
test on classes of age: in bold: significance 1%, in normal character: significance 5%.

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4.5 Infectious diseases

4.5.1 Infectious diseases requiring notification

Cristina Epifani - Local Health Unit 4 of Prato

Monica Da Frè and Monia Puglia - Regional Health Agency of Tuscany, Florence

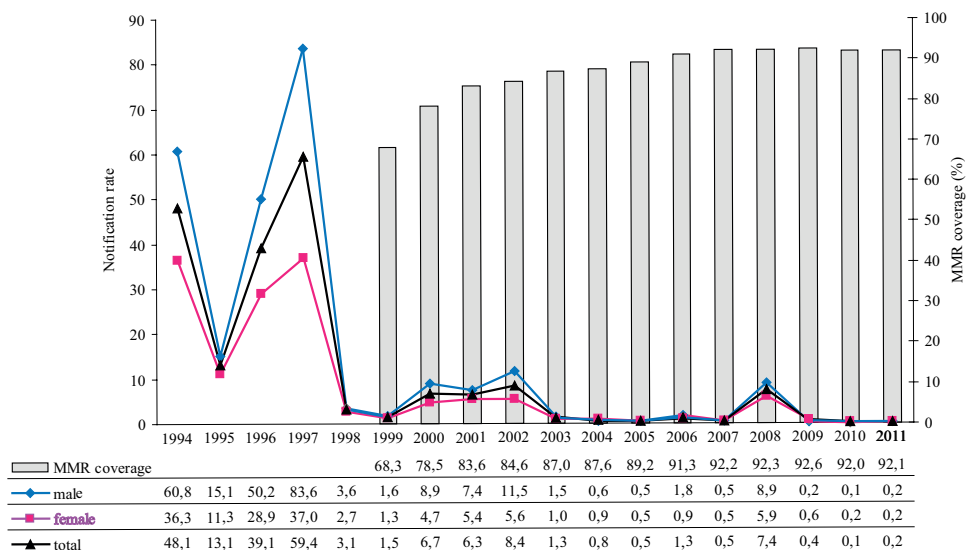
Among the infectious diseases subject to compulsory notification (Ministerial Decree of 15 December 1990), there are no diseases that affect only the female gender; some of these, however, are particularly alarming due to the possibility of vertical transmission of the infection.

Maternal-fetal transmission, determined by numerous pathogens, can have significant consequences. This paragraph analyses rubella and hepatitis B, for which current data is available and safe and effective vaccines (95-98%), which if used prior to pregnancy can prevent infection of the fetus/unborn.

Rubella is an acute viral disease (genus Rubivirus, family Togaviridae), of which 7 cases were notified in 2011, with a notification rate of 0.19 per 100,000 subjects. This value is in line with the Italian figure of 2010 (0.14 per 100,000), but higher than the European average (0.03 per 100,000 EU).

The disease showed a gradual reduction in notification rates since 1994 (**Figure 4.1**), largely attributable to the increase in vaccine coverage in developing age.

Figure 4.1
Notification rate of rubella (per 100.000 residents) by gender, and measles, mumps, and rubella (MMR) vaccination coverage - Period 1994-2011



Males are more frequently affected, but in the last 3 years the incidence in females was equal to or above.

Subjects in childhood are more involved (median age of 9 years in females and 15 in males), though 4 out of 10 cases occur between 15-44 years of age. Almost all cases of the disease are observed in non-vaccinated subjects (9 out of 10).

The incidence of the disease in adolescence and young age and the susceptibility of women of childbearing age, demonstrated in sero-prevalence studies (Rota MC et al., 2007), are warning signs for the possible risk of congenital rubella syndrome, still reported in Italy (61 cases confirmed and 3 probable in 2005-2012). It is therefore necessary to ensure full compliance with the instructions of the “Plan for the elimination of measles and congenital rubella 2010-2015” (Ministry of Health, 2011), recently reinforced (July 17, 2013) in the Circular of the Ministry of health.

Hepatitis B is a viral infectious disease (HBV, family Hepadnaviridae), whose transmission is predominantly through sexual intercourse, but it is also possible through infected blood or in vertical way.

In 2011, 67 cases of hepatitis B were reported in Tuscany, with a rate of 1.8 per 100,000, slightly higher than the Italian rate (1.0 per 100,000), which is lower than the European average (2.97 per 100,000 in 2009). Also for this disease the trend has steadily dropped for both genders.

Non-vaccinated subjects are most frequently affected by the disease (98.2%), as evidence of the protective efficacy of the vaccine, which was introduced in Italy in 1991 for subjects in evolutionary age and for children born of HBsAg positive mothers (Law 165/91). The active offer of screening to women in pregnancy and early child vaccination are, in fact, the most effective intervention to reduce neonatal infection.

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4.5.2 AIDS

Bartolozzi Dario - University Hospital Careggi, Florence

Monia Puglia - Regional Health Agency of Tuscany, Florence

AIDS is part of the Class III of diseases in the Infectious Disease Classification and notification of the diagnosis is required using a specific form.

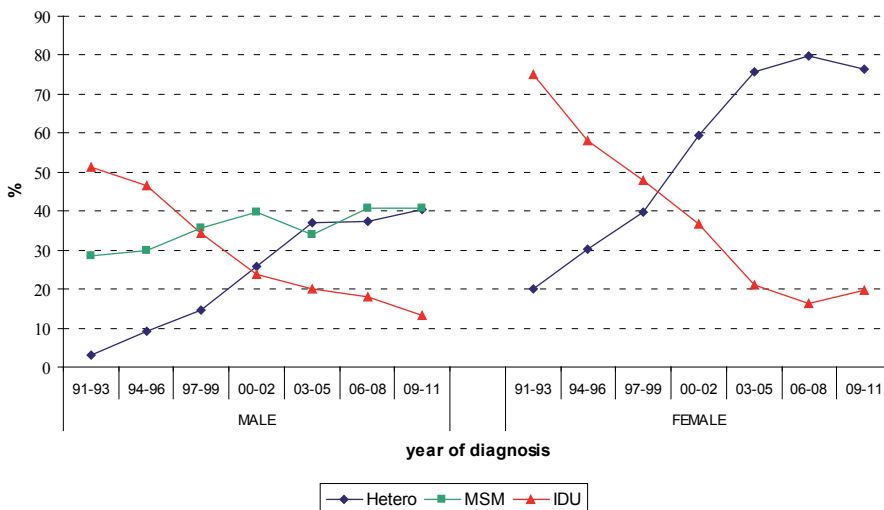
Epidemiological monitoring of the disease over the past years has allowed for the observation of the changes in the means of diffusion and natural history of HIV infection in Tuscany.

From the beginning of the outbreak to 31 december 2011, in Tuscany, 4141 cases of AIDS have been notified and of these 21.8% are in females.

The average age of presentation at the time of the diagnosis has progressively increased both in men and women being at the end of the period of observation respectively 45 and 41 years old of age.

Incidence of AIDS is higher in males than in females, in 2011 the male/female ratio was 9.5:1. From 1988 till 2011 the incidence rates per year have been shown to be stable while the prevalence has clearly increased, as highlighted throughout Italy. There has been no advocated decrease of new infections, as has been underlined by the records of a new increase of cases due to sexual transmission, against a decrease of those for injective drug use (**Figure 4.2**). The increase in prevalence should be related to the availability and circulation of treatment, accessibility to treatment and an increase in life quality and expectancy.

Figure 4.2
Means of infection by year of diagnosis and gender - Cases in adult population in Tuscany - Period 1991-2011



Often the awareness of seropositivity overlaps with the diagnosis of AIDS, because of the presence at the moment of the first medical consultation of an AIDS defining opportunistic infection or neoplasia. This worrying delay in diagnosis, related to the poor knowledge of the issue and of risk behaviours, leads to the observed spread of the infection by sexual transmission, particularly in the heterosexual population. This means of transmission makes women at significantly higher risk than men of acquiring infection: this higher vulnerability of women can be explained by female biological/anatomical peculiarities, such as large mucosa surfaces which can come into contact with infected fluids. This biological notion is well documented by observed global epidemiological data showing an increase in incidence of infection in women throughout the world, defining a real female issue in terms of HIV infection, even if in Italy a significative turnaround of the men/women ratio of infection has not yet been observed.

Indeed, the majority of infected women live in developing countries where additional social and cultural factors may have an important role in defining the trend of HIV transmission and including the gender issue.

New HIV diagnoses

In Tuscany the observation of new infections started in 2010 from the notification system of new HIV infections from 2009.

In 3 years of observation 847 new HIV diagnosis have been notified and of these 773 (91.3%) in people living in Tuscany.

21.8% of cases are women (male/female ratio 3.58:1), with an incidence rate of 2.9 per 100,000 residents against an incidence rate of 11.4 per 100,000 in men.

As observed for AIDS, the majority of HIV has to be ascribed to sexual risk behaviours, being the 86.7% of recordings. Heterosexual intercourse is the most frequent means of infection in women (89.4%). In males the infection is both homosexual (MSM: men having sex with men) and heterosexual: 48.1% and 37.8% respectively.

As regards the reasons behind HIV testing, 38.2% of patients have the test at the moment of the diagnostic hypothesis of an HIV related pathology and just 25.4% of patients have the test spontaneously because of perception of a risk behaviour. Again, this observation underlines how the attitude of people has dramatically changed towards HIV, as it is no longer perceived as a real danger for self health and life. Besides these first two reasons of testing (in female respectively 30.0% and 17.6%), women have tests also because of a gynecological consultation during pregnancy (20.6%). In fact HIV screening is part of the expected programme of tests during pregnancy.

4.5.3 Sexually transmitted diseases

Barbara Giomi and Giuliano Zuccati – Local Health Unit 10 of Florence
Caterina Silvestri – Regional Health Agency of Tuscany, Florence

Sexually transmitted diseases (STDs) are a group of disorders caused by heterogeneous infectious agents (both bacterial, and viral and parasitic), whose epidemiological importance is dramatically increasing worldwide due to changing sexual freedom and migratory flows. In the United States recent evidence from CDC (Centres for Disease Control and Prevention) points out an incidence of 20 million STD cases per year, and a prevalence of about 110 million cases (1). Young people aged 15-24 years seem to constitute a half of the affected population, and women seem to account for 50% of it.

In Italy, the STD scenario is not well understood, since most sexually transmitted infections are not subjected to mandatory notification. The Istituto Superiore di Sanità (ISS) in 1991 instituted a observation network of clinical settings and laboratories scattered throughout the country. In the years 1991-2009 more than 140,000 new cases were reported. The most frequent STDs diagnosed in women are genital warts caused by human papillomavirus (HPV) and Chlamydia Trachomatis (CT) infections, followed by Trichomonas Vaginalis infections (2.3). CT-related disorders are more common in non-Italian women, in those assuming oral contraceptive therapy and in pregnant women.

Recently, the Regional Health Agency (ARS Toscana) in cooperation with clinical practitioners from Florence, Lucca and Siena performed a retrospective study, in order to assess the demographic, behavioural and clinical features associated with newly diagnosed STDs among attendees of four STD Clinics during 2011 in Tuscany, Central Italy.

1563 subjects were included in the study, with a male/female ratio of about 2:1 (64.9% vs 35.1%). A higher percentage of women were found among people from other countries, rather than among the Italian subgroup (42.4% vs 30.7%). About 40% of subjects were under the age of 30, while approximately half of them were between 30 and 50. Overall, women seemed to have a better education level than men, since 60.7% of the female group had attended high school or were graduates, in comparison with 49.6% of the male group.

MSM (men who have sex with men) represented 25.9% of the male population, while all of the female group reported themselves to be heterosexual. Condom use was very poor in the large majority of our sample, regardless of gender or sexual orientation. Genital warts were the most frequent STD (41.4% of new diagnoses, see **Table 4.5**), followed by non-gonococcal cervicitis (14%) in women and urethritis (11.8%) in men. No significant difference was observed between the two genders concerning the incidence of herpes genitalis, molluscum contagiosum, syphilis and gonorrhoeae. Finally, anamnestic STDs were recorded in 28.3% of women and 32.9% of men.

In conclusion, our results show that STDs in Tuscany involve a mixed young to adult population, composed of both heterosexual and homosexual subjects who practice unprotected sex and do not seem to be conscious of the associated risks, as demonstrated by the high rates of coinfections and reinfections. These findings reinforce the need for greater education and prevention efforts for HIV and other STIs among the Tuscan population.

Table 4.5
STDs in Tuscany in 2011: incidence of new diagnoses in respect to gender and statistical comparison

Sexually transmitted disease	Male		Female		Total		Chi-square
	N	%	N	%	N	%	
Syphilis	83	8,2	13	2,4	96	6,1	<0.001
Gonorrhoeae	37	3,6	4	0,7	41	2,6	<0.001
Non-gonococcal Urethritis/ Cervicitis	120	11,8	99	18	219	14	<0.001
Herpes Genitalis	69	6,8	51	9,3	120	7,7	0.078
Molluscum contagiosum	68	6,7	45	8,2	113	7,2	0.306
Hepatitis B	10	1	5	0,9	15	1	0.884
Hepatitis A	1	0,1	2	0,4	3	0,2	0.252
HPV infections (genital warts)	443	43,7	204	37,2	647	41,4	0.012
HIV/AIDS	53	5,2	16	2,9	69	4,4	0.034
Hepatitis C	16	1,6	12	2,2	28	1,8	0.387
Others	24	2,4	6	1,1	30	1,9	0.080

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4.6 Mental health

4.6.1 Epidemiology of mental disorders

Caterina Silvestri, Stefano Bravi - Regional Health Agency of Tuscany, Florence

Mental disorders are affecting more and more people representing 13% of the global burden of diseases, of which 4.3% are from unipolar depressive disorder alone (WHO, 2012). The data are also worrying if we consider the regions of Europe only where 1 in 4 people report to have had at least one mental health problem in their lifetime.

Hospitalization and use of territorial services

In 2012, in Tuscany, there were 8,573 hospitalizations for mental disorder, representing 2.3% of total admissions. Overall, hospital treatment continues to show a downward trend with a standard rate which in 2012 stood at 3.3 hospitalizations per 1,000 residents, with no gender difference.

Among adults, bipolar disorder (manic depression) continues to be the leading cause of hospitalization in both genders, with a prevalence for the year 2012 of 25.7% (males 22.8, females 28.4); while, in under-18s, Intellectual disability (23.4%) is the leading cause. The reduction in admissions is affected, of course, by a greater take-over by the Territorial Service where, there were 77,922 active cases, in 2011, of which 25,038 minors. In the same year, there were 26,135 new cases (33.5% of the total).

In this case, gender analysis sees women most represented (57.7%) with diagnosis falling mainly between affective disorders (depressive and/or manic, bipolar disorder, dysthymia, cyclothymia, etc.), anxiety disorders and somatoform disorders (panic disorder, obsessive-compulsive disorder, personality disorders, etc.). In contrast, males aged under-18 continue to be the most prevalent (63.1%) with learning disorders, adjustment reactions, anorexia and bulimia nervosa, etc.) (Table 4.6).

Depression and use of psychiatric drugs

The national overview, as well as highlighting the regions of the Centre-North as the main users, highlights the high consumption found in Tuscany where, in 2012, a value of 58.3 DDD/1,000 inhabitants/day (SPF, 2012) was recorded.

Females' greater experiencing of certain disorders, such as mood disorders or anxiety disorders, makes it easy to interpret the data that identifies women as the major users of AD (35.7 DDD/1,000 inhabitants/day in men vs. 79.2 DDD/1,000 inhabitants/day in women) with a female/male difference that is accentuated at 45 years old and over.

Suicides

While women are more "prone" to develop mental disorders, on the other hand they are less affected by the suicidal phenomenon and, compared to a rate of 11.5 per 100

thousand inhabitants found in men (2010), in women the value is 2.8 suicides per 100 thousand inhabitants.

This data, apparently in contrast with that reported previously, can be explained by observing the modality of implementation that sees men more likely to use more violent forms, such as a fire weapons, compared to females, that by choosing poisoning, have a greater chance of being rescued. In both genders, the age group most affected by this phenomenon continues to be over 60.

Table 4.6
Summary of key findings regarding mental health extracted from regional databases

Information	Male		Female	
	n	%	n	%
Leading cause of hospitalization (2012)**				
% Bipolar disorder (adult)	4080	22,8	5437	28,4
% Mental retardation (underage)	321	21,6	235	26,0
Leading cause of access to Territorial Services (2011)***				
% Affective disorders (adult)	2092	16,7	3754	22,8
% Other mental conditions (underage)	2460	24,4	1395	24,5
Use of psychiatric drugs (2012)				
Defined daily dose (DDD)*1.000 inhabitants /day	35,7		79,2	
Suicide mortality (2010)				
Mortality rate *100.000 inhabitants	11,5		2,8	

* Hospital Discharge Records, Mental Health Records, Prescription Drug Records, Regional Mortality Registry

** % calculated on the number of hospitalizations (for that cause) by gender

*** % calculated on the number of cared (for that cause) by gender

References

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4.6.2 Eating disorders

*Mario Di Fiorino, Alessandro Del Debbio - Local Health Unit 12, Viareggio
Luca Maggi, Linda Pannocchia - "Villamare" Therapeutic and Rehabilitative Community for Eating Disorders, Lido di Camaiore*

The eating disorder program survey in Tuscany: exploring intensive treatment programs.

Eating disorders (EDs) are characterized by severe disturbances in eating behavior, sustained by distorted perception of one's own weight and shape or impulsivity and presenting restrictive and/or binge-eating/purging behaviour and represent an important cause of physical and psychosocial morbidity usually affecting adolescent girls and young adult women. These behaviours lead to an abnormal conditioning on an emotional level and can be harmful for the patient's health.

Tuscany has worked to create an integrated network of services, to define standards of care and construct and update map services. In particular, in the territory an integrated network of services for the prevention and treatment of eating disorders (outpatient treatment, day-hospital treatment and hospitalization) has been realized. The research project "Monitoring the implementation of the integrated network of services for the prevention and treatment of eating disorders in Tuscany", conducted from 2006 to 2012 by the Child-Neuropsychiatry (University of Florence) in collaboration with the Region of Tuscany, gave us standardized information about the epidemiology, clinical care path for patients, longitudinal trend of disturbances and the adequacy and effectiveness of the treatment in terms of clinical outcome.

The Villamare's Therapeutic Community experience

Villamare is the first therapeutic community for eating disorders established in Tuscany. It can accommodate up to ten patients, preferably between the ages of 16 and 40 years old. This community is "open": patients with stable medical conditions can go outside for a walk and meet parents and friends during the day when they are not engaged in therapeutic activities.

Our residential center was established with the help of Johan Vanderlinden and follows the St. Jozeph Hospital experience (Kortenbergh, Belgium) (Vanderlinden J, 2001).

Patients at Villamare therefore experience a full immersion with the therapeutic program that points to the recovery of the overall functioning of the patient (psychological, physical, social and working).

Nutritional rehabilitation is a very important aspect of the treatment. In the first phase, meals are assisted (three main meals - breakfast, lunch and dinner - and two snacks - mid-morning and mid-afternoon) with the aim of addressing caloric restriction and, in the case of underweight patients, to regain weight. In this phase during meals an

operator shall ensure that patient sits properly and finishes the meal. In the second and third phases, patients sit without the operator's assistance with the aim of maintaining the achieved weight.

In addition to the purely therapeutic aspects, patients are required to test their ability to manage everyday life, self-care, problem solving and organization of leisure time.

