3 Health Behaviour of Health Professionals – What Should it Be Like?

Health behaviours are some of the well-known and well documented factors affecting health. From classic large studies in Framingham in the USA to another study in Alamenda County in California (Housman & Dorman, 2005; Levy & Wang, 2013) such behaviour as physical activity, appropriate nutrition, moderate alcohol drinking and non-smoking were clearly demonstrated as key for the risk of developing circulatory system diseases and better health indicators in general. However, more detailed studies of links between health behaviour and health do not always give unequivocal results. This may result from various relationships between behaviours. Gniazdowski (1990) indicates that developing a condition with a behavioural basis is determined by the number, nature, intensity and interaction of behavioural factors of a person. The interaction of these factors may be additive in nature – which means adding up the influences of individual risk factors of a condition. The probability of developing a condition increases proportionally with the weight of individual risk factors of a given person. Another type of interaction is a synergistic effect, which means additional intensification of the effects of one risk factor by the presence of another (smoking tobacco by people working with asbestos). The opposite effect is also possible when one behaviour neutralizes the negative impact of another behaviour on health (a diet rich in green vegetables decreases a negative effect of smoking on health).

McGinnis and Foege (1993) have identified the non-genetic factors that increased total mortality in the United States and estimated their contributions to the ten leading mortality diagnoses: (1) tobacco use, (2) inadequate or excessive nutrition (dietary habits), (3) inadequate aerobic exercise, (4) excessive alcohol consumption, (5) lack of immunization against microbial agents, (6) exposure to poisons and toxins, (7) firearms, (8) risky sexual behaviours, (9) motor vehicle trauma, (10) use of illicit drugs. The majority of diseases and causes of deaths in developed countries (cancer, heart disease, stroke etc.) are attributed to co-occurring health behaviours such as smoking, alcohol abuse, physical inactivity, poor diet. There is evidence that unhealthy behaviours co-occur and as a result increase the risk of developing the disease. Analysis of data from the 2001 National Health Interview Study indicated that the majority of adults in the United States met criteria for two or more risk behaviours (Fine, Philogene, Gramling, Coups, & Sinha, 2004; Pronk, Anderson, Crain, Martinson, O'Connor, Sherwood, & Whitebird, 2004). The consequences of an increasing number of risk factors identified in patients are of a medical, but also a financial nature (Edington, Yen, & Witting, 1997). Longitudinal data indicate that effectively treating two behaviours reduces medical costs by about $2,000 per year (Edington, 2001). Undertaking actions in the area of multiple risk behaviours offers a chance of potentially greater health benefits, maximizes the use of means and resources related to health promotion, and decreases the costs of health care.

This book analyses these four basic health behaviours which are the main risk factors of lifestyle-related diseases: physical activity, nutrition, alcohol consumption and smoking. They are described below in the context of their relations to health and the resulting recommendations.

3.1 Physical Activity

Physical activity is one of the key components in a healthy way of life. Physical activity, which is defined as, "bodily movement that is produced by the contraction of skeletal muscle and that substantially increases energy expenditure" (US Department of Health and Human Services, 1996, p. 20), or, "any force exerted by skeletal muscles that results in energy expenditure above resting level" (Caspersen, Powell, & Christensen, 1985, p. 127), has been fundamentally restricted through changes to society throughout the 20th century. Physical activity can take many forms and consist of miscellaneous activities, such as occupational, household, transport, and leisure-time activities. Similar to other health behaviours, physical activity is conditioned by socio-demographic factors. The Special Eurobarometer Research (2014) has shown that the number of people (in Europe) who never exercise or engage in sport increased by 3% within the previous five years. A similar increase has been registered in Poland. Approximately 35% of Polish people do not willingly engage in daily physical activities, e.g. bike riding, gardening, dancing etc. which is greater than the EU-average of 30% inactive (Special Eurobarometer Research, 2014). In Europe we can see that the percentage of people not engaging in vigorous physical activities has increased by 4%, to an overall of 54%, within a decade. In Poland the overall percentage is even greater at 59%. The percentage of Europeans not doing moderate physical activity has increased to 44%. Poles seem especially loath to this kind of physical activity with 56% not doing it at all. In Europe we see a beneficial change regarding daily walking. Unfortunately, in comparison to the European norm, Poles appear unfavorable as they are less likely to have walked for ten or more minutes on at least four days (41% Poles compared to 60% percentages for Europe). In Poland we have also the highest proportion of respondents (25%) who not walk for ten minutes or more per day during a week, in comparison to 13% for Europe. Poles' physical activity decreases with age, but increases with better education and better financial self-assessment (Aktywność fizyczna Polaków, 2013). Poles most often do sport for health (70%) and pleasure (61%). There is a connection between the reasons for doing sport and the choice of sport or physical activity. Running, swimming, cycling, aerobics and fitness are chosen by people who prefer to do the sport for health reasons. Exercise at the gym and bodybuilding are also selected for health, but also to enhance body-image. On the other hand, enjoyment is the main reason given for dancing, hiking, playing soccer, doing winter sports and volleyball.

The observed changes in physical activity result especially in deteriorating health indicators. As a basic component of energy expenditure physical activity has

a huge impact on the energy balance and body composition. One of the particularly important health results which can be achieved, is the substantial reduction in abdominal subcutaneous and visceral fat (McArdle, Hillman, Beilin, & Watts, 2007). Aerobic exercise, especially, longer and more prolonged is consistent with the increase of high density lipoprotein (HDL) cholesterol (Durstine, Grandjean, Cox, & Thompson, 2002). There is substantial evidence that physical activity is an effective method of enhancing insulin sensitivity and therefore counteracting insulin resistance (Hardman & Stensel, 2003). Physical activity is also well-known as the main, modified risk factor with medical disturbances such as: cardiovascular disease (CVD), coronary heart disease, stroke, type 2 diabetes, osteoporosis, colon and breast cancers, possibly of endometrial and prostate cancers (Buttriss & Hardman, 2005; Department of Health, 2004; Gonçalves, Florêncio, de Atayde Silva, Cobucci, Giraldo, & Cote, 2014; Langsetmo, Hitchcock, Kingwell, Davison, Berger, Forsmo, Zhou, Kreiger, & Prior, 2012; Miles, 2007; Physical Activity Guidelines Advisory Committee, 2008; Schmid & Leitzmann, 2014; Warburton, Charlesworth, Ivey, Nettlefold, & Bredin, 2010; Warburton, Nicol, & Bredin, 2006; WHO, 2010). Physical activity and exercise can decrease the risk of fractures and injurious falls (Pereira, Baptista, & Infante, 2014; Thibaud, Bloch, Tournoux-Facon, Brèque, Rigaud, Dugué, & Kemoun, 2012). Scientific research supports the observation that physical activity has a positive impact on the mental health. The release of endorphins (endogenous opioids) in the brain can lead to mood enhancement (Peluso & Guerra de Andrade, 2005). Motor skills training can also improve the executive functions of cognition (Dishman, Berthoud, Booth, Cotman, Edgerton, Fleshner, & Zigmond, 2006; Chien-Ning, Bih-Shya, Meei-Fang, 2011). Physical activity is linked to a better healthier quality of life, general well-being, as well as self-esteem (Anokye, Trueman, Green, Pavey, & Taylor, 2012; Maher, Doerksen, Elavsky, Hyde, Pincus, Ram, & Conroy, 2013; Sonstroem, 1984). Exercise has been shown to help reduce the risk of depression (Dinas, Koutedakis, & Flouris, 2011). Physical activity has a major health effect worldwide. Generally, regular physical activity increases life expectancy (Lee, Shiroma, Lobelo, Puska, Blair, & Katzmarzyk, 2012; Reimers, Knapp, & Reimers, 2012).

Suggestions regarding physical activity and exercise recommendations are quite varied (Blair, LaMonte, & Nichaman, 2004). The most popular recommendation during the 70s and 80s, provided by the American College of Sports Medicine (ACSM), concentrated on improvement and maintenance of physical fitness. The result was that many people were not able to live up to these recommendations. It was also believed that this inability did not benefit health. From 1990 onwards ACSM noticed the beneficial effects of frequent exercise done for longer duration, but at a lower intensity than earlier prescriptions. This was the beginning of a paradigm that includes activity recommendations for both performance and health-related outcomes (Blair, LaMonte, & Nichaman, 2004). Table 3.1 shows the summary of current suggestions and recommendations from leading health agencies regarding required physical activity.

Table 3.1 Current PA recommendation for adults of American College of Sports Medicine, WHO, CDC

	Frequency	Duration	Intensity	Additional indications
WHO EU region[1]	≥5 wk⁻¹	≥30 min	moderate-intensity aerobic activity	
	≥3 wk⁻¹	≥20 min	vigorous-intensity aerobic activity	muscular strength training 2-3 days per week — possible accumulation bouts of at least 10 minutes duration
	≥5 wk⁻¹		any combination of walking, moderate- or vigorous-intensity activities ≥ 600 METs per week	
WHO global recommendation[2]	≥150 min per week		moderate-intensity	muscle-strengthening activities ≥ 2 days per week — possible accumulation bouts of at least 10 minutes duration
CDC[4]	≥75 min per week		vigorous-intensity aerobic activity	additional health benefits, increase their moderate-intensity aerobic physical activity to 300 min per week, or to 150 min of vigorous-intensity aerobic physical activity per week, or an equivalent combination of moderate- and vigorous-intensity activity
	equivalent combination of moderate- and vigorous-intensity aerobic activity			
ACSM[3]	5 d·wk−1	≥30 min·d⁻¹ total ≥150 min·wk⁻¹	moderate-intensity cardiorespiratory exercise training	2-3 d·wk⁻¹, resistance exercises for each of the major muscle groups, and neuromotor exercise involving balance, agility, and coordination. ≥2 d·wk⁻¹ flexibility exercises for each the major muscle-tendon groups (a total of 60 s per exercise) — possible accumulation bouts of at least 10 minutes duration
	≥3 d·wk⁻¹	≥20 min·d⁻¹ ≥75 min·wk⁻¹	vigorous-intensity cardiorespiratory exercise training	
	combination of moderate- and vigorous-intensity exercise to achieve a total energy expenditure of ≥500-1000 MET·min·wk⁻¹			

[1] - Country profiles on nutrition, physical activity and obesity in the 53 WHO European Region Member States. Methodology and summary, WHO 2013; EU Physical Activity Guidelines Recommended Policy Actions in Support of Health-Enhancing Physical Activity 2008; http://ec.europa.eu/sport/library/policy_documents/eu-physical-activity-guidelines-2008_pl.pdf

[2] - Global recommendations on physical activity for health., WHO 2010.

[3] - Garber et.al.2011; American College of Sports Medicine. ACSM's Guidelines for Exercise Testing and Prescription. 8th ed. Philadelphia (PA): Lippincott Williams & Wilkins; 2010. p. 366.

[4] - http://www.cdc.gov/physicalactivity/everyone/guidelines/adults.html

As can be seen, the recommendations regarding healthy physical activity are similar and can easily be integrated into an adult's work schedule and free time. Such a consensus has been made possible due to equivalent results in regard to the connection between the weekly physical activity and lifestyle diseases. On the other hand, results regarding the amount of dose accumulation are not equivalent, therefore the recommendations are more flexible. At the same time, muscle-strengthening training is listed in every recommendation as a complementary point and not merely a suggestion, the same applies for flexibility exercises. European Union countries, including Poland, are keen to increase the physical activity of inhabitants. Over the past decade an intense monitoring and consistent social policy has been taking place which promotes good practical solutions and encourages member states to incorporate the proposed solutions (Council conclusions on nutrition and physical activity, 2014; Green Paper, 2005; Physical activity and health in Europe, 2006). Health-care professionals are one of the key components of this policy, not only as beneficiaries, but more importantly as executors.

3.2 Nutrition

Nutrition is an important determinant of health. Research studies have revealed that there is an consistent relationship between unhealthy diet and the emergence of a range of chronic non-infectious diseases, including cardiovascular diseases, various cancers, and diabetes mellitus (Brunner, Mosdøl, Witte, Martikainen, Stafford, Shipley, & Marmot, 2008; Heidemann, Schulze, Franco, van Dam, Mantzoros, & Hu, 2008; