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Public Health

Since the triumph of medicine over infectious diseases, most causes of death in modern societies are related to lifestyle. There is a substantial social gradient in the state of health of European population. Throughout the continent, men usually die earlier than women. People with low socio-economic status, ethnic minorities and immigrants are at risk of low life expectancy and bad health. The SARS-CoV-2 pandemic amplified existing health disparities.

Health behaviour and environmental risks are primary with respect to disease emergence. The leading causes of death in the European Union are cardiovascular diseases, different types of cancer and respiratory diseases.

The burden of disease could be diminished and healthy life years would increase if the population's health behaviour was improved, literacy and its participation in screening programs enhanced, and vaccine compliance further encouraged.

Keywords: health indicators, healthy life expectancy, causes of death, health behaviour, health literacy, pandemic, vaccine compliance, environmental risks, social inequalities of health

Acronyms

APA	Advance Purchase Agreement
DALY	Disability-Adjusted Life Years
ECDC	European Centre for Disease Control
EMA	European Medicines Agency
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
ENCR	European Network of Cancer Registries
ESI	Emergency Support Instrument
EWS	EU Early Warning System
HIV	Human Immunodeficiency Virus
ICD	International Classification of Diseases and Related Health Problems
OECD	Organisation for Economic Co-operation and Development
SDR	Standardised Death Rate
YLD	Years Lived with Disability

Introduction

The epidemiological transition of the 20th century brought about the victory of medicine over infectious (communicable) diseases in the most developed countries. The reasons that led to the decrease of communicable diseases were (Barry–Yuill 2016):

- the improvement of living standards and income which went together with better nutrition and housing conditions

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- the development of medical technologies, most notably antibiotics and new vaccines
- public health interventions like sanitation, water purification and health education for the population
- parallelly to the withdrawal of communicable diseases, the share of chronic (non-communicable) diseases increased, and today six deaths out of ten originate in chronic conditions in relation to changed lifestyle patterns and to the ageing of the population

Multiple reasons lay behind the increase in the share of non-communicable diseases:

- first and foremost, ageing, which generally implies chronic conditions in the population aged 65 and over, 30% report at least one limitation in activities of daily living, and 40% have at least two chronic conditions
- the changes in nutrition, the harmful effects of urbanisation
- the progress made in the prevention and treatment of infectious diseases that led to the decrease of their share within all illnesses and causes of death
- last but not least, the emergence of precision medicine, which allows for better diagnoses

However, in spite of the triumph of medicine over infectious diseases, already in these first two decades of the 21st century, infectious diseases emerged time after time, and some of them turned into a pandemic, i.e. spread across multiple continents. In the post-medical era, health preservation and disease prevention is the main endeavour of public health.

Background

In the member states of the European Union health is a national responsibility. The EU does not regulate national health policies, but issues recommendations and guidelines to be implemented by national governments. There are, however, institutions in the front line with the mission to create joint platforms for public health issues. The European Medicines Agency (EMA) is in charge of the evaluation and supervision of medicinal products. Eurostat collects data and issues comparative studies on health-related topics, too, and a series of further institutions were established to facilitate joint action for improving population health.

As for pandemic control, the European Union as an entity has a relatively loose structure. Its institutions mostly formulate recommendations and guidelines, and leave it to the member states to act in pandemic management and risk mitigation on national and regional levels. To start with, in 1998 the Early Warning and Response System, a network for the epidemiological surveillance and control of communicable diseases was set up. The main EU structure dealing with pandemic preparedness is the European Centre for Disease Control (ECDC) established in 2005, with its mission of data collection and evaluation, scientific monitoring, information exchange, and the coordination of European

institutions' collaborative efforts in epidemiological surveillance. The ECDC supports the development of national "Pandemic Preparedness Plans" by providing guidance.

Regrettably, though, there is a substantial workforce shortage in healthcare across EU countries. The increasing number of old patients with chronic conditions and/or disability projects and increases a shortfall in health professionals. The reasons are the ageing of the workforce, difficult working conditions, poor lifelong learning, skill mismatches, weak career development and insufficient social recognition. The high rates of burnout in health professionals are mostly due to organisational and infrastructural reasons in the health care system (Michel–Ecarnot 2020). This aspect, too, places a heavy burden on the public health system of the European Union's member states.

Data on the state of health of the population

Morbidity and mortality indicators

Public health operates with a range of indicators, out of which the most common ones will be discussed below. Morbidity refers to the disease state, while mortality refers to death. Both terms have a series of indicators and are commonly used in public health. The statistical office of the European Union, Eurostat provides up-to-date statistical data for the indicators presented below through its webpage: https://ec.europa.eu/eurostat/web/health/data/database.

Disease prevalence

The prevalence of a disease is the proportion of a population who suffer from that disease in a given time period. Methodologically it is challenging to monitor recovery and deaths for infectious diseases; therefore, prevalence is used most commonly for chronic (non-communicable) diseases. Prevalence is being reported either as a percentage relative to a given population or as the number of cases per 100,000 people, and it can be assessed for a certain point in time, for a period (mostly one year) or for a lifetime (Last 2001).

The measure is used for public health service planning, and is complemented by the incidence indicator.

Disease incidence

The incidence of disease is the number of new cases during a specified time period. In case of non-communicable diseases, incidence is mostly calculated for one year, whereas for infectious diseases, even the new cases within one day are relevant for the further transmission of illness and prevention measures. Incidence is used to describe how frequently the disease occurs or how quickly it spreads (Last 2001). Incidence

can be either a proportion relative to the total number of population, or a rate such as person–time. The latter method requires that individuals affected by the disease are followed up over time.

This indicator is the baseline for public health interventions.

$$\textbf{\textit{crude death rate}} = \frac{\text{number of dead}}{\text{number of total population}} \text{ x } 1{,}000$$

Figure 1: Crude death rate
Source: Compiled by the author based on Last 2001

Crude death rate is a very general mortality indicator for a given year, as the number of deaths strongly depends on the age structure of the given population. Thus, in a population with a high proportion of elderly people, as it is the case in most EU countries, crude death rate is high. However, this rate does not reflect life chances in the given country.

$$\textbf{\textit{infant mortality rate}} = \frac{\text{number of deaths of children under 1 year of age}}{} \text{ x } 1{,}000$$

Figure 2: Infant mortality rate
Source: Compiled by the author based on Last 2001

The value of this indicator says much about the state of health and health services performance.

Overall, in the countries of the European Union there has been a substantial decrease of infant mortality within the past 30 years, however, in some countries the rate is still double of that of others. One risk factor for infant mortality is low birth weight and prematurity, which is significantly associated with maternal health behaviour like smoking, alcohol consumption or poor nutrition, but also older age and low socioeconomic status (OECD/EU 2020).

Age-specific death rate

More detailed than the crude death rate, the age-specific mortality rate filters out the effect of age structure and offers better comparison possibilities across time and space. It is generally calculated for five-year age groups, separately for men and women.

$$\textbf{\textit{e.g. age}} - \textbf{\textit{specific death rate of men aged}}\ \mathbf{45-49} = \frac{\text{number of men who died aged } 45-49}{\text{number of men aged } 45-49} \text{ x } 100{,}000$$

Figure 3: Age-specific death rate
Source: Compiled by the author based on Last 2001

Causes of death – standardised death rate (SDR)

This indicator is the death rate of a population adjusted to a standard age distribution. It is calculated as a weighted average of the age-specific death rates (above) of a given population; the weights are the age distribution of that population.

In public health, the cause-specific mortality is highly relevant. Deaths in the population are related to an underlying cause, based on the International Classification of Diseases and Related Health Problems (ICD-10). Standardised death rates are calculated per 100,000 inhabitants on the basis of the *European Standard Population* issued (Eurostat 2013). Knowing the main causes of death, mortality can be compared across time and space. There are considerable differences among member states in the death rate from all causes.

In all EU countries there is a mandatory notification system for communicable diseases.

Life expectancy at birth

The best indicator of life chances in a given country, life expectancy at birth shows the average age that a newborn baby is expected to live at the moment of his/her birth based on current mortality rates. Since the increase in life expectancy has already taken place in most developed countries, it is now the poorer countries where a remarkable advancement is taking place. It is important to note that this is a hypothetical number of the years a person would live according to the death rates typical for the time they were born at, so if age-specific death rates are falling over time, actual life spans will be higher than those calculated at birth based on current death rates. Life expectancy negatively correlates with infant mortality rate. Where infant mortality rates are higher, life expectancy significantly drops due to the mortality hazard of the first year of life. This is why marginalised social groups are at risk of bad health and low life expectancy.

All in all, Europe is an ageing continent with demographic and health features typical of this age structure, and in spite of the high rates of immigration, ageing will continue in the next decades. Within the European Union, there are remarkable differences in life expectancy between the member states, which mostly echo geographic dividing lines, the post-socialist countries displaying lowest values. With regard to the high rate of elderly people on the continent, some of the most relevant public health issues are related to their state of health. Even in the countries with highest gross domestic product and living standards, there is a gender gap in life expectancy in the sense that men continue to live less than women. This gender gap is particularly large in the EU countries of Eastern Europe.

Healthy life expectancy – Healthy life years

Living longer does not necessarily mean living in good health. The gains in the life span only contribute to a good quality of life if these years are lived without health problems and disabilities. In public health and in the research on the quality of life, healthy life expectancy becomes crucial. A longer life lived in good health not only means a healthier workforce but also fewer early retirements and less long-term care needs, which all impact upon public health services and ultimately upon the welfare of the country.

Healthy life years are the number of years spent free of long-term activity limitation, and are calculated based on life table data and age-specific prevalence data on long-term activity limitation (OECD/EU 2020). Parallelly to the worldwide increase of life expectancy at birth, this indicator is also increasing. A prominent public health goal is the further increase in healthy life expectancy (WHO/Europe 2013).

The gender gap in life expectancy at birth almost disappears when it comes to years lived in good health, as women report more activity limitations due to health problems at all ages and they also live longer than men. These facts suggest that it is first and foremost elderly women who experience many years of their old age in bad health.

Years of life lost

Recently, among public health professionals it became fashionable to use the years of life lost as an indicator that takes into account both the death rate and the age of death.

years of life lost = number of deaths at a given age × further life expectancy at that age

Figure 4: Years of life lost
Source: Compiled by the author based on Gardner–Sanborn 1990

Years of life lost results in a huge number without much meaning in itself. In its practical use, this number is divided into the proportions of the different diseases that cause premature death. Worldwide, the most years of life lost are by far due to cardiovascular diseases, followed by respiratory diseases. In the recent years, due to increasing motorisation, there was a strong increase in the proportion of traffic accidents that resulted in death.

Years lived with disability

YLD are the number of years that an individual lives with some disease.

These are years of life lost due to time lived in states of less than full health, or years of healthy life lost due to disability (*Years Lived with Disability* 2010).

DALY (Disability-adjusted life years)

DALY is one cumulative indicator for mortality and morbidity, that is, it takes into account both the Years of Life Lost and Years Lived with Disability.

One DALY equals the loss of one year of life that could have been lived in full health. DALYs for a disease or health condition are the sum of the years of life either lost or lived in bad health (WHO 2021).

This indicator was developed to quantify the burden of disease and is mostly used in health policy. Morbidity and mortality indicators are standardised and as such, they allow comparison as well as the short and long-term planning of public health programs. Knowing the prevalence and incidence rates of illnesses and their contribution to the burden of disease and to mortality have revealed where progress was achieved and also those where there is still work to be done in order to improve population health.

Risk factors for health: Main causes of morbidity and mortality

In the European Union the major causes of death are circulatory diseases and cancer, and mental health also has a considerable share in the years of life lost. We now highlight the most important risk factors for health with respect to chronic and communicable diseases.

Health behaviour

The topic of health behaviour as a determinant of chronic diseases is a priority of health policy, and is addressed in the form of clearly formulated goals of population intervention programs.

Most chronic diseases originate in lifestyle. As such, the most frequent causes of death with the largest burden of disease are cardiovascular diseases (circulatory diseases), leading to more than one third of all deaths (35.7%) within the European Union (Eurostat 2021). Among these, ischaemic heart disease (heart attack) and cerebrovascular disease (stroke) are most frequent, and the risk of both is on the rise due to unhealthy lifestyle and health behaviour. A range of international research reveal unhealthy habits in the adult population, and longitudinal studies yield evidence for the unhealthy practices starting already at young ages (Inchley et al. 2020).

First and foremost, these are alcohol consumption (Kovács–Bálint 2015), smoking (OECD/EU 2020), illicit drug use (EMCDDA 2020), bad dietary habits (FAO et al. 2020) and lack of physical activity associated with being overweight (WHO/Europe 2018) as well as work-related stress (Eurofound 2021). The gender gap in life expectancy highlighted above is partly due to greater exposure to risk factors among men. Greater tobacco and alcohol consumption, less healthy nutrition habits and worse working

conditions expose men to a higher risk of death from cardiovascular diseases, different types of cancer or violent causes.

In some European societies, mostly in relation with cultural norms but also with bad mental health, alcohol-related morbidity and mortality are particularly high. Lifetime prevalence of drug use varies across countries but the appearance of new psychoactive substances and synthetic opioids detected yearly by the EU Early Warning System (EWS) is also worrisome and a continuing market adaptability of illicit drugs has been reported. Further, deaths resulting from drug overdose are an increasing concern in the ageing population, too (EMCDDA 2020). In several EU countries, significant improvements were achieved with respect to smoking: the number of smokers decreased in the last years (OECD/EU 2020).

Some risk factors for cardiovascular diseases are, however, further increasing, like cholesterol, blood pressure, low physical activity, obesity and diabetes. Bad nutrition and sedentarism were brought about by the modernisation of societies and the changing work characteristics. Stress at the workplace became a major concern in post-industrial societies, as it raises the risk of non-communicable diseases by increasing susceptibility. The regular surveys of the Eurofound report increasing work-related stress across Europe (Eurofound 2021).

The increased rate of cancer cases, the second biggest cause of death within the European Union (27%), is partly due to the ageing of the population. However, unfavourable health behaviour as highlighted above also contributes to the development of cancer. Among women, breast cancer and lung cancer are most frequent, whereas lung cancer and colorectal cancer are the two most common.

The European Union makes considerable efforts to reduce cancer mortality through monitoring and information by joining cancer registries through the European Network of Cancer Registries (ENCR) of the European Commission. Thanks to large population-based screening programs and to better treatment options, survivorship of cancer has increased. For some types of cancer – breast cancer, colorectal cancer, prostate cancer, melanoma –, formerly large differences in survival chances among countries have also decreased.

In the EU, population-based screening programs are recommended for cervical, breast and colorectal cancers. In those states where large population screenings were implemented, a significant reduction in cancer cases was accomplished, which led to a decrease in the burden of disease associated with that illness. In EU countries with no mass screening programs, health policy decisions should be met in favour of such programs in order for funds to be allocated for these.

From the population side, participation in organised screening programs varies across and within countries. In scientific experiments conducted in order to test participation willingness, some measures have proven particularly effective in increasing participation: postal and telephone reminders, general practitioners' signature on the invitation letter, scheduled appointment instead of open appointments (Camilloni et al. 2013).

Beside the above hazards, risky sexual behaviour also has detrimental effects (Mirzaei et al. 2016). Not only does it contribute to the spread of HIV on the continent, but

in particular, in the case of women, one of its consequences is cervical cancer as a leading cause of female mortality.

Mental health

The end of traditional communities and the lack of integration into the urbanised societies, as well as the constant and rapid changes brought about by modernisation resulted in an increase of mental disorders in the population of the European Union. These are the leading causes of disability and the third leading cause of overall disease burden, following cardiovascular disease and cancers. The prevalence of mental disorders is 12%. Mental disorders are associated with other non-communicable diseases like cardiovascular disease, diabetes and cancers, and, as such, addressing comorbidity is a key issue. People with mental disorders live, on the average, 20 years less than healthy people (WHO/Europe 2019).

Environmental risks

There is a considerable welfare loss due to air pollution in the EU, particularly in Central and Eastern Europe. Throughout the continent, outdoor air pollution in the form of fine particles mostly resulting from fossil fuels causes 4 to 7% of all deaths (Institute for Health Metrics and Evaluation 2020). Further illnesses connected to air pollution, mostly respiratory and cardiovascular diseases, lead to a considerable amount of disability-adjusted life years (DALY).

The issue of sustainability is marked by partly similar challenges in the world, problems created by the unsustainable character of economy-driven urban development and by its consequences for climate change. Improving the quality of life is supposed to be less resource intensive and less demanding on the environment. Besides WHO directives, the EU has its own air quality standards imposed on member states.[1] Funding under different programs is also available to member states to improve air quality.

Communicable diseases and pandemic management

HIV infections also spread particularly with the transmission of prostitution, and are strongly connected to illicit drug use. Although Europe is not as affected by Human Immunodeficiency Virus (HIV) as are other continents (particularly Africa and Central America), mass migration carries the hazard of HIV spread, in spite of already having overcome most infectious diseases.

[1] EC Directive on Ambient Air Quality and Cleaner Air for Europe, EC Directive on heavy metals and polycyclic aromatic hydrocarbons in ambient air.

HIV spreads through sexual transmission, blood infusion, through the needle sharing of intravenous drug users, as well as through pregnancy and breastfeeding. Although antiretroviral therapy for HIV became available for most patients and their lives can be successfully prolonged, this disease inherently compromises the quality of life of HIV patients and, globally, contributes to the overall burden of disease.

In the last decades until early 2020, among communicable diseases, HIV was the major threat for mankind. As the SARS-CoV-2 infection broke out and turned into a pandemic, public health professionals have mostly been concerned with the management of this new situation. EU member states have applied risk mitigation measures and made use of the EU financing arm for joint pandemic management, the Emergency Support Instrument. With this, the Union coordinated an unprecedented action to accelerate the production, testing and introduction of EU-manufactured vaccines in the member states, through the financing of the following activities:

As a massive part of the European level pandemic management, in order to protect EU citizens, the European Commission issued its Vaccination strategy for Covid-19 vaccines in June 2020. Through the Emergency Support Instrument, the European Union made considerable efforts to agree with producers and obtain the right for primacy in buying a sufficient supply of EU-manufactured vaccines at fixed prices. The ESI supports vaccine production in the EU by partial coverage of the vaccine producers' costs. Advance Purchase Agreements (APA) were signed by the European Commission and the vaccine producers. Besides this instrument, as a joint effort to produce efficient vaccines of more types, the European Investment Bank is offering loans to manufacturers. The EU also facilitates a comprehensive, quick and cost efficient procedure of vaccine acquisition (European Commission 2020).

The EU considers it a priority to ensure the equity and affordability of access to vaccination (European Commission 2020). In order for this to happen, vaccine authorisation and procurement was centralised, and flexible regulations and legal derogations were applied to shorten the authorisation process, to facilitate and accelerate mass vaccination.

Vaccination against SARS-CoV-2 in the EU started at the very end of 2020. The success of mass immunisation now mostly depends on the vaccine compliance of the European populations.

Vaccine hesitancy and v*accine incompliance*

The topic gained a particular nuance within the context of the SARS-CoV-2 pandemic, however, vaccine incompliance is a much broader issue significantly burdening the national public health systems.

Vaccine hesitancy is a worldwide growing concern and gains particular significance for pandemic management. It is associated with several social, demographic and economic factors. According to a recent study on the vaccination willingness against SARS-CoV-2 (Lazarus et al. 2021), there are significant variations across countries, Eastern Europeans displaying more vaccine hesitancy than other countries. Women are more

likely to comply with vaccination recommendations. With respect to the pandemic, people with higher education and better income are more likely to accept vaccination recommendations. Own and family members' experience with the illness does not increase vaccination willingness, but the mortality rate in a population does. It is remarkable and highly relevant for the EU pandemic policy that trust towards national government is associated with higher vaccine acceptancy (Lazarus et al. 2021). Eventual side effects of vaccines to be revealed in the near future might also reduce trust and further willingness to participate in the immunisation program to overcome the Covid-19 pandemic.

In the last decade, child immunisation coverage has increased in the EU member states. Besides the availability of health services, the health literacy of mothers is decisive in this respect. In Eastern Europe, for instance, the limited knowledge of vaccination and the vaccination noncompliance of low status groups led to decreasing vaccination rates of babies and children. As a result, previously overcome communicable childhood diseases like measles have emerged newly recently (INSP 2019). Some Eastern European countries are still about 10% below the optimal vaccination rate.

Migration and public health issues

Immigration brings about further risks for public health for the indigenous populations. Although most migrants and asylum seekers arriving to the EU are healthy upon arrival, there are some public health threats that concern the indigenous population of the EU through migration from other continents. Most prominently, the spread of communicable diseases (tropical diseases, HIV) need to be kept under control by rigorous monitoring of immigrants. The Health Security Committee of the EU coordinates the monitoring of communicable diseases via the Early Warning and Response System.

Social inequalities in the state of health

The increase of healthy life expectancy and the general improvement of the state of health is not uniform in all population groups. Very often there are considerable inequalities with respect to morbidity and mortality rates which originate not in biological but in lifestyle related underlying causes. These disparities can be found among countries/cultures and within countries, too.

Large inequalities in life expectancy persist not only by gender, but also by socio-economic status. For women and men alike (though prominently for men) educational attainment is decisive: there is a disadvantage of about 7 years between the life expectancy of a man with low education compared with one with high educational attainment.

People with higher socio-economic status are generally healthier and live longer than those with a low status and unfavourable living conditions, partly because their nutrition is proper and their access to health services easier. The risks of disease and death are also strongly related to work conditions which are harder for workers with

low educational attainment mostly performing hard physical work. Social inequalities are reflected by morbidity rates in spite of the fact that even in modern times a share of hidden morbidity still exists, that is, people suffer of some diseases without them being knowledgeable of that, as they rarely visit the doctor and thus their illness remains undiagnosed.

Morbidity and mortality resulting from injuries are most strongly connected to socio-economic status. Cardiovascular morbidity and mortality, as well as most types of cancer also negatively correlate with socio-economic status: among people with better status morbidity and mortality is lower.

Among people with high educational attainment there are far fewer individuals suffering from diabetes, high blood pressure, liver cirrhosis, chronic respiratory disease, or stomach ulcer. Another epidemiological effect of school attainment is reflected by the fact that people with low educational attainment are overrepresented among those with bad health, particularly in the case of cardiovascular diseases (heart disease and high blood pressure).

Improper health behaviour is one of the mediators from socio-economic status to illness. Poor nutrition but also intentional risky behaviours like smoking, alcohol consumption and drug use contribute to the emergence of diseases. Further, psychosocial mediators like hopelessness and distress also play a role between social status and the genesis of diseases, increasing susceptibility to various types of illnesses. Unemployment experience but alone the risk and the fear of losing one's job as well as poor working circumstances are associated with high levels of psychological distress, which is a risk factor for several chronic conditions. Social stress places a heavy burden on people with low education, and they often lack appropriate coping and problem solving competences to successfully buffer these impacts.

Pathogeneous environmental factors as well as unfavourable health behaviour occur more often among people with low socio-economic status, which peak in carcinogenic work harms, various types of cancer, injuries, disabilities, diabetes, diseases of the nervous system and mental disorders. Among the poor, infectious diseases, particularly tuberculosis is also more frequent due to bad housing conditions and lack of proper hygiene as well as household overcrowding. Although most diseases hit the poor, there are some that disadvantage precisely the wealthier people. Most remarkably, breast cancer generally strikes women with high educational attainment and professional career who do give birth to few children (or none) and/or are not breastfeeding. However, survival chances are yet again unequal due to the selective availability and affordability of expensive treatment options for cancer patients.

To sum up, social inequalities are reflected by the state of health of individuals. The larger the gap between social strata, the more accentual the health disparities. The SARS-CoV-2 pandemic exacerbated social inequalities in health, in the sense that mortality was higher among the poor and in ethnic minorities, due to the accumulation of risk factors.

In health literacy, too, there is a substantial social gradient (Sørensen et al. 2015). About half of the adult population in Europe displays limited health literacy, with considerable differences between member states in favour of Western and Northern European

societies. Further, national and ethnic minorities are not always competent in the official state languages, so they are at-risk groups for insufficient health literacy. Health policy decisions should consider the disadvantages of such groups and address this issue more efficiently.

With respect to the effect of the social gradient in vaccination, literature is inconclusive. Although the relationship between health literacy and vaccine compliance is not always clear (Lorini et al. 2018), most data provide evidence for the fact that low social status is a predictor for vaccine hesitancy and incompliance (MacDonald et al. 2015). However, some qualitative research results suggest that highly educated people also tend to disseminate countering views to the benefits of vaccination (Attwell et al. 2018). In recent years, public health literature has acknowledged health literacy as a mediator towards state of health which increasingly needs promotion.

Conclusions

This chapter has discussed the most important public health topics in the European Union, focusing on common issues and health problems rather than making comparisons and highlighting differences. In accordance with public health endeavours, it thematises the general and not the specific.

The chapter presented the current state of the art in the member states, reflecting upon the most important facts and characteristics. To start with, the epidemiological transition was briefly outlined, followed by the presentation of EU institutions that monitor health indicators and provide guidance for national health policies. In the core content of the chapter, morbidity and mortality indicators were defined. The main causes of death, cardiovascular diseases, cancer and respiratory diseases were presented and their non-biological predisposing causes were discussed with respect to chronic and infectious diseases. For non-communicable diseases, health behaviour and environmental impacts are primary. For communicable diseases, vaccine incompliance and immigration entail considerable risks. Low social status and poverty are unfavourable circumstances for health. Last, health inequalities and the mediating factors between social status and diseases were discussed.

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