A year after the opening Villamare's staff had treated 60 patients (58 female and only 2 male) aged between 16 and 46 years old. 29 of the 60 patients treated were admitted to Villamare. All the patients admitted were female, 25 from Tuscany and 4 from other regions, 2 were admitted to the day-hospital and 1 was admitted to the shelter privately. Of the remaining 31 patients, 5 did not meet the inclusion criteria for hospitalization, 4 refused hospitalization and the remaining are waiting for administrative approval or have not been able to get it. On admittance, 17 subjects were diagnosed with AN, 10 subjects with BN and 2 subjects with BED. 3 patients dropped out and decided not to complete the treatment.

At discharge most of the patients who completed the rehabilitation program showed a satisfactory symptomatic remission (weight gain or weight maintenance and interruption of dysfunctional behaviour).

This data, although encouraging for the outcome measures, are preliminary and with limitations related to the lack of a follow-up. For better analysis of the results obtained with the treatment we have to wait for the observations at 6 and 12 months.

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4.7 Use and abuse of illegal drugs and health consequences

Paola Trotta - Local Health Unit 10, Florence

Alice Berti - Regional Health Agency of Tuscany, Florence

4.7.1 Consumption of illegal drugs and gambling in adolescents

Illegal psychotropic substances

The behaviour of the use and abuse of psychotropic substances has always been characterised by significant gender differences, (albeit with standardisation trends over time). In addition, the consumption of psychotropic substances is a phenomenon more closely related to the younger age groups and has developed especially in industrialised countries.

In this regard, the Regional Health Agency investigates such risky behaviours in adolescents from Tuscany through the realisation of the EDIT study (2005, 2008 and 2011).

The results of the latest edition show that 36.4% of students claimed they had used a narcotic substance at least once in a lifetime, with a significant gender attraction, particularly 31.9% of females compared to 40.5% of males (**Table 4.7**). These differences are also significant in previous editions and in the other two temporal references surveyed.

Table 4.7
Prevalence of use of illegal substance at least once in their lifetime, over the past 12 months and over the past 30 days, by gender and regional total – Comparison 2005-2008-2011

Consumption of substances	Male			Female			Total		
	2005 N = 2,234	2008 N = 2,359	2011 N = 2,476	2005 N = 2,717	2008 N = 2,854	2011 N = 2,096	2005 N = 4,951	2008 N = 5,213	2011 N = 4,572
Life	38.0	40.5	40.5	29.2	35.0	31.9	33.2	37.5	36.4
Last 12 months	31.7	34.4	35.5	22.3	28.2	26.5	26.6	31.0	31.1
Last 30 days	21.8	24.3	29.2	13.8	19.1	24.3	17.5	21.5	24.8

An analysis of consumption by type of substance shows an involvement in the use of medicines (or drugs) without prescription higher in girls than in boys (2008 respectively: 1.6% vs 6% - 2011: 3.1% vs. 5.5%)

The prevalence of the male gender, instead, imposes itself in both cannabis and cocaine, although the differences are mainly for the consumption of the second than the first. The results of the last edition of EDIT, considering the prevalence of cannabis use in the two genders, referred to one-time usage (at least once in their lifetime) and the last 30 days recorded respectively 9 and 8.2 percentage points of difference (life: males 35.4 vs. females 26.4%; month: 22.3 vs. 14.1), while for cocaine, the prevalences measured in males are almost double those of females (life: males 6.8% vs. females 3.8%; month: 2.8% vs 1%).

As expected, multiple use also shows similar gender differences. This behaviour consists in the simultaneous intake or on the same evening/occasion of two or more psychoactive substances and results in an enhancement of the effects and risks, with serious danger to the persons concerned or to third parties (traffic accidents, brawls) (Martoni M, Putton A, 2006).

The results of the EDIT study show a trend of the prevalence of poly-drug users, which increases with age and a clear minority of females. The difference between the two genders is more prominent as their age increases. In fact, males pass from 1.6% of multiple drug users on a monthly basis among 14 year-olds to 8.5 percent among nineteen year-olds and above, while females (given the same two age groups), record an increase of nearly 6 percentage points (from 1.2% to 6.9%).

The data analysed in summary describes a tendency on the part of females searching for an drug-inebriated experience, at a level of lower risk and less effort and more marginal involvement than males, especially in complex use patterns such as poly-drug use. However, confirming what reported by the study of Bertacca SG et al. (2013), as to a lower ability of consumers of substances to control their emotional reactions, experimenting with greater likelihood depressive symptoms in adolescence, we find a greater psychological distress among the monthly multiple drug users.

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Gambling

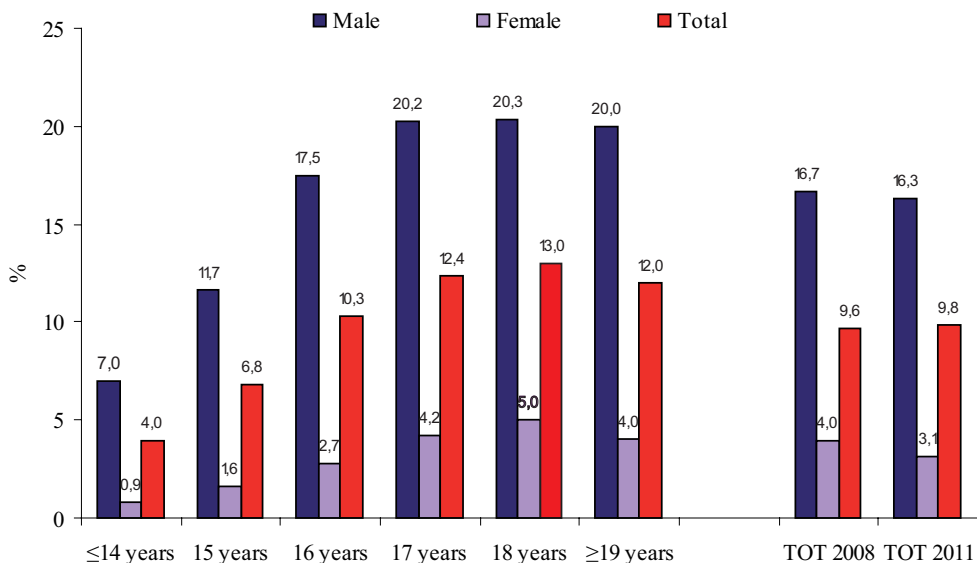
Gambling is a form of entertainment, where you bet money or something of equivalent value, in order to obtain something of larger value, when the result is due to chance rather than skill.

Epidemiologically, gambling shows considerably high rates: there is agreement, in national and international studies, on the fact that more than 80% of the adult population play or has played a gambling game in their life. For the majority of studies, the prevalence of pathological gamblers in the general adult population varies from 1% to 3% (N Raylu N Oei TPS, 2002).

Compared to the general adult population, the prevalence of subjects at a young age with gambling problems is about double (5-6%). Illegal gambling among young people is much more widespread, so that pathological gambling in this age group appears to be even more difficult to measure (Slutske WS, 2003). As evidenced by the results of the

last Italian student population survey (GPS-ITA) reported in the most recent annual report to the Parliament (DPA¹, 2013), more than 7% of children allegedly have a problem with gambling and 3.2% of those are pathological gamblers. With the objective of providing a quantification of this phenomenon in Tuscany, the EDIT study (in 2008 and 2011 editions) investigated the evolution and the magnitude of gambling in the sample of students. 58.1 percent of respondents said they had played a gambling game at least once in their lifetime. This percentage, as with most of the behaviours analysed thus far, is quite different in the two genders: 72.3% of males vs. 42.8% of females, although, looking at the data for a single year of age, as age increases, the disparity diminishes. Regarding the differences between the types of games played, scratch an win instant lottery tickets are in first place for all (out of the respondents: 75.6% of males and 90% of females), but males were found to have a high participation in sports betting, pool or other games of skill, cards and dice, betting and Lottery competitions (39.6%). The EDIT sample was administered also the Lie-Bet (Johnson EE et al., 1997), a screening test typically used in youth groups of the population which permits the identification of individuals at risk for a gambling problem (GAP). The results show an even more marked gender difference: a total 9.8% students tested positive to the Lie-Bet, especially 16.3% of males versus 3.1% of females (Figure 4.3). The figure was also in line with that of the previous edition of the project (2008), with almost super-imposable prevalences.

Figure 4.3
Percentage distribution of subjects who tested positive to Lie/Bet on the total sample and distribution by gender and age – Comparison 2008-2011



1 Anti-drug policies Department, Presidency of the Council of Ministers.

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4.7.2 Drug addiction and health consequences

Health care services for drug addiction

On an international level, the literature concludes that the development of drug addiction and the female addictive experience have specific underlying factors (etiological and aggravating) that are different from those of the male world (EMCDDA², 2000; UNODC, 2004; Molteni M Pellegrini G, 2013). The system of indicators drawn up at a national level does not, however, allow for an investigation of these factors in the addicted population. In Italy, in fact, the knowledge about gender differences in this area are somewhat limited.

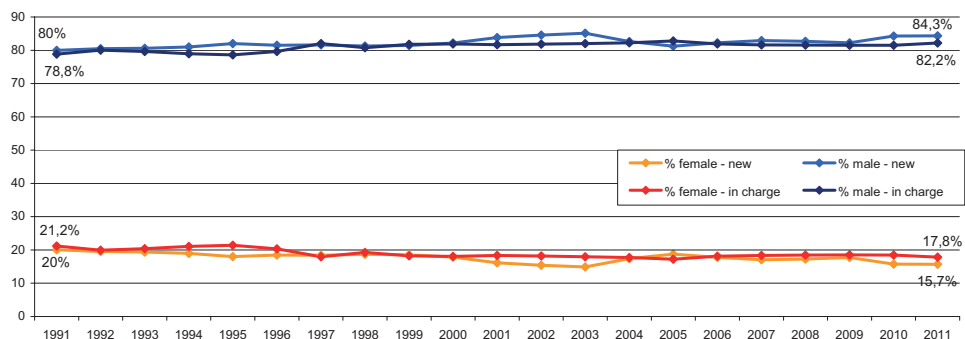
The available evidence indicates a clear numerical inferiority of women than men in the consumption of psychotropic substances; therefore, also in the afferent population to Ser.T (Drug addiction centres), the female gender is under-represented, in a ratio that on average stands at 1 woman to every 5 men. Furthermore, for drug addicts, the most common primary substance is heroin, regardless of gender, and in second place cocaine, which is however slightly more prevalent among males (DPA³).

Data on drug addiction in Tuscany still comes from the printed material of ministerial records, and the only data differentiated by gender are those on the type of user and age.

The number of patients in charge at the Ser.T in Tuscany for illegal substances from 1991 to 2011 has proven to be consistently growing at a slow pace (respectively from 6,670 to 14,416 total users). This overall increase is tied to both new cases and to patients who remain in the Centres or return after periods of non-use or a use they feel is quite compatible with their lives. However, the frequency by gender does not change, basically ever, and is fairly stable, and indeed, as far as females are concerned, if anything tends to slightly decrease with age (R M/F from 1991 to 2011 passes from 3.8: 1 to 4.7: 1).

The percentages of female gender among total users vary between 20.8% in 1991 and 17.5% in 2011 (Figure 4.4).

Figure 4.4
Percentage distribution of Tuscan drug addicts by gender and type of user - Tuscany – Years 1991-2011



2 European Monitoring Centre of Drugs and Drug Addiction – Osservatorio Europeo sulle Droghe e le Tossicodipendenze
3 Anti-drug policies Department, Presidency of the Council of Ministers. <http://www.politicheantidroga.it>

With regard to the trend of age, in general there was an increase in the average value in the period considered. Among users already followed up by the centres, there is a shift from 28 to 36 years in males and from 28 to 35 years old in females, while among new addicts, there are slightly higher differences, from 27 to 31 years in males and from 26 to 29 in females.

Looking now at visits to Tuscan emergency rooms (ER) for use, abuse, addiction and drug poisoning, in 2012 there were 1,947 visits, of which 43.7% female, a rather high percentage compared with the values commonly calculated for consumption and other health consequences.

By observing the change in the male to female ratio among different age groups, it is clear that there is a greater male involvement in younger classes (male to female ratio (R M/F) 1.9:1 in the age group 20-39 years) and of women in older age groups (R M/F = 0.7:1 in 50-69 years and 0.5:1 in 70-79 years).

The most frequent diagnoses for males were abuse, psychosis and poisoning by opiates and narcotics, while in females, there is a prevalence of psychotropic drugs and poisoning from sedative hypnotics. These important differences in diagnosis would explain the higher prevalence of women and especially of older age.

Deaths from overdose are much more numerous in males with non-similar consumption rates, but very close to Ser.T data, and with an even more marked gap. Females in the period considered, in fact, decrease by about 10 percentage points, from 21.1% in 2000 to 11.8% in 2009. This data also indicates a lower tendency on the part of the female gender to involvement in excess and abuse experiences, developing less dependencies and consequently a lower mortality.

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4.8 Traumas

4.8.1 Traffic injuries

Francesco Innocenti – Regional Health Agency of Tuscany, Florence

Each year 1.24 million people die as a result of road traffic accidents (Global Status Report on Road Safety 2013). Females are always less involved than men for two main reasons: first, women spend less time on the road than men, second, women have a greater sense of danger and that leads to lower accident risk. In general, especially in the most disadvantaged countries, males are more likely to own a vehicle than females. Moreover, men are most commonly used as car drivers, but also and above all of buses and trucks.

Starting from the assumption that it is not possible to know the true risk of collision between genders, analysis of consequences of driving reveals that among men aged between 15 and 44 years traffic accidents are the leading cause of death for event-related trauma. Suicide, on the other hand, is the most common cause among women (Hofman et al., 2005).

A further confirmation that women drive less than men comes from the archive of “Licence points”, according to which in 2011 1,342 million driving licenses were active in Tuscany for males and 1,071 million for females (regional crude rates respectively: 86.1 and 62.5 per 100 inhabitants). In Tuscany, according to Istat/SIRSS, over 17 thousand car accidents with at least one wounded party were recorded in 2010. Claims involving a female driver totaled less than half of those involving a male (F/M ratio: 0.4).

The ratio between genders in relation to injured parties reveals values which are always lower for females, although higher than those observed for accidents; data relative to deaths amplifies the differences even more: in 2001 this value amounted to 0.2 while in 2010 it dropped to 0.1, indicating that the reduction of deaths of female drivers in this period was significantly greater than that observed in males (**Table 4.8**).

However in a context in which females are always less involved than men, there is a category of “vulnerable road users”, pedestrians, where women, in terms of injury, are most affected in each age group, with peaks between 60 and 80 years.

As regards the other major category of vulnerable road users, cyclists, men are still the most involved (66.4% of claims). Furthermore, this percentage increases when analysis focuses on cyclists who lost their lives: in 25 cases detected, 22 (corresponding to 88%) were males.

Table 4.8
Distribution of accidents, injuries, deaths and mortality rate (per 1,000 road accidents) by gender and year. Tuscany, 2001-2010 (Source: ARS on ISTAT/SIRSS)

Year	Male				Female			
	Accidents*	Injuries	Deaths	Mortality index***	Accidents**	Injuries	Deaths	Mortality index***
2001	26.645	12.924	236	8,9	9.306	5.580	38	4,1
2002	27.299	13.135	224	8,2	9.361	5.683	27	2,9
2003	28.644	13.984	211	7,4	9.980	5.871	34	3,4
2004	27.994	13.384	223	8,0	9.712	5.695	36	3,7
2005	29.709	14.564	205	6,9	10.286	5.981	38	3,7
2006	29.028	14.307	200	6,9	10.360	6.071	29	2,8
2007	27.476	13.577	194	7,1	10.448	6.135	22	2,1
2008	24.951	12.486	187	7,5	9.965	5.829	26	2,6
2009	24.452	12.300	167	6,8	9.653	5.643	24	2,5
2010	21.309	10.812	160	7,5	9.044	5.343	18	2,0

*: at least one driver involved in car accident is male
 **: at least one driver involved in car accident is female
 ***: ratio between deaths and accidents, per 1.000

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4.8.2 Domestic injuries

Francesco Innocenti – Regional Health Agency of Tuscany, Florence

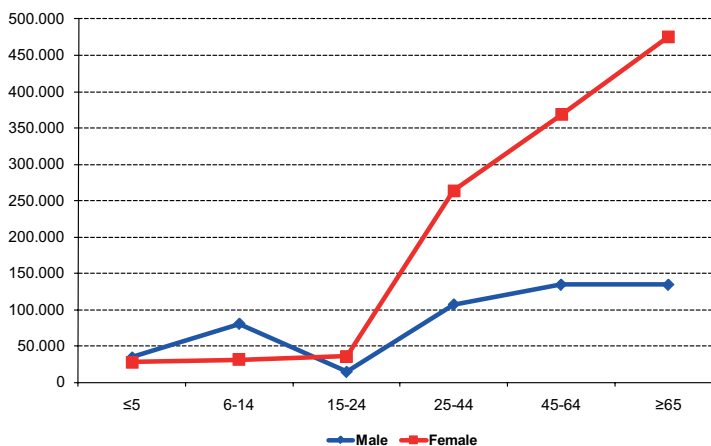
The home is generally considered the safest place par excellence, but looking at the data on accidents happening at home, it should be considered, on the contrary, one of the most hazardous environments. Injuries that occur at home, in most industrialized countries, are in fact a major cause of injury and mortality in each age group and, in particular, according to WHO and UNICEF, the leading cause of death in children (World Report on Child Injury Prevention).

It is a topic of great interest to public health, the impact of these injuries on the health of people who deal with domestic work (housewives, caregivers, etc.), and more generally for the elderly, being greater: the social burden that these injuries have in terms of human lives, hospital and non-hospital health-care and permanent/temporary disability is really significant.

In Italy, according to the ISTAT Multiscopo Survey of 2011, every year, due to accidents at home, approximately 2.8 million people are injured in a total of 3.3 million accidents. In Tuscany, in 2011 domestic accidents involved about 180 thousand people, with a different gender composition: 132 thousand females, accounting for 73% of the total and 49 thousand males.

Our region ranks among the first in Italy, along with Sicily, Lombardy and Veneto. Analysis by age and gender reveals that young people injured, aged below or equal to 14 years old, accounted for 22.7% of distribution with respect to males, while among females, only 4.9% fall into this category. Starting from the age group 15-24 years old, females always show higher data than males (**Figure 4.5**).

Figure 4.5
People injured in a domestic environment by gender and age group. Tuscany, 2001-2011 (Source: ARS on ISTAT)



Considering the poorness of data provided by ISTAT, information registered by accident and emergency departments can be useful to dimension the category of domestic injuries.

According to this archive in Tuscany around 55 thousand people were admitted due to domestic injuries in 2012, of which 54.2% were females. The analysis of the gravity of such admittances, estimated on basis of the color assigned at discharge, pointed out a prevalence of males incurring the most serious accidents while females are more affected by injuries of medium and medium-high severity.

Evidence indicates that discharge diagnoses recorded mainly for females in 2012 was “concussion without loss of consciousness” (6.5% of women), while for males was “open wound to fingers without complication” (7.4% of men).

Finally, in Tuscany during the years 2001-2009 1,458 deaths due to accidents at home were recorded, corresponding to an average of 162 events each year, with more female cases than male. In terms of crude rates of mortality, however, males values are higher, thus denoting in this area a lower overall severity for females.

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4.9 Work-related accidents, diseases, and stress

4.9.1 Work-related accidents and occupational diseases

Donatella Talini, Alberto Baldasseroni, Gianpaolo Romeo - Regional Centre for the Analysis of Data on Occupational and Work-related Injuries and Diseases, Region Tuscany

Currently, it is not easy to evaluate the actual distribution of risk in males and females, due to the difficulty of reading disaggregated data by gender. Reference data to analyze the extent of occupational injuries and diseases are given by INAIL as far as the numerator concerned (number of occurrences) and data from ISTAT for the denominator (number of employed). The numerator gives details on the manufacturing division. The denominator, on the other hand, does not provide this type of data, but provides information about the economic activity (ATECO) and details about the types of contracts, which are not present in the INAIL database.

Considering these limitations, in Tuscany, over the 2000-2011 period, no significant decreasing trend was observed for injuries, including serious ones, among women, while there was a decrease in the incidence in men. This trend seems to indicate a gradual convergence of injury rates in both sexes, although the proportion of injured men is still significantly higher (**Figure 4.6**). The difference in the type of contract is still marked (women being typically employed in part-time jobs), as indicated by the distribution of injuries during the day in both sexes.

Regarding occupational diseases, there has been a well-known progressive increase over the years. This phenomenon is linked with a very marked difference between men and women, especially in Tuscany where there has been a massive increase of musculoskeletal diseases: at the national level, these diseases represent the 58% of the notified diseases by men but over 85% of those by women (particularly carpal tunnel syndrome which is more marked among women than among men, 3166 vs 2495 in Italy).

Figure 4.6
Occupational accidents by gender - Tuscany, 2000-2011



This increase has been especially evident since 2008, at the introduction of major changes in the tables of occupational diseases. This surely indicates an emergence of this type of disease, too often misdiagnosed or ascribed to “nonspecific chronic diseases” in the past. We should not be surprised if an increase of this type of occupational diseases is evident especially among females, often employed in the manufacturing sector, in services and in health care, where the problems associated with repetitive movements, awkward postures or the handling of loads are common (Conti P and Ninci A, 2011).

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4.9.2 Work-related stress

Rodolfo Buselli – University Hospital of Pisa

Stress is a major work-related health problem in Europe for both women and men, but women claim more stress-related disorders than men.

Women are usually employed in certain jobs in public and health services, where working conditions are more correlated with occupational stress. In most cases, women have part-time jobs with minor risk in terms of exposure time, but also more instability and less control on their job.

Repetitive and monotonous tasks (characteristic of housekeeping) are typical of many female-dominated occupations. Women workers also have intense rhythms, heavy effort and low control over their work.

Since 2008 Italian safety legislation requires each company to make a systematic evaluation of all work-related stress risk factors, taking account of gender differences.

Work-related stress and gender issues are the most significant aspects of recent safety legislation.

Most clinical studies about work-related stress diseases are represented by investigations on work harassment psychopathologies; in fact, occupational stress and bullying at work partially share aetiological mechanisms.

The Tuscan situation

A centre for the study of work-related stress has been operating in Pisa University Hospital since 2002. The centre recruits patients mostly from Tuscany. Therefore it can be considered a good observatory of the Tuscan situation.

In 2011 a study was carried out on a sample of 580 patients by the Occupational Medicine Centre in Pisa Hospital. 275 patients were selected with diagnosis of adjustment disorders (91 cases) and major depressive disorders (184 cases). 203 patients came from Tuscany. Genders were equally distributed in the two groups. The sample was analysed for relational aspects of the occupational situation.

Workplace behaviours with intentional infliction of emotional distress were analysed with a questionnaire (Punzi et al.2007), composed of 30 items, describing harassment actions and divided into three main areas: “attack on person”, “attack on working situation”, “punitive actions”.

Table 4.9 shows statistically significant gender differences using the student’s t-test. The most frequent harassment actions belong to the area of “attack on person”. There are statistically significant differences between women and men with respect to the following behaviours: social exclusion, humiliation and offence, instigation (Table 1). In the area “attack on working situation” females have a statistically higher mean score on the variable “frequent disapprovals”.

The activity carried out so far in Tuscany seems to confirm the existence of gender-related specific features for occupational stress. Therefore it could be important to focus attention on the mechanisms underlying this phenomenon in order to plan specific preventive strategies to protect women workers from the effects of work-related stress, especially developing and spreading risk assessment methodologies.

Table 4.9
Average score of some oppressing actions revealed through the Labour Clinic questionnaire by the University of Milan on a sample of 275 people (138 males, 137 females)

	Female		Male	
	Average	p	Average	p
Social exclusion	1.71	<0.05	1.53	<0.05
Humiliation	1.57	<0.05	1.34	<0.05
Instigation	1.52	<0.001	1.17	<0.001
Frequent criticism	1.53	<0.05	1.31	<0.05

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4.9.3 Female health determinants in the prevention of work-related stress

Fiorella Chiappi - Order of psychologists of Tuscany

The health of individuals and communities is influenced by a number of determinants, including gender. In psychosocial prevention of work-related stress, considering specifically females, we can identify some possible non-health determinants:

- undervaluation of the specificity of females
- family and workplace violence
- overload of work and family roles
- risks of going out from the labor market for family problems
- gap between academic performance, skills, employment, income and career development.

For many women their career is also a possible cause of stress in terms of the difficulty of breaking the “glass ceiling” and obtaining management roles. In the survey “Beyond the glass ceiling”, carried out in Tuscany by Tuscan AIF and the Lab-STARS of UNIFI and coordinated by myself, career women identify several constraints and sources of stress (**Table 4.10**).

Table 4.10
Factors perceived as objective and subjective constraints to career development

Objective constraints to career development	
57%	lack of adequate services for children and elderly people
56%	motherhood becomes an element of female career penalty
55%	family care falls primarily on women
54%	working hours do not take into account personal and family life
45%	appointments are made by executive men who prefer men
37%	men do not accept executive women
35%	women hamper other women’s careers
Subjective constraints to career development	
44%	many are too insecure and underestimated
43%	for many unsuitable career for a woman, especially if mother
41%	they often serve men, living more in the shadows rather than with visible roles
39%	women have an excessively ideal vision of the work world, whereby they suffer too much for others’ perceived unfair behaviors
35%	they do not know how to work in a team with other women
34%	they do not know how to fight for the evolution of their careers: give up or lash out on the opponents improperly
25%	they are unable to handle stress raised by constant criticism

Prevention of work-related stress, which takes account of the specificity of females, requires a complexity of actions at various levels:

- evaluation approaches of the work-related stress centered on gender differences, with specific questionnaires, checklists, focus groups
- work overload reduction, through a cultural change to be implemented by investing in educational processes for new generations
- organizational innovation to welcome the legislative guidelines on work-related stress and gender; to achieve new values such as “gender balance” in corporate leadership, knowledge of its advantage for companies and to test organizational models, such as “Diversity Management”, taking into account the various diversities, including gender
 - strategic role of corporate training, aimed at promoting well-being in a context that is sensitive to differences, including gender.
 - acquisition of coping strategies: actions to handle stressful situations from cognitive and emotional standpoints (Lazarus 1966), essential resources for the development of self-efficacy, to increase the cognitive potentiality and to achieve certain results (Bandura A. 1997), beliefs, attitudes, and behaviors of which you should be aware in order to distinguish when they are productive or unproductive (Frydenberg E., 2000).

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4.9.4 Stress and work-related stress pathologies

Silvia Maffei, Cristina Vassalle - G. Monasterio Foundation, Pisa

Stress is a defense/protection reaction and is therefore physiological. However, when elicited by an environmental demand that exceeds the adaptive capacity, it may result in biological and/or psychological changes that increase the risk of negative health outcomes. Stress and emotions are closely related and often coexist. However, these variables also represent individually significant prognostic factors for mortality, illness and risk of disease. Gender differences have been demonstrated in response to transient emotional states, stress and coping styles (ability to handle stressful situations) (Mercadillo RE 2011).

Subjects react to stressful events in different ways and individual differences in the physiological stress response are important health determinants. Inter-individual differences in the physiological response to stress remain difficult to evaluate because of heterogeneity and the presence of individual risk factors that may affect biological responses (Rivera-Torres P 2013). Occupational stress can negatively affect overall wellness, correlating with musculoskeletal disorders, cardiovascular disease, anxiety, depression, “burnout”, insomnia, with adverse impact on performance, creativity, productivity, innovation, commitment and leadership.

Psychosocial and occupational stress are risk factors for disease in both sexes, especially in women who adopt unhealthy lifestyles and typically-masculine habits, such as smoking. Job strain is a recognized risk factor for depressive illnesses, cardiovascular and cardio-metabolic diseases. Work-related stress is also associated with an increased risk of atherosclerosis, and endothelial dysfunction has been related to stress caused by prolonged night shifts in health care. Work stress may increase the risk of a first coronary event, and recurrence of disease after a first ischemic stroke, especially in women. Conversely, the relationship between work-related stress and cancer is not clear.

Measures of stress prevention/reduction in the workplace and the adoption of healthy lifestyles are a valid strategy for primary prevention of cardiovascular risk factors, cardiovascular disease and depression (Stansfeld SA, 2012). Indeed, several indicators of oxidative stress, inflammation, and immune system must be evaluated in order to consolidate the diagnosis of psychosocial and occupational stress in the general population and workers. However, a reliable measurement does not exist, due to the wide intra- and inter-individual variability of response to stress.

Hence the difficulty to design studies that identify a cause/effect relationship between stress and disease. Further efforts are also needed to examine the gender differences in response to work-related stress and the biological mechanisms that significantly influence the response to stressors in the two sexes.

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Chapter 5

Health and social aspects

Sexual and reproductive health

Children's health

Adolescents

Foreigners

Elderly

5. Health and social aspects

5.1 Sexual and reproductive health

Many indicators that are related to reproductive health are particularly sensitive in describing the health of the population in general: maternal mortality, unsafe abortion, access to prenatal care are all phenomena that describe how individual countries around the world take care of females' health.

5.1.1 Assistance in pregnancy and childbirth

Valeria Dubini – Local Health Unit 10, Florence

Monica Da Frè, Eleonora Fanti, Monia Puglia – Regional Health Agency of Tuscany, Florence

In recent years we have witnessed important changes in birth and fertility rates in Tuscany. After decades of decline, there has been an increase in the number of deliveries linked essentially to migration flows. 2008 recorded the highest number of births over the past 30 years; since then, also as a result of the economic crisis, the number started to drop and 2012 registered 31,234 births (Birth Assistance Certificate database).

The average age of females at childbirth increases, especially as for the first delivery; the average age of females giving birth has risen from 30.8 years in 2001 to 32.0 years in 2012, and the average age when delivering the first child rose from 29.6 years in 2001 to 30.8 years in 2012. Between 2001 and 2012, the proportion of females giving birth aged 35 and over increases by more than 10 percentage points (from 24.2% to 35.6%), and the number of females in labour 40 years and older has doubled (from 3.5% to 8.0%)

Analysing the lifestyles that may influence the outcome of pregnancy, it should be noted that females in Tuscany that continue to smoke during pregnancy in 2012 represent 8.4%, while females facing a pregnancy overweight or obese are slightly increasing (19.1% in 2004 vs 21.3% in 2012).

Another aspect that characterises our population is represented by the increase in multiple pregnancies; in fact, in 2012 twin pregnancies in Tuscany have reached 1.8% of all deliveries, with a percentage increase of 57.4% compared to 2001, when they accounted for 1.3% of childbirths. The increase is linked to the higher maternal age at childbirth, factor that predisposes to multiple pregnancies per se, and the increasingly frequent recourse to assisted fertilisation techniques.

As regards assistance in pregnancy, despite of the fact that the private gynaecologist still attracts the majority of females (57.6% in 2012), since 2004 that share is steadily declining (68.0 per cent) (Table 5.1) while the clinic, conversely since 2004 has expanded the proportion of females that require assistance during pregnancy: 26.8% vs 19.6% in 2004.

There is a high number of visits made during pregnancy (6.9 in 2012) and of ultrasound scans (4.8). A major effort has been made in ensuring assistance to all pregnant females: in 2004, the percentage of those who had not carried out visits accounted for 2.8% and those who had not carried out ultrasound scans, 1.2% in 2012 are respectively 0.4% and 0.5%.

Recourse to invasive diagnostic tests like amniocentesis and chorionic villus sampling is decreasing across the population, and this is connected with the policy implemented in the region to encourage non-invasive screening tests, risk-free, in all age groups.

Table 5.1
Support during pregnancy for females who have given birth in Tuscany – Years 2001-2004-2008-2012

Assistance in pregnancy	2012	2008	2004	2001
Number of deliveries	31,234	32,806	30,102	27,408
% clinics as reference medical structure	26.8	23.3	19.6	N/A
% private practice as reference medical structure	57.6	61.9	68.0	N/A
Average number of visits	6.9	6.7	6.7	6.3
% no visit	0.4	1.6	2.8	N/A
% first visit after 12th week	4.5	5.8	7.1	5.0
Average number of ultrasound scans	5.3	5.0	4.8	4.6
% no ultrasound scan	0.5	1.7	1.2	2.6
% less than three ultrasound scans	3.8	5.4	5.0	6.2
% screening	70.4	46.4	35.3	N/A
% amniocentesis	13.9	23.4	32.6	34.0
% chorionic villus sampling	5.3	3.5	2.4	1.2
% amnius/villi from 35 years up	41.3	56.0	66.9	65.5
% amnius/villi under 35 years	9.4	14.8	23.9	26.1

With regard to the assistance for childbirth, in Tuscany all deliveries (99.9% in 2012) take place in public hospitals: there is a slight increase in the proportion of pregnant females who have labour induced and in the use of medications to relieve pain during labour (from 28.4% in 2004 to 37.6% in 2012). The use of epidural analgesia during the same period rose from 9.6% to 13.7%.

Consistent decrease in all delivery units in the recourse to episiotomy (from 31.8% to 18.3%), while recourse to caesarean sections remains stable (26.5% in 2012 vs 26.1% in 2001).

Advanced maternal age, smoking, obesity, overweight, underweight, and multiple pregnancies are all risk factors for preterm deliveries, low weight at birth, increased recourse to TC, morbidity and neonatal and maternal mortality, and affect the health of mothers and unborn children.

These data demonstrate, however, that in our region there has been the affirmation of a culture more respectful of the integrity of the female body, culture in which females themselves are foremost a part of, and there is no doubt that this is a very positive figure in assessing females' health in Tuscany.

5.1.2 Breastfeeding

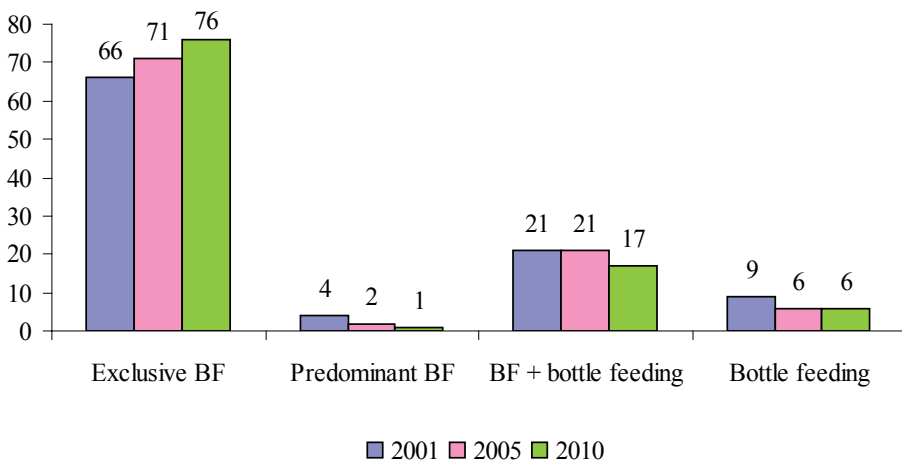
Monia Puglia and Laura Aversa – Regional Health Agency of Tuscany, Florence
Franca Rusconi – Meyer University Children's Hospital, Florence

Exclusive breastfeeding until six months of age is one of the most important determinants for the infant's health; being low cost, safe and effective, it is the food of choice for the first months of life and can strengthen the emotional and mental bond between mother and child.

The promotion of breastfeeding has been actively supported by the Tuscany regional authority since 2004, and the monitoring of the prevalence of breastfeeding at discharge from the delivery unit at the 3rd -6th month is one of the Regional priorities (**Figure 5.1**). Since 2002, the regional Health Agency has been involved in monitoring breastfeeding through various investigations in cooperation with the Anna Meyer Children's University Hospital. Since 2008, data on the prevalence of breastfeeding at discharge from the delivery unit are collected through the Birth Assistance Certificate.

From the last survey carried out at vaccination centres in 2010, the prevalence of exclusive breastfeeding at discharge from the delivery unit is 76%, higher than the 66% of year 2002 (Casotto V et al., 2005) and 71% of 2005 (Puglia M et al., 2007). At the time of the first vaccination (61-120 days of life), children fed exclusively and predominantly through breastfeeding are 57.5%, but an additional 17.8% continues to be breastfed while also taking solid food (mostly fruit) or artificial milk. At the second vaccination (121-180 days), these proportions are respectively 31.4% and 36.3%; more than half of children in this age group has started weaning.

Figure 5.1
Proportions of breastfeeding (BF) at discharge from the delivery unit. Temporal comparison in Tuscany. Years 2001-2005-2010



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5.1.3 Post-partum depression and patterns of antidepressant prescriptions in Tuscany

Isabella Lapi - Local Health Unit 10, Florence

Monica Da Frè, Rachele Capocchi - Regional Health Agency of Tuscany, Florence

For multiple psychological and social reasons, throughout pregnancy and postpartum women run into the risk of developing psychic uneasiness, psychiatric discomfort and relational problems with their babies: anxiety, depression and, in the baby, attachment problems (insecure and disorganized ones) and behavioural indispositions. (Wisner KL et al, 2006).

To describe the prevalence of antidepressant prescriptions in women during the first year after delivery and to analyze the associated factors, two regional registries have been linked: the Pharmacy Dispensing Records and Birth Assistance Certificates, established and updated by the Tuscany Region.

Data refers to the 29,560 women who gave birth in 2011. 991 mothers (3.3%) received at least one prescription for antidepressants during the year after the child-birth. 16% of prescriptions were given before one month from delivery, 30% before the second month, 40% before three months and the 62% before ten months. 52% of prescriptions continued for at least 6 months. A higher risk of receiving antidepressant drugs in the first year after delivery was detected in mothers with history of antidepressant prescription before pregnancy (Odds ratio; OR: 29.15; 95% CI: 24.79-34.27); with increasing age and in mothers smoking during pregnancy (1-3 cigarettes vs no-smokers OR=1.49; 95% CI: 1.06-2.09; >3 cigarettes vs no-smokers OR=1.33; 95% CI: 0.99-1.79). Preterm birth was also associated with a higher frequency of antidepressant prescriptions after delivery (OR: 1.49; 95% CI: 1.12-1.97). The prescriptions were less frequent in mothers with non-Italian nationality (OR: 0.59; 95% CI: 0.46-0.75).

The proportion of mothers treated with antidepressants in Tuscany represents about a third of the prevalence of postpartum depression reported in other studies, but a similar proportion to those of a sample of Italian women enrolled in the study ESEMeD¹, where it was found that 3.8% used antidepressants within one year of delivery (Alonso J et al., 2004).

Our study confirms the association between postpartum depression and history of depression that suggests the presence of a biological vulnerability for hypertensive disorders in these women.

Unfortunately, nowadays, social stereotypes and prejudices prevent mothers from revealing their suffering, asking for help and accepting pharmacological therapy. Therefore, the most effective social security cover has to provide for interventions on:

¹ European Study on the Epidemiology of Mental Disorders.

prevention with specific programs towards population and particularly pregnant women; screening to recognize at-risk cases and early diagnosis; treatment and social support in pathological cases; relapse and chronic disease prevention. With regard to therapy, according to guidelines (National Unit for Women's Health - ONDA, 2010) the most incisive forms are interventions combined to psychotherapy-pharmacological therapy, mother-child psychotherapy, even in home-visit form, and individual psychotherapy; if hospitalization is indispensable, it has to be done in specific wards where the mother is not separated from the baby (Mother and baby Units).

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5.1.4 Miscarriage

Eleonora Fanti – Regional Health Agency of Tuscany, Florence
Valeria Dubini – Local Health Unit 10, Florence

Miscarriage¹ refers to the spontaneous expulsion or natural death of the fetus or embryo within 180 days of amenorrhoea. Following are the data from ISTAT regarding Care Institutes' Miscarriage Discharge records.

The rate of spontaneous abortion in the last decade in Tuscany has almost remained stable, ranging from a minimum of 4.9 spontaneous abortions per 1,000 resident females aged 15-49 in 2001 to 5.3 miscarriages per 1,000 in 2012. Also compared to the number of live births, the number of miscarriages has remained stable at around 13-16 abortions per 100 live births. The last 2009 ISTAT data in Italy show a spontaneous abortion rate of 5.5 miscarriages per 1,000 females 15-49 years old and a ratio of spontaneous abortion of 13.6 miscarriages per 100 births (**Figure 5.2**).

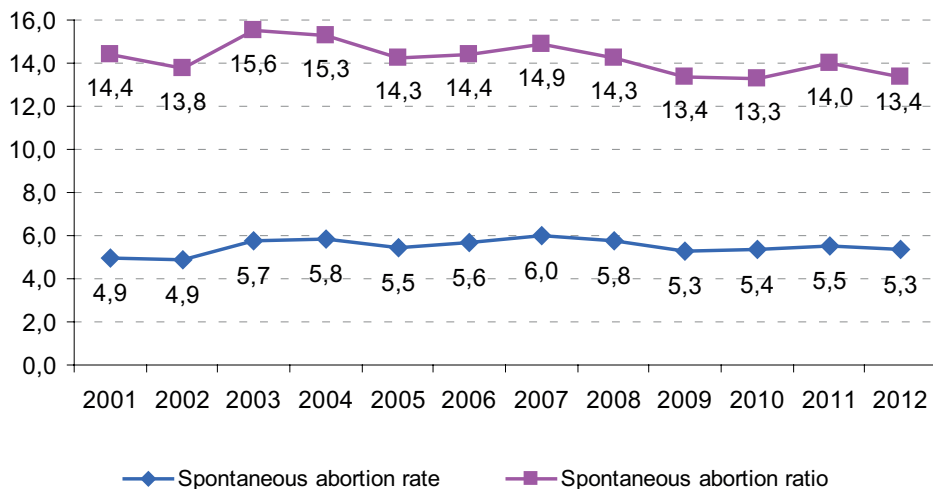
We know that the risk of miscarriage is more common in older age. In fact, in 2012 55.7% of females discharged from Care Institutes in Tuscany were 35 years old and over and reached 39.6% in 2001. Furthermore, 65.5% had a medium-high qualification, 26.7% were foreigners and 29.9% were females with repeated miscarriages. All of these characteristics increased compared to 2001. First-time mothers generally reduced, while the over 35-year-olds increased (from 42.0% to 46.2%). The period of gestation in which a miscarriage occurs more frequently remained stable -up to the 12 week (93.0%). Medical abortion increased, both via the use of misoprostol or prostaglandin (from 1.4% to 6.3%) and waiting for spontaneous expulsion (from 1.9% to 4.8%). Nowadays, in fact, we operate as little as possible and promote methods which are far less intrusive than the curettage, which involves a number of considerable risks (10/100 of infection, bleeding 1-2/1,000, 1-4/1,000 of uterine perforation) (WHO, 2003; Royal College of Obstetricians and Gynaecologists, 2004). General anesthesia remained stable (81.2% in 2012), local anesthesia decreased slightly (9.3%) and in the same period the use of any analgesic therapy increased: from 2.5% to 8.0%.

The stable abortion rate may depend, on one hand, on the delay of pregnancy to a later age, and, on the other hand, on a more conservative attitude than in the past when there was no hospitalization and data was consequently lost.

This element is important in terms of gender health, as the more conservative practices are more respectful of females' health and body, although they require a higher participation and awareness of what is happening.

¹ ISTAT definition.

Figure 5.2
Spontaneous abortion rate (per 1,000 resident women aged 15-49) and spontaneous abortion ratio (per 100 births) – 2001-2012



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5.1.5 Voluntary termination of pregnancy

Monica Da Frè – Regional Health Agency of Tuscany, Florence

Valeria Dubini – Local Health Unit 10, Florence

In recent years, in Tuscany, as well as in Italy, we have observed a steady reduction of Voluntary Terminations of Pregnancy (VTOP): in 2012, 7,121 VTOP were carried out in Tuscan institutes, with an abortion rate of 8.9 per 1,000 females of childbearing age and an almost constant ratio compared to the number of live births (24 VTOP per 100 live births).

The abortion rate in Tuscany in 2012 is still among the highest in Italy (Ministry of Health, 2013).

There has been an increase in females' age also when it comes to VTOP: the average has grown from 29.4 years in 2001 to 30.2 in 2012, while the percentage of females over 40 rose from 7.8% to 10.3% in the same period (**Table 5.2**).

The proportion of minors who resort to VTOP remains almost constant (3.0%): these are minor percentages compared to other European countries, but the fact remains that on this age group, the cultural changes that have contributed to the reduction of VTOP as a whole, seem to have had less of an influence.

As is well known, the phenomenon of immigration in recent years has meant that the proportion of foreign females who resort to VTOP has doubled over the last decade, moving from 22.5% in 2001 to 44.4% in 2012. These are mainly females from countries with strong migratory pressure, a factor which we will discuss in more detail in paragraph 5.4.

Females who resort to VTOP already have children in 61.0% of cases (52.7% in 2001) and have already had a previous VTOP in almost a third of cases (29.7% vs. 20.9% in 2001).

Recourse to clinics for the issuance of certification is on the rise: 47.9% vs. 36.5% in 2001 of females has received clinical certification, 31.9% from their personal physician and 19.1% from the Obstetric gynaecological Department of the Nursing Institute. The increasing trend in the role of family counselling centres is determined primarily by the contribution of foreign females who appear most frequently in the lower threshold and is characterised by the presence of cultural mediators.

A critical point is the waiting time for the execution of the VTOP: in 38.7% of cases, it is more than two weeks (it was 29.6% in 2001).

Also in 51.1% of cases, VTOP is carried out after the 8th week, with greater risks to females' health.

Table 5.2
Characteristics of females who resort to VTOP – Years 2001-2004-2008-2012

Characteristics of females	2012	2008	2004	2001
Number of VTOP	7,121	8,077	8,763	8,176
Average age (years)	30.2	29.9	29.6	29.4
% < 18 years	3.0	2.9	2.6	2.6
% 35 years and over	32.0	29.8	26.7	26.3
% 40 years and over	10.3	9.4	8.4	7.8
% unmarried	52.1	51.3	49.8	49.4
% high school or college graduate	52.2	47.0	47.1	45.6
% employed	51.3	55.7	52.4	52.0
% PFPM	43.4	39.1	31.2	21.4
% PSA	1.0	0.8	0.9	1.1
% foreign	44.4	39.9	32.1	22.5
% previous children	61.0	57.6	55.3	52.7
% Previous VTOP	29.7	26.6	26.5	20.9

The pharmacological approach with mifepristone (RU486) and prostaglandins for interruption of pregnancy (also known as medical abortion) was used in Tuscany in 11.5% of cases.

A reading of this data shows us a population of females who over the years has acquired knowledge, even compared to the use of contraceptives, and reduced recourse to VTOP: this is to some extent a widespread and “spontaneous” cultural process, but that certainly has found significant support in family counselling centres.

Also the use of RU, which has had difficulties establishing itself in our country for various reasons, seems to have become more welcomed among females: it is an important aspect that could in time reduce the services but that goes in the direction of less invasive methods and a reduction of the risks to females’ health. It certainly requires greater involvement in the abortive process and proximity of services that do not make the female feel alone.

Much more can be done to promote the spread of a contraceptive culture among both operators and females, and there is no doubt that clinics represent a pivotal point, especially if integrated within hospitals.

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5.1.6 Maternal mortality and morbidity

Monica Da Frè - Regional Health Agency of Tuscany, Florence

Valeria Dubini - Local Health Unit 10, Florence

Maternal mortality is defined as the death of women while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes (Donati S et al., 2011).

Official figures of maternal mortality based on death certification alone revealed consistent under-reporting in several developed countries. The Italian National Institute of Health implemented a research project in collaboration with six Italian Regions (Tuscany, Piedmont, Emilia Romagna, Lazio, Campania and Sicily) to detect and quantify the under-reporting of maternal mortality and morbidity. A retrospective study was conducted using record linkage between death certificate and hospital discharge databases. (Donati S et al., 2011).

In the Tuscany Region, during the 2001-2006 period a total of 12 maternal deaths were identified: 8 direct obstetric deaths and 4 indirect obstetric deaths. The most frequent causes of direct obstetric deaths were thromboembolism (2 deaths) and obstetric haemorrhage (2 deaths). The maternal mortality ratio MMR was 6.4 per 100,000 live births, one of the lowest in Italy (11.8 per 100,000 live births). Comparing the record-linkage MMR with the region's MMR detected through the death registry, underestimation was 57% in Tuscany and 63% in Italy. In Tuscany, as well as in Italy, an increased risk was observed among women aged ≥ 35 years compared with younger women (**Table 5.3**) (Donati S et al., 2011; Senatore S et al., 2012).

In the Tuscany region 19 late deaths were also identified (occurring from 43 to 365 days of termination of pregnancy): 2 direct obstetrics deaths, 15 indirect obstetrics deaths and 2 not classified. The most frequent causes of indirect obstetric late deaths were neoplasm (9 deaths), cerebral disorders (3 deaths) and suicide (2 deaths) (Donati S et al., 2011; Senatore S et al., 2012).

Near-miss is defined as a woman who nearly died but survived a complication that occurred during pregnancy, childbirth or within 42 days of termination of pregnancy. In our study, a near-miss case was defined as a woman with one or more hospitalizations in an intensive care unit or coronary unit during pregnancy, childbirth or within 42 days of termination of pregnancy (Donati S et al., 2012).

In the Tuscany Region, a total of 133 near-miss cases occurred during the 2004-2005 period, 110 associated with delivery. The total maternal near-miss rate was 1.8/1,000 deliveries in Tuscany and 2.0/1,000 in Italy. The factors associated with near-miss cases were obstetric haemorrhage (27.8%), hypertensive disorders of pregnancy (23.3%) and disseminated intravascular coagulation (15.8%). In Tuscany, as in Italy, there is a higher

risk for women aged ≥ 35 years, for foreign women and after caesarean sections (Relative Risk: 8.2) (**Table 5.3**) (Donati S et al., 2012; Senatore S et al., 2012).

The monitoring of maternal deaths and near-miss morbidity may help to identify possible death-risks and may be an important mechanism for identifying effective preventive measures to improve maternal health practice.

Table 5.3
Maternal mortality ratio ≤ 42 days (2001-2006), severe maternal morbidity rate (2004-2005) in Tuscany and risk factors

Age	Maternal deaths	MMR*	RR (IC 95%)
<35 years	7	5.4	1.0
≥ 35 years	5	10.0	1.9 (0.6-5.8)
	Near-miss	SMMR§	RR (IC 95%)
Age			
<35 years	74	1.7	1.0
≥ 35 years	36	2.0	1.2 (0.8-1.8)
Nationality			
Italian	93	1.8	1.0
Foreign	17	2.1	1.2 (0.7-2.0)
Caesarean section			
No	28	0.6	1.0
Yes	81	4.9	8.2 (5.3-12.6)

* Maternal mortality ratio ≤ 42 days: maternal deaths per 100,000 live births.

§ Severe maternal morbidity rate: near-miss per 1,000 deliveries.

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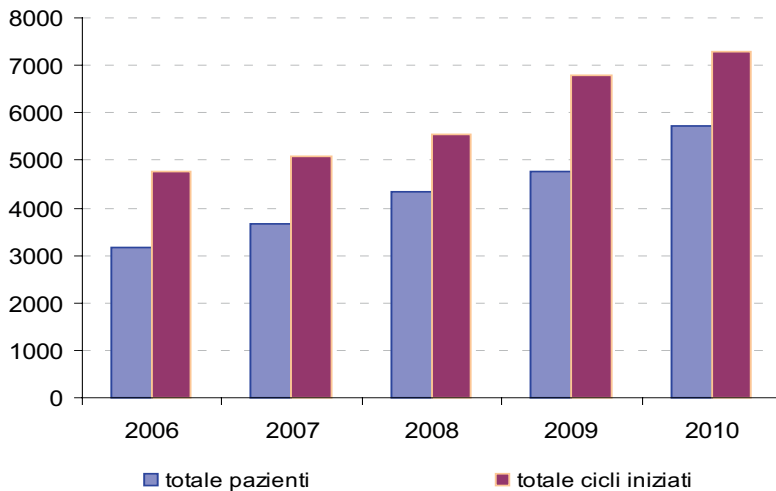
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5.1.7 Infertility and medically assisted procreation

Claudia Livi - Assisted Reproduction Centre “Demetra”, Florence

Most couples planning to have children do not generally raise the question of “if” but “when”. The number of couples who have difficulty in conceiving is increasing, with a calculated increase of 10% over the last 30 years, due to many factors. Italy is no exception with respect to the increase of patients needing treatment cycles: in 2011 (Report to Parliament, 2013), 73,570 couples started 96,427 treatment cycles, with 15,467 pregnancies obtained and 12,000 children born. Also in Tuscany (**Fig. 5.3**), over the years there has been both an increase in the number of couples referred to regional infertility Centres (+ 80% since 2006) and an increase in the number of started cycles (+ 53% since 2006).

Figure 5.3
No. of patients and no. of cycles carried out in Tuscany



	2006	2007	2008	2009	2010
total patients	3176	3680	4355	4767	5716
total cycles initiated	4781	5086	5561	6776	7290

Source: Regione Toscana, Health Ass., Equity and Access Dept.

Infertility has a very strong impact on the couple: the initial reactions to the awareness of their difficulty to procreate are shock and surprise, replaced gradually by

attitudes of rejection, anger and anguish (Peterson BD et al., 2008), which also adversely affect the life of the relationship. The causes of infertility are evenly divided between male and female, but we can highlight how gender differences emerge clearly in the way of approaching the unsatisfied desire to have children. The female partners and male partners react to the experience and medical treatments differently, and the fact that the couple experiences infertility together does not mean it is experienced in the same way. The gender differences observed have several explanations. The experiences and the meaning of reproduction in women, very deep and rooted in the body, then binds to the value or importance that is given by the individual or by the couple to be parents and have children. It is important to assess this issue, to consider the place that parenting has in the construction of identity: if the value given to having children is high, the greater the discomfort when it turns out that one cannot have any. The results of many studies argue that the clearly greater anguish of women in response to infertility may reflect very well the social differences in the ways that women and men have to deal with adverse events and stress. Another gender difference is that – in most cases – it is the woman who takes the responsibility to start the diagnostic process. It is she who first recognises the problem, that arranges the first appointment with the specialist to appear later in the company of her partner. Why are women more familiar with doctors? For the role that historically they have for everything related to care? Or maybe because fertility and sterility are still socially viewed as a “woman thing”? The reproductive biology of the woman, although more complex than that of men, is best known; women are subjected to a greater number of diagnostic tests and are the focus of medical intervention, even in the case of male factor. In addition, the diagnosis of a male factor is more strongly associated with sexual problems, compared to diagnosis of the female factor. Recent research, however, suggests another interpretation: that the different psychological reaction of men and women to infertility should be interpreted through a better understanding of gender differences in reaction to stress, emotional stress and pain rather than as a specific reaction to infertility (Fisher JRW et al., 2010). These differences make communication and having to make decisions very difficult: in couples counselling, personal strategies put in place to deal with infertility should receive equal attention and the gender difference should be clarified and defined, so that it becomes a resource and not a problem.

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5.1.8 Menopause and premature menopause

Angelamaria Becorpi - University Hospital Careggi, Florence

Vincenzina Bruni - University of Florence

Sonia Baccetti - Referral Centre for Complementary Medicine, Region Tuscany, Florence

Zelinda Tredici - University of Florence

Epidemiology

In Italy the mean age at natural menopause is 50.8 years. Approximately 1% of women reach menopause before aged 40 (Premature Ovarian Insufficiency) and 10% between 40 and 45 years. Among women who are younger than 40, 3.4-4.5% of these women have an iatrogenic menopause resulting from surgery, drug therapy or radiation. International data define 51.4 years as the menopause mean age in Caucasian populations (Gold EB et al., 2001).

Clinical manifestations

The prevalence of climacteric symptoms in women treated at Italian Centers for Menopause is: 50% for vasomotor symptoms, 45% for mood, sleep and memory disorders, 50% for irritability, 35% for headaches and 25% for urinary problems (Progetto Menopausa Italia 2005). More than 60% of women in peri-postmenopause present a decline of at least one aspect of sexuality (desire, frequency of intercourse, ability to reach orgasm, and satisfaction). The characteristic estrogen deficiency of menopause, in association with age, tends to increase the risk of developing osteoporosis and cardiovascular disease.

Hormone Replacement Therapy

Over the last decade, mainly from the period following the publication of data from the WHI American Study in 2002, there has been a steady decline in Italy's use of prescription drugs for hormone replacement therapy (HRT). International Guidelines have reaffirmed the importance of hormone replacement therapy in the treatment of the symptomatic patient. After the appropriate selection of the patient to be treated, hormone replacement therapy is advised beginning in the early stages of menopause and continuing for an optimal period of three to five years.

Complementary Therapies

Phytoestrogens and homeopathic preparations are considered natural alternatives for reducing the symptoms of estrogen deficiency. RCTs demonstrate the efficacy of acupuncture in reducing climacteric symptoms and thereby improving the quality of life. The availability of complementary medicines in the Regional health care system facilitates their growing use among women in Tuscany: the introduction in regional LEA (essential levels of assistance) of acupuncture, herbal medicine and homeopathy ensures equal access to complementary medicine outpatient services in Tuscany.

Premature menopause

Premature ovarian insufficiency (POI) reflects a condition of amenorrhea lasting at least 4 months, characterized by an increase in FSH levels over 30-40 UI/liter and 17 Betaestradiolo levels less than 50 pg/ml in at least two controlled assessments carried out after one month. The incidence is 1% in women under the age of 40 years old, 0.1% under the age of 30 years old, 0.01% in women aged less than 20 years old. In 76% of cases this condition is expressed as secondary amenorrhea after regular menstrual cycles; in 10% of cases as primary amenorrhea (Orshan SA et al., 2009). POI may be a consequence of different causes, see **Table 5.4**.

Clinical characteristics

There are various clinical expressions modulated on a basic pathology with a common denominator: the state of hypoestrogenism. The consequences are immaturity of the genital tract and failure to achieve peak bone mass or osteopenia and osteoporosis, vulvovaginal atrophy, increased risk of cardiovascular disease, decreased libido and decreased self-esteem.

Therapy

Therapy is based on two basic conditions: POI etiology and patient age at the time in which it arises. Therapy objectives are: completion/acquisition of peak bone mass and subsequent prevention of osteopenia and osteoporosis; estrogenizing lower genital tract with preparation for assisted reproduction programs; inducing menstruation and its maintenance; prevention of cardiovascular disease; improvement of cognitive function and personal well-being .

Table 5.4
The most common and least common causes of POI

The most common causes of POI	The least common causes of POI
Chromosomal abnormalities (gonadal dysgenesis with or without Turner syndrome)	Part of multiple endocrinopathies: <ul style="list-style-type: none"> - Hypoparathyroidism - Hypoadrenalism - Mucocutaneous candidiasis
Premutation of the X chromosome (FMR1 gene) Fragile X Syndrome	Autoimmune diseases : <ul style="list-style-type: none"> - Autoimmune lymphocytic oophoritis - Sjogren's Syndrome - Myasthenia gravis - Rheumatoid arthritis - Systemic Lupus Erythematosus
Drug therapy or radiation damage	Viral Infections Galactosemia
Adnexectomy	Sarcoidosis

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5.1.9 Sexual Identity

Alessandra D. Fisher, Helen Casale, Giovanni Castellini, Mario Maggi - University of Florence

Sexual identity is defined by four distinct components: biological sex, gender identity, gender role and sexual orientation (K Zucker, 2002). Biological sex is determined by sex chromosomes, while gender identity indicates the persistent sense of oneself primarily as a man or as a woman. The acquisition of gender identity is a process that involves both cognitive and affective dimensions. Gender role indicates the outward expression of gender identity and it represents what a person says or does to indicate their own sex to others or to themselves. Gender role is a social construct that depends on the historical moment and on the cultural context. Finally, sexual orientation refers to the individual response to a sexual stimuli and to sexual preference. Sexual orientation is not dichotomous, but it extends along a continuum ranging from exclusive heterosexuality to homosexuality exclusivity. Typically, gender identity, gender role, and sexual orientation are mutually consistent, but different relationships between them should be considered. For example, the gender variant refers to the entire spectrum of people with a gender behavior (i.e., gender role) and atypical variant gender identity (commonly referred as transgender) to define the full spectrum of people who identify themselves in a different gender category from that assigned at birth.

Gender Dysphoria (GD) is a condition characterized by a marked discrepancy between the perceived and expressed gender and it is associated with clinically significant distress or limitations in social functioning, occupational condition or other important areas of functioning (DSM 5, 2013). Transsexuals are those GD subjects who suffer from an extreme form of GD that requires a full transition (i.e. a sex reassignment surgery) to relieve their suffering. GD subjects can be female (female to male: FtM) or male (male to female, MtF), with a prevalence of 1:30,000 and 1:10,000 respectively (Gomez- Gil E 2009).

From a clinical point of view, FtM are considered a homogeneous group. They show a childhood transsexual identity, a preference towards male games, sexual orientation towards persons of their own biological sex. They perceive breast development and menarche with high distress. MtF subjects are categorized into two subgroups: the first shows GD during childhood (Primary Transsexualism), sexual orientation towards people of the same biological sex. The second subtype is characterized by the post-pubertal onset of transsexual identity, a history of homosexuality or transvestism (Secondary Transsexualism) and a more variable sexual orientation.

Clinical interventions for GD can vary according to the needs of the individual. Psychotherapeutic support is often provided to modify the gender role, as well as cross-sex hormone therapy which can induce bodily changes. In some cases sex reassignment surgery is the last phase of the treatment.

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5.1.10 Sexual dysfunctions

Donata Villari – University of Florence – University Hospital Careggi, Florence

Roberta Giommi – Research, Education, and Training Institute of Florence, International Sexology Institute of Florence

Male sexual dysfunctions

Sexual health is fundamental for the well-being of an individual. It is characterized by the ability to have sexual intercourse that satisfies both the individual and the partner. Many factors are at play – the psychological sphere, hormonal balance, diseases of the urinary tract and of genital organs, neurological disorders, and others. This is why andrology is a highly interdisciplinary branch of medicine, bringing together medical, surgical, endocrinological and urological specializations. The most important male sexual dysfunctions include problems with ejaculation, orgasm and erection.

We speak of premature ejaculation when it occurs after only minimal stimulation or just after penetration, or in any case before the man and/or the couple desire it. It is therefore the result of poor voluntary control and leads to the discomfort and/or suffering of one or both partners. The phenomenon is underestimated in every age group. It would seem to affect over 20% of the adult male population, although only 9% of males discuss the problem with a doctor. The therapy employed integrates behavioral, pharmacological and psychological approaches.

As we have already said, males suffering from disturbances in the sexual sphere are reluctant to confide in their family doctor and tend to avoid meeting with a specialist. This is the reason for estimates in default of the prevalence and incidence of andrological disturbances. Regarding erectile dysfunction (ED), i.e. the inability to reach and/or maintain an erection that permits sexually satisfying intercourse, data from the “Gruppo Italiano Studio Deficit Erettivo [Italian Group for the Study of Erectile Deficit]” show a prevalence of 12.8 % of the phenomenon. It is estimated that in Italy more than 3,000,000 men are affected. ED tends to increase with age, starting from 2% in the 18-39 year old age group, reaching 48% in the over-70 group. A medical history of heart disease, diabetes, hypertension, neuropathy or past ischemic vascular-based incidents determine a significant increase in risk, and this is especially true when both hypertension and diabetes are present. Habitual smoking, excessive drinking and drug use also constitute important risk factors (Parazzini F et al, 2000). A separate chapter is represented by ED following trauma or perineal pelvic surgery, when the latter is the cause of iatrogenic denervation.

Once the objective of radical oncology has been achieved, today’s refined surgical techniques allow us to aim at guaranteeing best possible functional outcomes in terms of sexual potency and early recovery of continence. Tuscany has made outstanding progress towards this goal, being the only Region in Italy to guarantee, since 2006, free access (i.e.

covered by the Regional Health System) to the whole range of ED-rehabilitative drugs, not only for medullary-damaged patients but also for those who have undergone radical prostatectomy or nerve-sparing pelvic surgery. This has guaranteed early andrological rehabilitation, with improved compliance with therapy and dosages and decreased drop-out.

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Female sexual dysfunctions

A satisfying sexual life is fundamental for the health and well-being of women, too, as well as for the quality of their personal life and the life of the couple (1).

The classification of female sexual disorders (FSD) according to DSM-IV, which follows the tri-phasic model of sexual response (desire, arousal, orgasm) as developed by Kaplan in 1979, identifies the 4 main categories of dysfunctions in 4 main domains: desire, arousal, orgasm and the presence or absence of coital pain. But it is clear that in this sphere we must take into consideration personal and relational situations, being careful not to propose a classificatory system that mirrors male sexual disorders and to maintain a distinction between women's biological and psychological nature. We must also take into consideration socio-demographic features such as age, schooling, physical and mental health and past sexual and relational experiences.

Following this system of classification, an American epidemiological study reported that about 20-50% of American women between 18 and 59 are affected by FSD. Roughly a third of women report loss of sexual interest and around one fourth do not reach orgasm. What is more, about 20% of women report difficulty with lubrication, and 20% do not find sex pleasurable. There are no available studies of the Italian population based on univocal criteria.

As with males, an approach that brings together a variety of professional competences is needed so as to understand the specificity of women. The healing of body and psyche must be accompanied throughout the woman's life cycle by the close collaboration of endocrinologists, urologists, gynecologists and sexologists.

During her life, a woman's body undergoes continual changes. Over history, existing cultural codes and feminine role models have been confused and conflicting. Thus, awareness is needed so that women can take possession of the sexual act with reciprocity and care, in order to protect themselves against undesired pregnancies and sexually-transmitted diseases and to learn to manage the hard work of maternity while achieving the difficult union of the pregnant-and-nursing-body with the body of the erotic woman.

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5.2 Children's health

5.2.1 Health in childhood

Franca Rusconi - Meyer University Children's Hospital, Florence

Carolina Amador - Meyer University Children's Hospital, Florence

Monia Puglia, Simone Bartolacci - Regional Health Agency of Tuscany, Florence

This chapter considers some general information about health in childhood by addressing possible gender differences.

Births

Over the last ten years in Tuscany, the male/female birth ratio ranged between 1.04 and 1.07 (data from the Birth Assistance Certificate database). The excess of male-gender births is similar to that reported for the same period both in Italy (male/female ratio 1.05 to 1.06) (ISTAT) and in Europe (ratio male/female: 1.06) (World Factbook).

Diseases and hospital admissions

Reports of the Ministry of Health on hospital admissions in childhood show that in Tuscany, as well as in the rest of Italy, males have a higher rate of hospitalization than females for all age groups, and this has been observed both for ordinary regime admissions and day-hospital admissions. In Tuscany the highest rate of hospitalization of males occurs for several groups of diseases, including those most frequent in children: neonatal disorders, diseases of the respiratory, digestive and nervous systems, kidney and urinary tract, and the cardiovascular system. It is likely that these differences reflect a biological disadvantage in the male gender.

Gender differences in morbidity are confirmed by the Multiscopo ISTAT, an annual sample survey conducted on aspects of everyday life. In fact, in the group aged 0 to 14 years, 10.7% of males were affected by at least one chronic disease compared to 8.3% of females.

As regards domestic accidents, a higher rate has been reported in males for the first 5 years of life only, while from 6 to 14 years the rate is higher in females (11.8 per 1000 in females compared to 6.9 per 1000 in males). This probably reflects a different way of life starting from early childhood.

Mortality

In agreement with the international literature data, (Balsara SL et al, 2013) mortality rates also show gender differences, with an excess of mortality in the male gender in different age groups (**Table 5.5**).

TIN Toscana on line, a Regional area-based register has been collecting data since 2009 on very preterm infants (gestational age <32 weeks or birth weight ≤1500 g) confirms a lower mortality in female newborns (OR: 0.76, 95% CI 0.52 to 1.12, adjusted for gestational age). Moreover, females have greater protection against diseases that are the cause of death and serious negative outcomes such as severe intraventricular haemorrhage or periventricular leukomalacia (OR: 0.64, 95% CI: 0.42 to 0.99) and bronchopulmonary dysplasia (OR: 0.79, 95% CI: 0.50 to 1.26). Also in this case our data reflect those reported in literature (Mohamed MA e Aly H, 2010; Stevenson DK et al, 2000).

Conclusions

In short, gender differences in terms of morbidity and mortality are probably due to a biological disadvantage of the male gender compared to the female gender that presumably already starts *in utero*, as demonstrated by the differences already existing from the first days of life in preterm infants.

Current knowledge does not allow us to advance any convincing pathophysiological hypothesis to explain the male disadvantage.

Table 5.5
Mortality rates by age and gender (per 10,000 residents) in Tuscany. Years 2008-2010

Age	Male	Female
<12 months	28,8	27,1
1-4 years	1,2	1,0
5-9 years	1,0	0,9
10-14 years	1,3	0,8

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5.2.2 Congenital malformations

Anna Pierini^{1,2}, Federica Pieroni², Fabrizio Bianchi^{1,2}

(1) National Research Centre, Pisa

(2) Tuscan Foundation "Gabriele Monasterio", Pisa

Congenital Malformations (CMs) are defects of shape or structure of an organ, developed during the embryonic or foetal period. Heterogeneity of phenotype and etiopathogenesis is relevant both among and within groups of CMs.

A single CM can have an occurrence ranging between 1/100 births for cardiac anomalies, 1/3,000-5,000 births for diaphragmatic hernia or bilateral renal agenesis, and 1/20,000 births for gastroschisis; all CMs account for 3-5% of newborns, according to ability and modality of diagnostic ascertainment, exclusion/inclusion criteria and maximum age at diagnosis. An occurrence of around 2% is estimated considering only structural defects diagnosed within the first week of life (www.eurocat-network.eu).

Since the 70's, following the thalidomide tragedy, many registry-based surveillance systems were activated worldwide. In Italy, registrations began in Emilia Romagna and Tuscany at the end of the 70's. In 2008 the Tuscany Registry of Congenital Defects (RTDC) was officially defined as a 'disease registry of relevant health interest'. About 95% of births and pregnancy terminations involving those resident in Tuscany are registered in the RTDC. In 2011, 616 cases with CM out of 30,181 births were registered, with a prevalence of 2.04/100 births (www.rtdc.it).

Since the 80's RTDC has been participating in ICBDSR-International Clearinghouse for Birth Defects Surveillance and Research (www.icbdsr.org/) and EUROCAT-European Surveillance of Congenital Anomalies (www.eurocat-network.eu) (Greenless R, 2011). The RTDC description and registration protocol are reported in www.eurocat-network.eu/content/Reg-Des-Tuscany.pdf. The greater number of males than females at birth is well recognized and largely unexplained.

Recent epidemiological studies report a M/F Sex Ratio (SR) ranging from 1.04 and 1.06 (Lemire RJ, 2002; Macfarlane AJ, 1999; Ohmi H, 1999). Out of 549,930 births surveyed between 1992 and 2011, 7,523 males and 5,335 females with CM were registered by the RTDC, with a SR of 1.41. Considering 28 groups of CMs, the sex of 3,196 cases (births and pregnancy terminations) was studied. Compared to the reference (SR=1.06), a male excess for 20 groups and a female excess for 6 groups was observed, while an equal SR emerged for 2 groups (**Table 5.6**). From the comparison with the SRs observed by the ICBDSR multicentre study based on 138,648 cases collected by 18 registries from 24 countries, SR in RTDC resulted similar for 19 CMs. Sex distribution can be useful to characterize single CMs and support etiological hypotheses. For example, male predominance observed both for hypoplastic left heart and coarctation of aorta could support the hypothesis of a pathogenic relationship.

The results of 20 years of RTDC activity give risk estimations of male predominance for total and specific CMs and of female predominance for other conditions. These indicators of etiopathogenetic similarities and differences may be useful for research and health planning.

Table 5.6
Gender distribution by type of congenital anomalies, Tuscany Registry of Congenital Defects (1992-2011)

Congenital anomalies	Total Cases	Males	Females	% M/Total	Sex Ratio M/F	RR	% M/Total ICBD*	Expected M	Expected M/F	Test
Neural tube defects										
Anencephaly	54	27	27	50,0	1,00	0,94	37,3	20,142	0,59	n.s.
Spina Bifida	87	47	40	54,0	1,18	1,11	47,5	41,325	0,90	n.s.
Encephalocele	26	12	14	46,2	0,86	0,81	43,1	11,206	0,76	n.s.
Other central nervous system defects										
Arhinencephaly/holoprosencephaly	12	4	8	33,3	0,50	0,47	39,3	4,716	0,65	n.s.
Hydrocephaly	74	40	34	54,1	1,18	1,11	56,5	41,81	1,30	n.s.
Eye defects										
Anophthalmos	4	1	3	25,0	0,33	0,31	53,2	2,128	1,14	n.s.
Microphthalmos	11	6	5	54,5	1,20	1,13	46,5	5,115	0,87	n.s.
Ear, nose, cranio-facial defects										
Anotia	8	5	3	62,5	1,67	1,57	62,6	5,008	1,67	n.s.
Bilateral choanal atresia	15	8	7	53,3	1,14	1,08	45,7	6,855	0,84	n.s.
Cleft palate without cleft lip	149	58	91	38,9	0,64	0,60	43,5	64,815	0,77	n.s.
Cleft lip with or without cleft palate	256	170	86	66,4	1,98	1,86	64	163,84	1,78	n.s.
Heart defects										
Transposition of great vessels	138	100	38	72,5	2,63	2,48	66,9	92,322	2,02	n.s.
Tetralogy of Fallot	110	53	57	48,2	0,93	0,88	56	61,6	1,27	n.s.
Hypoplastic left heart	98	64	34	65,3	1,88	1,78	62,9	61,642	1,70	n.s.
Coarctation of aorta	107	69	38	64,5	1,82	1,71	58,1	62,167	1,39	n.s.

Gastrointestinal defects										
Oesophageal atresia	66	40	26	60,6	1,54	1,45	57,9	38,214	1,38	n.s.
Atresia/stenosis of other parts of small intestine	32	16	16	50,0	1,00	0,94	49,3	15,776	0,97	n.s.
Ano-rectal atresia or stenosis	63	46	17	73,0	2,71	2,55	65,3	41,139	1,88	n.s.
Urinary defects										
Renal agenesis	30	21	9	69,0	2,22	2,10	67,1	20,13	2,04	n.s.
Limb defects										
Polydactyly	331	210	121	56,1	1,28	1,20	57,8	191,318	1,37	n.s.
Limb reduction	148	83	65	56,1	1,28	1,20	55,3	81,844	1,24	n.s.
Abdominal wall defects										
Diaphragmatic hernia	68	45	23	66,2	1,96	1,85	58,7	39,916	1,42	n.s.
Omphalocele	39	21	18	53,8	1,17	1,10	56,3	21,957	1,29	n.s.
Gastroschisis	23	12	11	52,2	1,09	1,03	50,7	11,661	1,03	n.s.
Prune belly sequence	4	4	0	100,0			81,8	3,272	4,49	n.s.
Chromosomal										
Trisomy 13	62	27	35	43,5	0,77	0,73	51,2	31,744	1,05	n.s.
Trisomy 18	169	91	78	53,8	1,17	1,10	43,4	73,346	0,77	<0,05
Trisomy 21	896	481	415	53,7	1,16	1,09	52,7	472,192	1,11	n.s.

RR: deviations from expected ratio in the general population (M/F=1.06);

* reference % males from ICD9 study (Lisi et al., 2005);

n.s. not significant.

5.3 Adolescents' health

5.3.1 Some behaviours at risk: driving behaviour and bullying

Fabio Voller - Regional Health Agency of Tuscany, Florence

The density, variability and relevance of what happens in adolescence cannot be compared with that in any other age. It is exactly in this period that one is most likely to start smoking, drinking, driving, taking drugs and tobacco. In this section we will identify some areas of risk that concern the adolescent population and that can be better broken down taking gender-related differences into account. Moreover, we will particularly concentrate on acute events, represented in a paradigmatic way by road accidents and bullying. The possibility to take a look into the matter in this context is provided by a study called Epidemiology of the determining factors of road accidents (EDIT), aimed at investigating the driving behaviours and other lifestyles at risk, in a sample of students and secondary state schools in Tuscany. The EDIT sample (Voller et al., 2011) was formed in 2011 by 4,829 teenagers between the ages of 14 and 19. **Table 5.7** shows the percentages referred to some possible risk factors associated with road accidents, and divides regular drivers into two categories: “those that claimed to have had at least one car accident in their course of the lifetime” and “those that claimed to have had no accident.”

The breaking down of the two genders is quite symmetrical, with the exception of the consequences of driving for some behaviours that are typically masculine such as having repeated at least one academic year (no accidents NA: 22.2% vs. at least one accident AOA: 40.1%, $p < 0.001^*$), that for females shows less strong differences (NA: 19.0% vs. AOA: 28.1%, $p = 0.014^*$), and having the attitude of a bully (NA: 21.4% vs. AOA: 27.2%, $p = 0.038^*$), that instead, even though the data are not statistically significant, shows homogenous results in terms of consequences for the female gender (NA: 15.2% vs. AOA: 15.7%, $p = 0.867$). In summary, if it is true that males in general have higher numbers of road accidents, females in the regional subgroup of adolescents show a risk which is at times higher than that of their male peers, for example in the case of “driving after having drunk too much.”

Moving on to the subject of bullying, this represents an important problem for public health.

With respect to parameters such as gender and age, it is clear that bullying concerns both males and females, but with some differences: males are more likely to be perpetrators of direct bullying, hitting both males and females; females however, use a form of indirect bullying targeting mainly other female peers, with a prevalence in episodes of spreading false or malicious information against them. In general, the actions of bullying reduce with the age.

Table 5.7
% frequency of the characteristics of the group of regular drivers, broken down into the two groups of those who said that they had road accidents and those who said that they had no road accidents – Tuscany, year 2011 (Source: ARS processing of EDIT data)

Characteristic	Males		Females		p-value
	No accident (NA)	At least one accident (AOA)	No accident (NA)	At least one accident (AOA)	
Age					
≤14	12.7	4.2	8.6	4.5	
15	18.6	9.8	13.4	6.6	
16	13.9	16.7	12.4	14.2	0.025*
17	16.4	17.2	14.5	16.0	
18	16.5	22.4	22.2	25.3	
≥19	16.5	29.6	29.1	33.4	
Lifestyles and educational aspects					
Drug use (<i>in the last year</i>)	27.2	48.2	22.0	46.4	<0.001*
Binge drinker (<i>in the last month</i>)	33.1	53.8	25.9	43.0	<0.001*
Has repeated at least one academic year	22.2	40.1	19.0	28.1	0.014*
Attitude of a bully	21.4	27.2	15.2	15.7	0.0867
Early sexual intercourse	11.5	26.5	12.0	19.0	<0.001*
Driving-related aspects					
Driving after having drunk too much (<i>in the last year</i>)	20.1	41.7	8.0	26.3	<0.001*
Driving after having taken drugs (<i>in the last year</i>)	9.1	24.4	5.7	17.5	<0.001*
Talking on the phone whilst driving (<i>in the last week</i>)	20.0	36.4	22.3	37.3	<0.001*
Smoking a cigarette whilst driving (<i>in the last week</i>)	11.5	26.5	12.1	26.1	<0.001*

Significant p-value: <0.05

In Tuscany, according to what has emerged from the EDIT study (Voller et al., 2011), out of a total of 4,743 children involved, 19.2% claimed to have been subjected to bullying in the last year, with a difference in gender that identifies females as those most involved (16.6% vs. 22.1%). On average, 56.8% suffered from bullying one day (or less) a month with a majority, in terms of frequency, going to the female gender. The places in which these actions take place are in the school grounds (internal and external) and meeting places. In this case there were no gender-related differences observed.

Finally, in Tuscany, amongst those that assisted an act of bullying, only 32.1% of males and 41.2% of females intervened in defence of a victim, either directly or through the involvement of adults. Males, as well as being less willing to defend the victim, to a greater extent join the bullies (2.9% vs. 0.9%) or laugh (10.8% vs. 3.5%) assisting their actions.

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5.3.2 Sexual behaviour and contraception

Mariarosaria Di Tommaso - University Hospital Careggi, Florence
Caterina Silvestri – Regional Health Agency of Tuscany, Florence

From the last edition (2011) of the Edit Study (Epidemiology of determinants of road accidents in Tuscany) - a survey carried out by the Tuscan Regional Health Agency on the main risk behaviors of adolescents in Tuscany between 14 and 19 years old – an interesting consideration regarding the sexual behavior of adolescents emerges in term of contraception, helping us to evaluate the influence of gender. In both genders the age at first intercourse is 15.5 years old. This points out that the beginning of sexual life is strictly age-dependent and is not affected, as in the past, by the influence of gender. Conversely, in relation to the number of partners, girls refer diversified behaviors more frequently than males that have experienced a greater number of partners. Males use condoms to a greater extent than females, although the use decreases with increasing age in both genders and in number of partners, particularly in females. The consideration that the use of other contraceptives, especially in females, is accompanied by a reduction in the use of condoms indicates females' reduced attention to the prevention of sexually transmitted diseases (STD) in relation to the prevention of pregnancy. On the other hand, also the consideration of the high cost of condoms that is felt more by males than females places it among the means of contraception which the male takes charge of. Finally, the non-use of contraceptives that characterizes most males emphasizes a more responsible sexuality in females.

In conclusion, in terms of gender differences in the context of adolescent sexuality and contraception, the following are emphasized: a) the more pronounced multiplicity of partners that occurs in males, b) the lower sensitivity of females regarding the prevention of STDs; c) the greater attention of females as regards contraception; d) the use of condoms which is more the preserve of males than females, although it is unclear whether this reflects a greater awareness of the prevention of STDs or it is only linked to the male's lower risk of contraceptive choice.

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5.4 Foreign population

*Monica Da Frè, Caterina Silvestri - Regional Health Agency of Tuscany, Florence
Valeria Dubini - Local Health Unit 10 of Florence*

Foreign citizens registered to the National Health Service (NHS) enjoy equal treatment and full equality of rights with respect to Italian citizens. If a foreign citizen does not have VISA, a “temporarily present foreigner” identification card ensures them care services, prevention and rehabilitation.

An ISTAT survey on health conditions and the use of health services of the foreign population resident in Italy (Year 2005) shows a picture of a foreign resident population with health needs which are quite similar to those of the Italian population but in better health conditions (ISTAT, 2008).

Hospitalization

The proportion of non-Italian citizens discharged from hospitals in Tuscany (excluding the healthy newborn) is increasing: in 2000 it was 3.3%, and 7.6% in 2012. This proportion is higher among females: foreigners represent 9.5% of hospitalized women and 5.3% of hospitalized men.

Hospitalization rates are higher in women than men among aged 15-39, mainly for problems related to pregnancy, childbirth and the postnatal period. The hospitalization rate was higher among foreign women than men also in the range 40-64 years old (89.0 vs. 71.5 per 1,000 residents), while in children and in the elderly the rate is higher among males.

The top three causes of hospitalization (excluding day hospital) for Italian males are, in order: diseases of the circulatory system, cancer and diseases of the digestive system compared to injury and poisoning, digestive diseases and diseases of the circulatory system for foreigners from countries with high migration rates.

Admissions for complications of pregnancy, childbirth and puerperium represent more than half of the admissions of women from undeveloped countries (crude hospitalization rate of 50.8 per 1,000 residents) compared with 13.5% of admissions of Italian women (16.4 per 1,000). Foreign women are also hospitalized for diseases of the digestive system and, as a third cause, for cancer. Among Italians, the first cause of hospitalization were diseases of the circulatory system and the third were tumors.

As for Italian women the main cause of hospitalization for pregnancy, childbirth and puerperium consists in normal delivery (24.8%). For foreigners from undeveloped countries the main cause is induced abortion (23.0%) followed by the normal delivery (22.5%). For Italians induced abortion is the second cause but with a proportion which is almost half that of foreigners (12.4%).

Induced abortion

In 2012, 7,121 abortions were carried out in Tuscan hospitals: 56% of women of Italian nationality and 44% foreign women.

Induced abortion rates of foreign women (25.4 per 1,000 women aged 15-49) halved compared to 2003 but were four times higher than those of Italians which amounted to 5.9 per 1,000, a slight decrease compared to 2003 (7.6 per 1,000). The induced abortion ratio (induced abortions per 100 live births) has decreased over time but remains more than twice that of Italian women. Higher ratios are reported among Peruvian women (138 per 100 live births), Nigerians (71), Romanians (65), Moldovans (57) Ukrainians (51) and Filipinos (44). The proportion of women who have had previous abortions is higher among foreign women from undeveloped countries (42.8% vs. 19.5% of Italian): 24.2% of them have had one induced abortion, 11.1% have had two and 6.5% three or more vs. 15.4%, 3.0% and 1.1%, respectively for Italians. The proportion of repeated abortions is higher in women from Nigeria (53.0%), China (52.5%), Peru (50.0%), Cuba (48.3%) and Romania (48.3%).

Pregnancy and birth

In 2012, 31,234 deliveries occurred in Tuscan hospitals: 27.1% regarding women of non-Italian nationality mainly from undeveloped countries.

Foreign women from undeveloped countries present a lower educational level: 54.3% of foreign women have a low educational level compared to 19.4% of Italian women. The proportion of primiparous women is higher in the foreign population (44.4% vs 55.0%)¹.

The main difference between Italian and foreign women is their age on giving birth. The mean age on giving birth is 28.3 years for foreign women compared to 33.3 years for Italian women. Foreign women give birth before the age of 35 in 85.3% of cases, while Italian women deliver before the age of 35 in 57.1% of cases. In addition, women over 40 years old, that in our region represent 9.8% of Italian pregnant women, correspond only to 2.6% if we also consider foreign women.

Multiple pregnancies make up 1.9% of pregnancies of Italians and 1.4% of pregnancies of foreigners. The slightly higher prevalence of multiple births among Italians is due both to the higher maternal age but also to the increased use of medically assisted procreation (2.5% vs. 0.9%). Among the risk factors that may influence the outcome of pregnancy there is no difference in the prevalence of overweight or obese women between Italian and foreign women while Italians present the highest proportion of smokers (9.5% vs. 5.5% foreigners).

There are significant differences between Italian and foreign women in assistance during pregnancy, even though foreign women's access to services has improved in recent years.

¹ From hereinafter we refer to foreigners from undeveloped countries.

According to the WHO guidelines and the regional protocol, the first check-up should be made by the 12th week of gestational age and at least 3 ultrasounds should be performed. Foreign women perform less checks and ultrasounds than Italians: respectively 11.1% and 2.2% have the first check-up after the 12th week, 1.0% and 0.2% did not perform any examination in pregnancy, finally, 11.9% and 0.9% have less than 3 ultrasounds. In 2004, the proportion of women from undeveloped countries that performed the first check-up after the 12th week of pregnancy doubled (22.2%) and there was a much higher percentage of foreigners that did not perform any check-ups during pregnancy (7.1%). Finally, since 2004, the proportion of those who performed less than 3 ultrasounds (18.7%) has decreased.

In 2012 only 18.7% of foreign women of 35 years old or more have performed amniocentesis or chorionic villus sampling vs. 44.0% of Italians. The screening test for Down syndrome was performed by 77.2% of pregnant Italian women and by 50.8% of women from countries with high migration rates.

Foreign women presents a higher proportion of preterm newborns (<37 weeks): 7.6% of live births vs 6.7% of Italian live births. The difference is significant also when adjusted in terms of age, education, previous child, body mass index, smoking during pregnancy and multiple births.

Instead the proportion of low birth weight babies (<2,500 grams) seems to be higher among Italians (7.2%) compared to foreigners (6.4%) Even considering factors such as age, previous child, smoking during pregnancy, preterm birth and multiple births, being a foreign woman from a country with high migration rates is a protective factor (OR 0.87, 95% CI: 0.77-0.98).

In Tuscany, the immigrant population presents a lower hospitalization rate and gender differences are attributable to childbirth and induced abortion. Foreign women present a higher rate of induced abortion and a higher proportion of repeated abortions.

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5.5 The elderly and the super-elderly

Matilde Razzanelli – Regional Health Agency of Tuscany, Florence

In Tuscany, on 1 January 2011, there were 872,766 people aged 65 and older, 23.3% of the local population. On average, the population is evenly split between females and males. However, the older the age group, the more the distribution is skewed in favour of females: the ratio of females to males for people aged 95 and older reaches 4:1 (see **Table 5.8**).

This gender imbalance in the senior population decreased over the last 10 years, and a further decrease is expected, based on National Institute of Statistics (ISTAT) data. The longer life expectancy at birth for women is one of the factors skewing the sex ratio in the senior population: in Tuscany in 2011 a female at birth had a life expectancy of 85 years (versus 81.1 years for males). The life expectancy gap has been gradually decreasing since 1980, due to the fact that the life expectancy of men has been increasing faster than that of women. From 1980 to 2010 males gained 8.47 years of life expectancy at birth, while females gained only 6.43 years. Similarly, life expectancy for men at aged 65 increased by 4.77 years between 1980 and 2010, while women gained 4 years in the same period. On average, women still live about 5 years longer than men.

This greater longevity however seems to come with a lower quality of life. In a survey that we conducted¹, the percentage of senior women who report being little or not at all satisfied with their quality of life is double the percentage of men (28% versus 14%). Moreover, women experience health problems earlier than men, and can expect to live more years with a medical condition and/or a disability. Dissatisfaction with the quality of life seems to depend on the same factors for men and women: the presence of two or more medical conditions or the inability to perform at least one of the basic activities of daily living (BADL).

In Tuscany, 16% of senior citizens aged 65 and older have lost the ability to perform at least one BADL. The table reaches 28.3% with regards to the more complex activities known as instrumental activities of daily living (IADL). People having lost the ability to perform one or more IADLs are at a higher risk of developing a severe disability. Disability levels are similar across genders, with the exception of the age group of people aged 86 and older, where severe disability rates are higher for women. Disability levels for less severe conditions, like the inability to perform one or more IADL, are also similar across genders, although women are in general more limited in activities that

1 PASSI d'Argento Survey: an Italian project for the implementation of a national surveillance system on the population aged over 64 in order to collect information on quality of life, behavioural risk factors, health and health problems, perceived health care quality through a cross sectional survey. Full report: <https://www.ars.toscana.it/it/aree-d'intervento/la-salute-di/anziani/dati-e-statistiche/2421-salute-e-invecchiamento-attivo-in-toscana-risultati-della-sorveglianza-della-popolazione-con-65-anni-e-piu-passi-d-argento-indagine-2012-2013.html>.

involve leaving their house (such as shopping for groceries), managing finances or taking medicine (especially in older age ranges).

Dementia is the most frequent cause of disability in subjects aged 65 and older. It is one of the diseases with the greatest impact on both the quality of life of older people and their families and on support services. We estimate that in 2011, in Tuscany there were more than 86,000 seniors with dementia, 67% of whom were women (n = 57,875). Prevalence rates in the population double from age group to age group as age increases: 1.1% in people aged 65 to 69 years old, reaching 31.5% in people aged 85 and older. Age-specific rates of dementia are similar across genders, however the number of women with dementia is nearly double than that of men. This is probably a result of the higher longevity of women, whose illness lasts longer.

In conclusion, our analysis of Tuscan population data confirms the previous findings of the public health literature: women live longer lives than males, but their health and functional abilities are worse than what is observed in the male population.

Table 5.8
Main characteristics of the elderly in Tuscany by gender and age

		Male	Female
		years	years
Years of Life Expectancy*	At age 65	17,8	21,7
	Disability-free, at age 65	15,3	16,6
	Healthy, at age 65	4,3	3,7
		%	%
2+ diseases**	65-74	43	37
	75-84	57	53
	85 +	60	68
	65 + (age-standardized)	49	45
BADL disability**	65-74	3	4
	75-84	14	20
	85 +	42	53
	65 + (age-standardized)	11	14
IADL disability **	65-74	20	21
	75-84	33	39
	85 +	34	35
	65 + (age-standardized)	25	28

*Source: ISTAT. Health for All datasets 2005.

** Source: PASSI d'Argento 2012 - Pool Toscano.

Chapter 6

Access to health services

Prevention

Hospitalization

Emergency health care

Transplants

Gender and drugs

Complementary medicines

6. Access to health services

6.1 Prevention

6.1.1 The HPV vaccination

Emanuela Balocchini, Sara Gallicchio - Region Tuscany, Florence

Since 2008 the Tuscany Region started a vaccination campaign against the human papillomavirus (HPV) infection types 16 and 18. The primary target population for this vaccination is 11-year-old females prior to turning 12. A free-of-charge vaccination is actively offered to all girls aged 12 and 16 and upon the request of a parent, to those who are not actively advised to be vaccinated, aged 13, 14, 15, 17 and 18. They retain the right to start the vaccine until a maximum age of 18.

Involved girls, residing in Tuscany, are encouraged by a letter which is sent to them from the Local Health Units (USL) to get vaccinated at the local vaccination centers. The vaccination against HPV consists of three doses of intramuscular injections in the arm over six months.

In order to promote and support the new regional program 2012-2015 for the HPV-vaccination, informative material has been prepared for the families of these teens, in Italian and 8 other foreign languages (Albanian, Arabic, Chinese, English, Polish, Romanian, Spanish and Tagalog). The material also includes a section with specific FAQs. The information material is available online on the website of the Region and distributed in vaccination centers, clinics, counselling centers and pharmacies.

Beyond the HPV vaccination, screening (PAP test and HPV test) remains essential in order to reduce cervical cancer.

The National Vaccine Prevention Plan (PNPV) 2012-2014 expects to vaccinate $\geq 70\%$ of the 12-year-old girls belonging to the 2001 birth cohort with the 3 HPV-vaccine doses; $\geq 80\%$ of those belonging to the 2002 cohort; $\geq 95\%$ of those belonging to the 2003 cohort. The first regional HPV vaccination program planned to vaccinate 75% of the girls belonging to the 1997-2000 cohorts with the 3 doses. The new one confirms the HPV vaccination and introduces the target of 70% for the 2001 birth cohort in 2013.

Table 6.1 shows the regional data related to the 1997 birth cohort (actively called to vaccinate in 2008) and the 1998, 2000 and 2001 ones as well as the number of vaccination doses at 31/12/2013. The data concerning the 2001 birth cohort is not yet final as its collection at 30/06/2013 was not yet complete in all regional territories (only 7 of the 12 Tuscan USL completed the call); furthermore, the 3rd dose is given 6 months after the first one.

At 31/12/2012 the vaccination coverage against HPV – including the 3rd dose – ranged from 71.2% to 93% for the 1997 birth cohort; from 65.2% to 92.9% for the 1998 birth cohort; from 67.5% to 92.9% for the 1999 birth cohort; from 61.6% to 92.3% for the 2000 birth cohort and from 0% to 77.1% for the 2001 birth cohort.

Table 6.1
HPV data collection per dose at 31/12/2012

Birth cohort	% with 1 dose vaccine	% with 2 doses vaccine	% with 3 doses vaccine
2001	69,1	61,3	28,4
2000	85,7	83,0	77,2
1999	85,1	83,4	80,7
1998	85,4	84,2	80,9
1997	88,3	86,4	83,8

In Italy, all regions started to offer the vaccination against the HPV-infection types 16 and 18 by the end of 2008, as a result of the agreement of the 20th December 2007 between the Ministry of Health and the Regions/Autonomous Provinces, vaccination is now offered actively and free of charge to all 12-year-old females through the vaccination centers of the National Health System in all the Regions.

The Department of Epidemiology and Infectious Diseases of the National Centre for Epidemiology, Surveillance and Health Promotion (CNESPS) of the Higher Institute of Health submitted a six-month data report (where last monitoring was in 2013) concerning the progress made in the vaccination campaign against HPV at 31/12/2013. The data show that the total national coverage with three doses of the HPV-vaccine for the 1997 birth cohort is 68.5%. There is a wide disparity among the regions (25-84%) with Sardinia (84.1%), Tuscany (83.8%) and Basilicata (82.4%) showing higher coverage rates.

The average national coverage with three doses of HPV-vaccine by the 1998 birth cohort is 67.8%, with the higher coverage rate in Tuscany (80.9%), Basilicata (80.5%) and Apulia (79.4%).

The average national coverage with the three doses of the HPV-vaccine by the 1999 birth cohort is 66.3%, with a higher coverage rate in Tuscany (80.7%), Apulia (76.7%) and Basilicata (74.8%).

The average national coverage with the three doses of the HPV-vaccine by the 2000 birth cohort (data is not yet complete) is 54.4%, with a higher coverage rate in Tuscany (77.2%), Emilia Romagna (69.4%) and Basilicata (65.6%).

6.1.2 Cancer screening

Paola Mantellini – Institute for Cancer Research and Prevention, Florence

Organized screening programmes in Tuscany region

Screening for breast, cervical and colorectal cancer are considered Essential Levels of Assistance. Resident women aged 50 to 69 years old and women 25-64 years old are invited to mammography and cervical screening respectively. Men and women aged 50 to 70 years old are invited to colorectal cancer (CRC) screening. In Tuscany screening for cervical cancer and breast cancer has been ongoing since 2000 covering almost the entire population (99.2% in 2009-11 and 90% in 2010-11). CRC screening is constantly rising reaching 92% coverage in 2012.

National data from the National Screening Monitoring Centre (ONS) in 2011 show a coverage of 67%, 74% and 55% for cervical, mammography and CRC screening respectively.

Attendance

The 2012 participation rate in cervical and mammography screening accounted for 56% and 72.6%, respectively. An increasing trend in cervical and a substantial stability in mammography screening was observed. In both these programs, attendance to diagnostic assessment was also high. These results confirm that the “loyalty” of women was very high. Women attended CRC screening more than men (51.7% vs. 47.3%). This trend was lost with age and attendance to colonoscopy assessment is slightly lower in women than in men (77.3% vs. 78.5%).

Recently migrant women have been focused on: access to the program is made difficult by the lack of updating of Municipality registers that do not always record the frequent changes of residence of this population. Participation is lower than that in women born in Italy and decreases with age. To understand the impact of screening on women at different socio-economic levels a recent analysis on breast cancer survival involved women with different socio-economic levels in three different periods: before the introduction of screening (1985-1986), in the first two rounds of screening (1991-1995) and in the subsequent two (1996-2000). In the no-screening period, “deprived” women had a survival chance 12 percentage points lower than those of the reference class. This survival difference disappears in the next two periods (1991-1995 and 1996-2000) in women in the age group 50-69 years old that were actively invited to screening. On the contrary, no changes were reported in women below 50 years old.

Spontaneous screening

The PASSI investigation stated that 58% of 40-49-year-old women had had a preventive mammogram in the past two years. Analysis of the regional

outpatient services in 2010 shows about 32,000 women aged 45-49 attended mammography screening, approximately 20% of the entire population. Despite the recommendation which was not in favour of a population-based screening for prostate cancer in 2004-2005, high PSA use was observed with the highest peak between 70 and 74 years old (37% in 2004 and 41% in 2005). More recently, the comparison between the 2008-2010 and the 2011-2012 periods shows, in the age range 70-79 years old, a reduction of 9.5%.

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6.2 Hospitalization

Paolo Francesconi, Elisa Gualdani, Laura Policardo, Giuseppe Seghieri - Regional Health Agency of Tuscany, Florence

Hospitalization in Tuscany during 2011

Tuscany inhabitants, during 2011, accessed hospitals 572,000 times (in both regimes, ordinary and Day Hospital), with a mean of 152.6 discharges every 1,000 inhabitants.

Women tend to use the hospital – on average – less than men, with the only exception of women aged between 15 and 44, where we can reasonably assume their prevalence is due to childbirths.

Ordinary hospitalizations represent about 75% of all hospitalizations and gender differences reflect the same findings of total hospitalizations.

The Day Hospital regime represents about 25% of all hospitalizations and is characterized by a greater affluence of women aged 15-64, and a greater affluence of men in all other age classes.

The main causes of hospitalizations in both regimes are, in general, illnesses regarding the blood circulatory system (16% of total discharges), followed by cancers (10%).

For women, however, the main cause for hospital admission has to do with pregnancy complications and childbirths (normal childbirths included), which account for about 16% of total admissions, followed by blood circulation illnesses (13.4%).

As regards men, instead, the first causes of admission are blood circulation illnesses (19.1% of total admissions), followed by illnesses concerning the digestive system (11.7%) and cancers, with a frequency of 10.6%.

9,678.1 beds are effectively used, and women tend to use them less than men, with the only exception of women in the age range between 15 and 44 for the reasons previously mentioned.

With respect to 2006, the number of beds effectively used fell by about 10% in total, even though in the age class 85+ this indicator rose more than 26% for women and 35% for men.

As far as hospitalization in DH regime is concerned, during 2011, Tuscany inhabitants accessed hospitals about 72,000 times in medical DH regime, with a hospitalization rate of 19.4 every 1000 inhabitants on average.

Both females and males aged 0-14 tend to be admitted more frequently, with a rate of 37.8 and 43.2 every 1000 inhabitants of the same age, respectively, and a bit less at a more advanced age, with a admission rate of 22 per thousand females, and 33 for males aged 65-84.

Admissions in surgical DH amount to 68,000 with a rate of 18.2 every 1000 inhabitants and peaks of 25 every 1000 inhabitants of the same gender and age for females aged 15-44 and 26.5 for males aged 65-84.

The main causes for admission in surgical DH are illnesses of the bones and muscles system, followed by complications of pregnancy and childbirths and illnesses of the digestive system.

Analysing the distribution for each of the two genders, 23% of females are admitted mainly for pregnancy and childbirths complications, followed by 17.7% admitted due to illnesses of the genitourinary system and 12% for illnesses of the bones and muscles system.

Males get admitted for illnesses of the digestive system in 22% of cases, for illnesses of bones and muscles system in 16.6% of cases, and finally for cancers 10% of the time.

6.3 Emergency health care

Francesco Innocenti – Regional Health Agency of Tuscany, Florence

The Presidential decree issued in March 1992 “Act of guidance and coordination to the regions for the determination of levels of emergency health care” outlined national standard references for the management of emergency care system. The measure established an organization based on two levels: a health alert system, supplied by the operations center connected to the national telephone number “118”, and a system of acceptance and emergency medical service that provides emergency rescue and an accident and emergency department.

In 2012, according to 118 data, 741,163 calls (20% of regional population) were recorded in Tuscany: 58.1% referred to “actuate a mission by sending emergency vehicles”, 21.7% “requested clinical advice”, 12.5% “help of a covering doctor”. Only 59% of these assistance requests, corresponding to 242,823 cases, involved at least one person and in particular 205,958 males (47.2%) and 230,601 females (52.8%).

As regards the second step of the emergency care system, 1,431,388 people needed primary care from the hospital (39% of regional population), a sharp drop compared with previous year, and, in particular, also the ratio between males and females changed, reducing the existing gap and reaching a value of 50.7% for males.

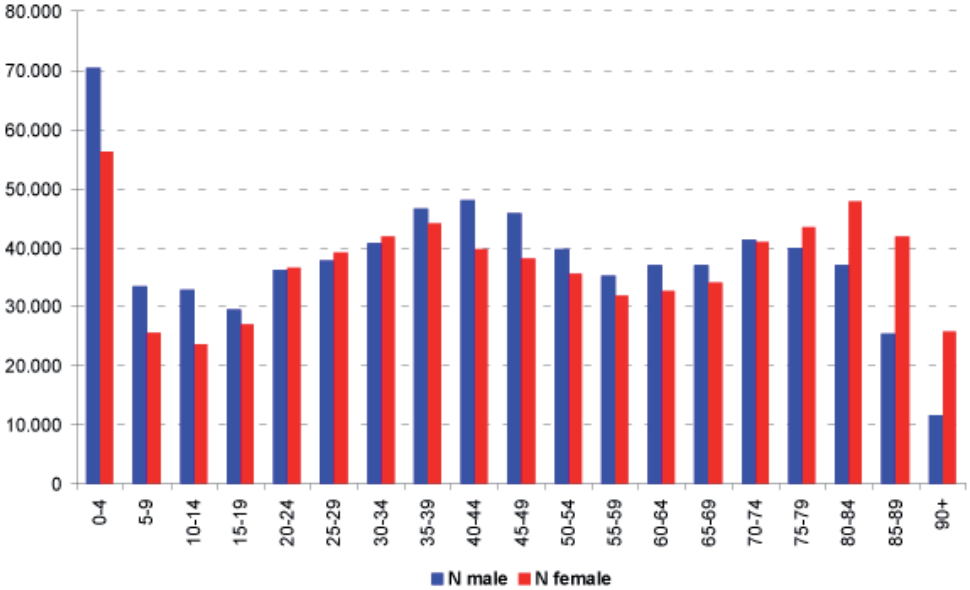
The same year distribution by gender and age of people who requested hospital care revealed that up to approximately 74 years old inclusive (except for aged 20-34 years old, in which there was a slight predominance of females) males used emergency care more frequently, while for those aged 75 years old and older, females were always significantly higher values (**Figure 6.1**).

Analyzing the most common diagnosis recorded for emergency care, there was a prevalence of females for “unspecified abdominal pain” (males 2.3%, females 3.3%), followed by “headache” (males 0.7%, females 1.2%) and then “syncope and collapse” (males 1.4%, females 1.8%). Instead, the diagnosis where males present significantly higher values were: “open wound of fingers without mention of complication” (males 1.5%, females 0.8%), “renal colic” (males 1.8%, females 1.2%) and “chest pain, not specified” (males 3.1%, females 2.6%).

When diagnosis is traumatic, categories of “domestic incidents” and “confined space accidents” showed higher frequencies for females, while for all other trauma, the ratio is reversed, with maximum values in the categories of “sports injuries” (81.2%) and “workplace accidents” (68.9%).

Finally, in terms of outcomes, “hospitalization” referred to 12.9% of females and 11.9% of males.

Figure 6.1
Number of people who request emergency care in hospital by gender and age. Tuscany, 2012
(Source: ARS on emergency care data)



6.4 Transplants

Sara Bagatti – Local Health Unit 4, Prato / Tuscan Organization for Transplants, Florence
Adriano Peris – University Hospital Careggi/ Tuscan Organization for Transplants, Florence

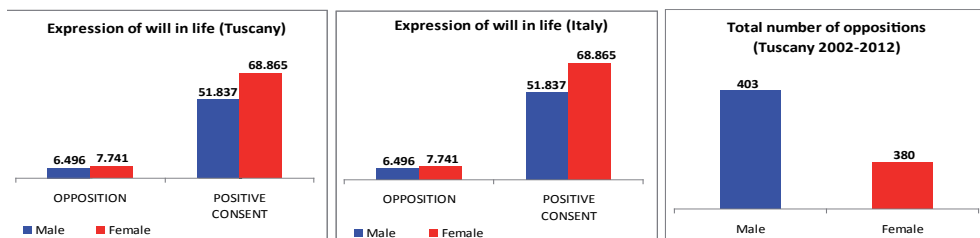
In Italy, in the field of transplantation, gender is not usually analysed or considered in the decision-making process. Neither of the two branches within this clinical practice - donation and procurement - are evaluated from this point of view. No data is collected or published by the main national or international organizations.

About nine thousand patients need an organ in Italy every day and the difference in gender does not affect admittance to the waiting list. Therefore disregarding gender, the presence on the list reflects the epidemiology of the illness and the average life expectancy.

6.4.1 Donation

The law n° 91 of 1999 rules the matter of donation, procurement and transplant. A big campaign was launched to convince people to declare their willingness to donate organs and tissues after death. The result was disappointing. Just a few people expressed their adhesion, only about 140,000 in Italy. Within this small group, women are most prevalent and even more so if we look at the moment of consent. This data is confirmed (**Figure 6.2**) by the male prevalence in declining to donate organs at the moment of request.

Figure 6.2
Expression of will in life. Total number of oppositions in Tuscany (2002-2012)



We want to stress that the gender perspective is a new way to consider the world of transplants. It can easily be argued that donation and maternity are emotional experiences which are closely linked. It is reasonable to think that women deal with loss and mourning by trying to encourage the beginning of a new life, as they are accustomed over millennia to sustain life. On the contrary men appear to be less sensitive to the problems of organ donation as more paralyzed when faced with a loss, having big difficulties in breaking away from the persons they loved.

This data deserves further studies especially if we want to know how these figures are affected by the kind of donation, such as organs or tissues, and also by cultural differences.

6.4.2 Transplant

The scene is completely different.

Brain death is slightly more frequent in men than in women. It is caused mainly by spontaneous cerebral bleeding in old age, particularly for women as they live longer. The second cause is trauma (road accidents and accidents at work) and in this case men are more affected.

There is no gender difference as regards the risk of transmitted diseases.

There is a male predominance in the waiting list between the number of deaths and patients that have finally received a graft.

In conclusion in the Tuscany Region women are more inclined to give consent for donation. They are more frequently subjected to organ removal, as they are healthier and live longer. However, men benefit more from organ transplantation.

It could be interesting, continuing to study the female contribution to the figures of consent for donating organs and tissues, to evaluate this phenomenon in all the Italian Regions, taking into account the cultural differences and the differences in terms of efficacy and efficiency of local organization models.

6.5 Gender and drugs

Francesco Lapi, Simone Bartolacci - Regional Health Agency of Tuscany, Florence

Flavia Franconi - University of Sassari

Nowadays, it is known that women have a greater life expectancy than men. However, it does not imply a better quality of life for females, who feature a higher burden of comorbidities and use more medications. There are gender-related differences in benefit/risk assessment of pharmacotherapy, which are due to biological and social factors, and women are more prone to Adverse Drug Reactions (ADR) than men. Furthermore, women enroll to a lesser extent than men in clinical trials and gender-specific analysis is not usually included in the evaluation of results, thus contributing largely to this uncertainty (Franconi et al., 2007).

Our aim was to quantify drug utilization and (in)appropriateness of medication use in women and men in Tuscany (Italy) in 2012.

Four indicators were selected and calculated by gender. The first two indicators concern drug consumption: hence, the number of Defined Daily Dosages (DDDs) per 1000 inhabitants/day were computed, along with proportions of individuals prescribed 5 or more active substances (i.e., polypharmacy) per year. The third indicator concerns inducing-arrhythmia medications and their use in high-risk subjects, such as those with a history of ventricular arrhythmia. The fourth indicator concerns medication adherence (i.e., more than 80% of days covered) to antihypertensive, lipid-lowering drugs and antiresorptive drugs for osteoporosis.

In Tuscany, in 2012, 1,508,318 women (79%) and 1,224,955 (70%) men were prescribed at least one medication out of the resident population. Specifically, 1045 and 997 DDD/1000 inhabitants/day were repeat prescriptions for women and men, respectively. Along this line, 29.2% of women had 5 or more active substances being prescribed in 2012, against 22.4% of men.

Overall, men at high risk of arrhythmia were more exposed to arrhythmogenic drugs than women (6.6 vs. 5.3%). Nevertheless, among age strata, women older than 60 years old generally showed a higher use of these medications than men; in particular, 24.3% of women aged 28-37 years old were more exposed to arrhythmogenic drugs against 9.6% of men of the same age (**Table 6.2**).

For what concerns adherence, women were less compliant than men for antihypertensive and lipid-lowering drugs (63.8 vs. 68.7% and 24.1 vs. 35.2%, respectively). On the other hand, women were more adherent to antiresorptive drugs than men (37.0 vs. 29.2%).

Our results indicate that Tuscan woman use more medications than men. Given that ADRs are more frequent in woman, major attention should be posed to female patients, especially those on polypharmacy, and young women at risk of arrhythmia receiving arrhythmogenic drugs (Drici et al., 2001). The fact that adherence to chronic

pharmacotherapies is lower in females than males could be due to greater risk of ADRs in females, as well as their usual role as caregiver which makes them tend to neglect their own health (Rolnick SJ et al., 2013). Gender is a variable that has to be considered in order to optimize medical treatment both in men and women.

Table 6.2
Subjects with history of ventricular arrhythmia exposed to inducing-arrhythmia medications

Age group	Female		Male	
	N	%	N	%
18-27	2	5,0	5	6,2
28-37	17	24,3	12	9,6
38-47	16	10,8	26	9,7
48-57	18	8,9	35	7,4
58-67	38	9,4	81	8,0
68-77	58	6,9	162	9,6
78+	80	3,0	84	3,4
Tuscany	229	5,3	405	6,6

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6.6 Complementary medicines and the gender approach

Sonia Baccetti, Mariella Di Stefano, Elio Rossi, Paolo Fedi - Tuscan Network for Integrative Medicine

Complementary medicines (CM) are used by nearly 20% of the Italian population. A survey conducted in Tuscany by the Regional Health Agency in 2009 (Da Frè M, Voller F 2011) reported that one citizen out of 5 was aware of this type of treatment and 13.4% had used at least one of these medicines. According to this survey, the percentage of people who use CMs (acupuncture, herbal medicine and homeopathy, that are included in the “Essential Levels of Care” in Tuscany Region) does not show significant differences between males and females. Women are slightly more numerous than men, respectively 12.1% and 10.9%, except non medical herbalism where the gender difference is more marked.

All the Regional, national and international surveys report that the majority of the patients who use CM are women. Data of the Tuscan Public Health Service reported that in 2010 21,582 female patients accessed CM outpatients’ clinics versus 8,378 male patients (72.0% and 28.0% respectively). Women between 45 and 54 years (20.6%) followed by those between 55 and 64 years old and between 65 and 74 years old (both representing 19.8%) access these types of health services in Tuscany more frequently.

According to Italian statistical research conducted in 2005 (ISTAT 2007) 4.7 million women used non-conventional medicines (15.8% of the general population) versus 3,162 million men (11.2% of the general population).

Recent international research (Frass et al. 2012) investigated the situation of complementary medicines in ten countries and observed that the majority of the patients using these kinds of treatment were middle-aged women mostly with a high level of education.

Biological and socio-economical aspects that differentiate the genders also influence the health conditions of women and men. As a consequence, men can no longer be the unique point of reference for the medical research and clinical practice that, as indicated by traditional Chinese medicine, views women and men in very different ways, both at diagnostic and therapeutic levels.

Complementary medicines are based on the holistic vision of the health and consider the mind and body integrated in an organic wholeness that is the source of the health, viewed as a state of wellness of each person in their totality and in relationship with the natural and social environment.

CMs may contribute to healthier lifestyles and to the empowerment of people also in the prevention field. The general approach, themes and treatment proposals of this kind of medicine correspond closely to the needs of women and therefore they may have a crucial role in the development of this new vision of health, wellness and illness.

These medicines may offer a great contribution to developing and enhancing gender medicine.

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Chapter 7

Gender-based violence, trafficking, mistreatment, and abuse

Gender-based violence

Project “Codice rosa”

**Mistreatment and abuse
of women and little girls**

**Human trafficking
and exploitation**

**Mistreatment and abuse
of minors**

**The Group for prevention
and treatment of abuse
on children and adolescents
(GAIA)**

7. Gender-based violence, trafficking, mistreatment, and abuse

7.1 Gender-based violence in Tuscany

Daniela Bagattini, Valentina Pedani – Provincial Social Observatory of Prato/Regional Social Observatory, Florence

Monitoring reports on gender-based violence by the Regional Social Observatory of Tuscany.

The Guidelines against gender-based violence, derived from the Regional Law 59 of 2007, attribute the task of monitoring the data provided by local anti-violence Centers to the Regional Observatory on Gender-based Violence, part of the Regional Social Observatory. The working group on gender-based violence started in 2009 and it is in charge of compiling the annual monitoring report that will be presented on November 27th 2014 on the occasion of the International Day for the Elimination of Violence against Women.

The First Report collected survey data on gender-based violence in the Italian territory and provided a description of the activities carried out by the anti-violence Centers of the Regional network against gender-based violence (VGRT). This report was also used to illustrate the path for the creation of the network and the analysis of requests for help received in 2008.

From July 1, 2009, with the creation of the Regional web application, that collects the data from the local anti-violence Centers, it has been possible to analyze all the individual data of women who have turned for help to the anti-violence Centers of Tuscany at the regional level. From the 1st of July 2009 to the 30th of June 2013, 8,218 women turned to the structures of Tuscany (**Figure 7.1**). An increasing trend can be noted in the reports of violence with 1,761 cases in 2009-2010, 1,928 cases in 2010-2011, 2,032 in 2011-2012 and 2,497 cases reported in 2012-2013. Gender-based violence is a phenomenon that occurs mainly at home and affects women whose academic qualifications are higher than average; ranging in age, the proportion of employed women is in line with the average in Tuscany. In most cases the abuser is the partner, an ex-partner or a member of the family. The reconstruction of self-identity which violence has fragmented cannot ignore practical needs: a home, a job.

The Second Report showed that the women working as operators in the Centers are mainly volunteers with a high level of education.

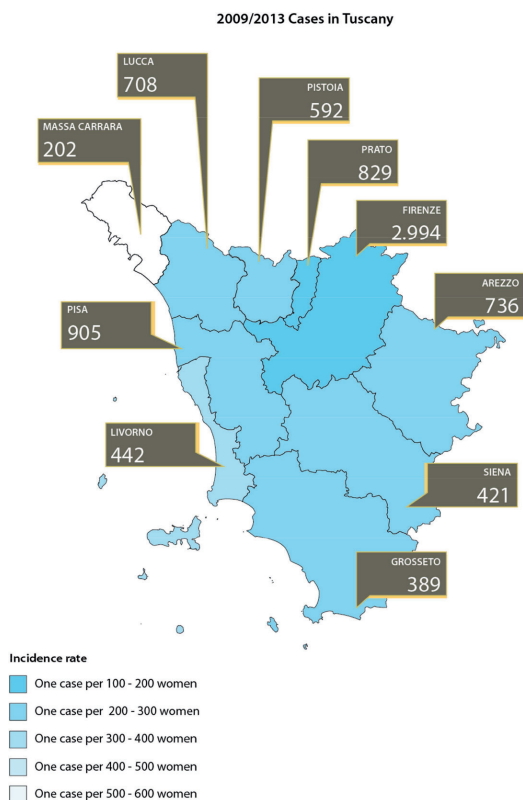
The Third Report highlighted the need for the local networks against gender-based violence to codify the procedures for the interventions and they agreed to the construction of an integrated data information system on gender-based violence that allowed the integration of the regional and national level.

In the Fourth Report data sources were expanded to include the data extracted from the “Archivio regionale delle Prestazioni Consultoriali (SPC)” and the gender-based violence data of Tuscan First Aid involved in the Pink Code project. In the same report we can find the descriptions of the activities of the Listening Centre for abusive men (CAM) of Florence, of the Pink Code project and the mapping of policies against gender-based violence implemented in the Emergency Department of the Tuscany Region.

The fifth edition of the Report is dedicated to the daily operations of local networks against violence, the procedures adopted in the connection between different subjects, the problems and solutions adopted. Furthermore, the last Report counts and categorizes all the Regional Services for Women who are Survivors of Violence, such as the 20 anti-violence Centers, the 10 Women’s Shelters, and the 53 Listening Centers.

Reports on gender-based violence in Tuscany are the result of the collaboration of several people, structures and institutions including the Provincial Social Observatories (Oo.Ss.Pp)¹.

Figure 7.1
Women aged 15 and over residing at 1 January 2013 and women who have turned to the centers from 1 July 2009 to 30 June 2013 - Provincial distribution - Absolute values



¹ All reports can be downloaded at <http://servizi.regione.toscana.it/osservatoriosociale>

7.2 *Codice rosa*

Paola Magneschi – Region Tuscany, Florence

The regional project *Codice rosa* (Code Pink), which was set up in Tuscany in 2012, includes a number of activities aiming to treat and protect the most vulnerable bracket of the population, i.e. men, women and minors who, due to their vulnerable conditions, are more likely to become victims of sexual abuse or mistreatment. Following positive achievements, the regional Committee has extended the project to another 5 local health units through Resolution n. 339/2013 anticipating its complete diffusion in 2014. The project's main purpose is to overcome the fragmentation of responses and the critical issues that occur in the connection among the network subjects building a different way of working, providing operative responses starting from when the victim seeks help at the accident and emergency department, guaranteeing assistance and protection for the victim and facilitating the connection in the later steps. The project's distinguishing characteristics can be identified in the drafting of Agreements which are formalized at a local level between the local health units and the Public Prosecutor's offices for the esteem of the partnership among the different institutions. The Operative Groups, which represent the essential connection of the subjects involved in the treatment and protection of violence victims, are composed of representatives of hospital and territorial services of local health units, Public Prosecutor's offices, Security forces, the municipalities, women's crisis centers, shelter homes... The definition of operative procedures, which are shared among the groups, is necessary to guarantee the immediate activation of the network subjects, in order to assure effective and coordinated actions. The engagement and the motivation of the operators is indispensable to support the surfacing of violence cases which are not always declared or evident. In addition, education is necessary to promote awareness, to share operative procedures and to develop co-operation too. In their daily practice, general practitioners and pediatricians can guarantee support to contrast violence paying attention to specific symptoms. The data of the regional project relating to the sample survey of the 5 local health units which adhered to the experimental project in 2012 pointed out 1248 mistreatment cases on adults, 44 sexual abuse cases and 22 stalking following mistreatment cases. As regards minors, 113 mistreatment cases and 28 sexual abuse cases emerged, that is in the aggregate 1455 verified cases in 2012. It deals with partial but official data and comparing the data reported in 2012 with that of 2013, a doubling in sexual abuse cases (from 72 to 144) was noted and the same for mistreatment to adults and minors cases (from 1361 to 2829), whereas stalking cases on adults have more or less remained stable (from 22 to 25). On the whole, there were 1455 *Codice Rosa* cases in 2012 and 2998 in 2013, respectively observed in 5 local health units in 2012 and in 10 local health units in 2013. The diffusion process of the project in the entire region must continue and develop through the operative

connection among the network subjects, contextually with promotion and awareness-raising campaigns for young people starting at school where it is necessary to begin thinking about these topics, because only by phasing strengthened cultural bias out and by developing a culture based on equality and respect for people, can the phenomenon of violence be properly faced and significantly brought down too.

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7.3 Mistreatment and abuse of women and little girls: the experience of the Regional Reference Centre for the prevention and treatment of violence and abuse cases

Maria Sandra Bucciantini, Pina Mertino and Francesca Pampaloni – University Hospital Careggi, Florence

Violence against women is a very topical subject, and, by the very nature of the acts of sexual violence, data represent only the tip of the iceberg. This may result in an underestimate of the phenomenon and of the resulting damage. WHO has indicated that 15-71% of women experience physical and or sexual violence from their partner during their lifetime.

The Italian data are not encouraging, according to the ISTAT survey on sexual harassment carried out in 2008-2009 on women aged between 14 and 65 years old in the course of their lives. Data shows that about 52% of the Italian female population have suffered harassment and/or sexual harassment.

The relevance of this issue has given rise to many initiatives in our area. One of these is the establishment in 1992 at Dipartimento Materno Infantile of Azienda Ospedaliero Universitaria Careggi (AOUC) of a service against violence on women that in 1999 became CRRV (Centro Regionale di Riferimento per la Violenza sessuale)

In 2012 the AOUC became part of the regional project “Codice Rosa” constituting a path of total care of women through specific pathways related to sexual and domestic violence.

The CRRV has partnered with other Departmental Units, which provide support for the treatment and care of abused people, such as Neuropsychiatry Psychiatry, Psychology, Infectious disease, Toxicology, Forensic Medicine and Cytogenetic LAB.

The CRRV admits only female patients, both adults and children, both in emergency and planned route offering support. Considering the delicacy of the subject, particular attention to the reception is mandatory and it should include a secure and confidential environment, the exclusive presence of specially-trained operators who offer a reassuring attitude, are ready to listen and do not rush. In addition, during checks, we provide a comprehensive explanation of the procedures in order to make the patient feel as comfortable as possible.

From 1992 to 2012, the CRRV accepted 728 patients: 526 were adults , 68 between the ages of 14 and 18, 134 between 0-13. Over the years, the number of admittances has increased among adults with peaks in 2004 and 2007. Regarding the weaker range (0-13 years), in order to correctly interpret the data it is important to point out that another violence service for children has been established at the hospital Meyer and it has probably selected access based on age. The nationality is predominantly Italian; 375

women (76.2%), 35 adolescents (51.4) and 105 girls (78.3); among the other countries involved those of eastern Europe emerge.

Taking into account the abusing person, the data revealed a heavy involvement of a known person. The CRRV admittance has been able to involve territorial services in 46 % of cases along with us. Moreover a legal procedure has been undertaken in the 67% of cases.

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7.4 Human trafficking and exploitation in Tuscany

Sonia Biagi – Region Tuscany, Florence

The Tuscan system against human trafficking and exploitation

The system of anti-trafficking interventions in Tuscany is based on the centrality of the individual and the protection of his rights. It is an intervention model which applies the development of practices and experiences of the territory, integrated work among public, private and social institutions and carries out the policy of rationalisation of resources and services.

At the regional level, programming tasks, coordination and verification of the interventions are attributed through a system of governance that consists of:

- a steering committee - with deliberative functions;
- a group of actuator institutions - with advisory functions and submitting proposals for the steering committee and to monitor and supervise territorial interventions;
- a technical secretariat - with functions of system support (both territorial and regional).

Furthermore, system actions are developed that provide support to the activities and territorial interventions:

- Regional toll free number (800186086 24h) - organisational device which, in addition to carrying out functions of information/guidance on the phenomenon, offers some tools and services in support of the territories: taking charge in emergency conditions, linguistic and cultural mediation, legal counsel;
- Training - continuing education and updating for system operators;
- Communications and public awareness - creation and production of information materials, organisation of conferences and workshops;
- Planning - proactive actions to foster the emergence and the knowledge of the phenomenon and elaboration of projects (regional, national, European), etc.

The territorial, level, on the other hand, carries out operational and managerial functions and contributes to the realisation of regional projects. To it are entrusted transversal actions, such as training activities for contiguous territorial or homogeneous areas aimed at multiple subjects/operators, communication and awareness, implementation of regional and national information procedures. Ensures appropriate and timely answers also to the victims of trafficking and serious exploitation through the connection of different services which provide the full spectrum of operations necessary for the emergence, protection, reception and reintegration of the victims:

- Mobile Territorial Units - activity knowledge of the phenomenon, prevention and health protection, guidance and support to social and health services, etc.;

- Drop-in and listening booths - listening, counselling, orientation on how to break free from exploitation, information and sending to social and health services, evaluation of indicators of trafficking, sending of programmes of social protection on the territory, activation of Assisted voluntary return programmes;
- Reception facilities - ready assistance, reception, performance of social protection programmes in accordance with article 13 of Law 228/03.

All social reintegration and employment projects launched for victims of human trafficking offer personalised paths and training programmes (Linguistics, professional, etc.).

Recipients of assistance are men and women who are victims of exploitation (construction, industry, agriculture, catering, domestic and care work), adults and children exploited in prostitution and/or indoors; victims of severe forms of violence and exploitation, forced begging, illegal activities (forced marriages, drug dealing and theft on behalf of third parties, etc.).

7.5 Mistreatment and abuse of minors

Lorella Baggiani – Region Tuscany, Florence

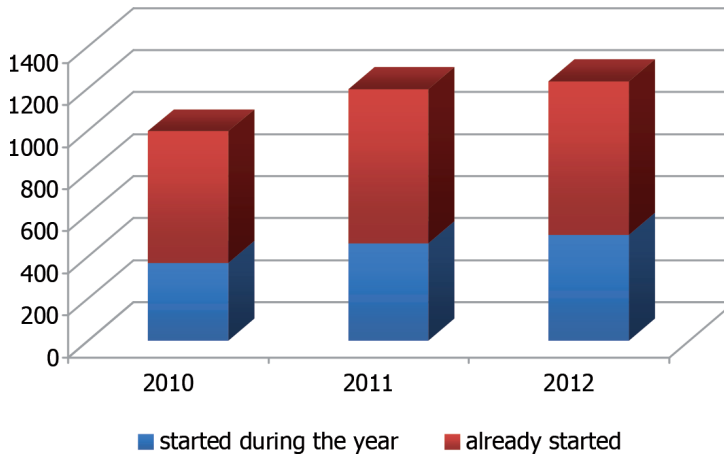
The phenomenon of minors involved in acts of mistreatment, violence and sexual abuse is one of the most consistent and significant areas for actions of security and protection, and as such requires specific and differentiated interventions. The variety of institutional actors dealing with these minors makes the reading of the phenomena possible from several points of view, with different and never exhaustive sources of information. From a social point of view, the phenomenon has found an established cognitive and in-depth channel between regional databases dedicated to children in the family and outside the family, collected, systematised and analysed by the regional childhood and adolescence Centre, managed on the basis of a regional law by Istituto degli Innocenti of Florence¹. Among the indicators for the monitoring of social assistance for minors and families is the series dedicated to children victims of mistreatment in the family, sexual abuse and sexual abuse in the family. The data comes directly from the social services of the municipalities of Tuscany and considers children in treatment at these services, following a report of a judicial authority. A glance from this particular perspective reflects the continued increase in maltreatment within the family: in the three-year period 2009-2011, in fact, cases shift respectively from 993 to 1196, with a percentage increase of 20%. A trend confirmed by data for 2012 that report 1234 minors and mark a percentage increase of 3% compared to the previous year, and of 24% if compared to 2010. The issues that are in the background of these situations relate to parental inadequacy, poor social and cultural conditions of the family unit, neglected response to emotional needs and development of the children; in this context, the annual increase in cases dealt with for the first time by services and the incidence of children of foreign families are rather significant.

At the end of 2011, 464 children out of 1196 victims of mistreatment in the family had begun care treatments and during 2012, of the total 1234 kids assisted by services for the same problem, as many as 503 were “new cases”. The incidence of foreign minors stands out in the reading of the phenomenon if one takes a look at the maximum threshold of 27% reached in 2010; in 2012, the value remains stable at 27.5%: absolute values indicate 305 units in 2011 (out of the total 1196) and 340 units in 2012 (out of the total 1234) (**Figure 7.2**). With regard to sexual abuse, always in the three-year period 2009-2011, there is a decrease that however, is tempered by the rising number of cases in 2012: in the face of the 157 victims of 2009, in 2012 there are 180 cases, amidst

1 Cfr. Tuscan framework of social interventions for children, teens and families; data as of 31.12.2012, Regional Centre, childhood and adolescence, Regione Toscana - Istituto degli Innocenti, Florence 2013; all data, reports, research produced by the regional Centre are accessible and available for download on the website: www.minoritoscana.it

the fluctuating trend in years 2010 (192) and 2011 (166). Also in this type of crime, the incidence of the family context, with its weight and load of problems has a strong impact: the percentage of cases of sexual abuse within the home walls, compared to the phenomenon of sexual abuse of minors, is 62%. The data is confirmed that on average, out of every 3 cases of sexual abuse on minors in Tuscany, about 2 are committed within the family, figure aligned to the trend observed also at the national level.

Figure 7.2
Children and teens aged 0-17 years who are victims of mistreatment in the family, reported by AG, in charge of social services – 2010, 2011, 2012



7.6 General outcomes of the Group for the prevention and treatment of abuse on children and adolescents

Stefania Losi – coordinator and spokesperson GAIA – University Children’s Hospital Meyer, Florence

Teodori Caterina – psychologist GAIA – University Children’s Hospital Meyer, Florence

The Group for the prevention and treatment of abuse on children and adolescents (GAIA) was created in 2005 within the framework of the Meyer Pediatric Hospital. It was approved on 15/04/2010, by deliberation of the General Director n.90, to aid children who are victims of suspected abuse and mistreatment through a multidisciplinary management.

GAIA operates across the hospital’s activities to guarantee effective treatment as well as a diagnostic classification of the individual child who is victim of abuse. At the same time, it carries out preventive action and early diagnosis of warnings connected to abuse. Finally, GAIA promotes clinical and legal processes cooperating with Territorial Services and competent institutions.

GAIA is formed of different professional figures - pediatricians, gynecological pediatricians, psychologists, psychotherapists, surgeons, nurses, social workers - who collaborate to select the best form of treatment for each individual case. Taking charge of a single case also entails undertaking the responsibility to inform the Judicial Authority about possible felonies and child protection.

Over the years, GAIA has developed its expertise, finalising a well-defined way of proceeding. The Group can be called to action by other Hospital Departments as well as by the Judicial Authority, schools, GPs and other hospitals.

An accomplishment over the last few years has been the cooperation with the Judicial Authority in order to create shared procedures to inform, diagnose and treat a child subjected to a legal process. GAIA’s psychologists offer their expertise to support the child during the process in order to prevent any further dynamic of victimization.

From November 2012, the Meyer Pediatric Hospital alongside GAIA has advocated the project “Models for the protection, treatment and social reintegration of minors who are victims of abuse and sexual exploitation” promoted by the Equal Opportunities Department, along with the Municipality of Florence and Artemisia Association.

The Meyer Pediatric Hospital and GAIA are partners in the regional project called “CON-TRAT-TO” (against sexual slavery in Tuscany). Since January 2013 the Meyer Pediatric Hospital has been involved in the fulfilment of the “Regional project to defend the weakest population groups exposed to violence – Codice Rosa”.

Moreover, the Meyer Pediatric Hospital has received funds from the European Commission for a project (presented on the DAPHNE III announcement) related to abuse and violence of children and adolescents, to sustain GAIA’s activity. The Meyer

Pediatric Hospital coordinates the project with the Pediatric Hospital of San Juan De Deu in Barcelona, the Pediatric Hospital Heim Pal in Budapest, HOPE (Hospital Federation of Europe) and other partner Universities.

GAIA has considerably increased its workload (**Table 7.1**) compared to the number of cases treated in 2005, 2006, 2007, a period when there were under 20 per year.

Table 7.1
GAIA's cases

Year	N. Cases	M	F	Sexual Abuses	Maltreatments	Italians	Foreigners
2008	21	38%	62%	48%	52%	76%	24%
2009	49	43%	57%	31%	69%	61%	39%
2010	67	51%	49%	34%	66%	67%	33%
2011	84	46%	54%	44%	56%	57%	43%
2012	70	47%	53%	40%	60%	60%	40%
2013	85	46%	54%	16%	84%	53%	47%

Chapter 8

Training on gender medicine

8. Training on gender medicine

Gian Franco Gensini – University of Florence/University Hospital Careggi, Florence

The 7th Framework Programme of the European Union has given evidence for the need to support 4P medicine. 4P is for preventive, predictive, participatory and personalised medicine. The concept of “personalised medicine” is broad, and extends to the various elements of personalization that can be defined as referred to ethnicity, group and the person. Gender medicine undoubtedly represents an essential element of primordial personalisation, which is of central importance in a medicine concept which has been focused on solid efficiency evidence in the last twenty years, also thanks to the emergence of evidence-based medicine.

Not being able to disregard the health and economic situation that we find ourselves in, an approach to proactive training with respect to the issues and the group and person differences must be obligatorily set out to identify the determining factors that have a key role in influencing the health status of an individual, both immediately and in the future, in order to identify priorities and plan an appropriate therapeutic strategy and care suited to the needs of each person.

On the one hand, the aim is to acquire knowledge that can allow you to manage the current uncertainty facing the person that is ill, in order to switch from impersonal medicine, focused on the cure of that single illness, to a medicine that identifies the primary objective in the patient, respecting and enhancing the gender-related differences. On the other hand, it is necessary to examine and share the possible diagnostic and therapeutic options, specifying the particular gender-related differences, with different probabilistic values in the two genres, as it happens under some conditions, such as cardiovascular problems. Right in the cardiovascular field, the existence of marked disadvantages for the female gender is widely demonstrated and confirmed, both in a diagnostic and therapeutic sense, thus indicating the need for a strong commitment to training for doctors, other health professionals, the citizens and the ill persons.

Therefore, faced with a clinical issue relating to a woman, the first concern we should have is to evaluate if the evidence that exists, has been obtained specifically for the female gender, at a diagnostic and therapeutic level. And in the training, this attention is particularly necessary.

If we then consider the medicine system, e.g. the attention to the extent to which the various systems in our body are forced to work under the various conditions, its fundamentals clearly speak against the use of evidence that does not take gender-related differences into account which are able, as known from epidemiology, to make sure that the same condition can be very different for diagnostic, clinical progression and appropriate therapy in the female and male genders.

It therefore follows the need to already identify in the early years of degree courses, in medicine and surgery, in nursing and in other health professions, sessions of training

in which the evidence that we are accustomed to using in the evidence-based medicine, is only very partially guaranteed in a formal sense by evidence that also applies for the female gender. The extension to the female gender of the evidence represents an extrapolation certainly close to the truth, based on the biological characteristics of the male and female gender, but without supporting specific evidence. The need that clearly emerges today is to introduce a series of elements within our training system, for which the attention to existing gender-related differences is regularly and systematically part of training. In some areas such as the cardiovascular one, there is clear evidence for a lack of treatment, a diagnostic approach, a shared management when it comes to the female gender (Valente et al, 2012). Training should focus on evidence on gender-related differences already detected, on the grey areas in which there is still no evidence or evidence is ambiguous, and the areas in which we can, on the basis of existing evidence, know and know how to use this knowledge in a functional way. The steady increase of knowledge and the emergence of new evidence will gradually allow us to put in place clinical training sessions specific to gender-related evidence.

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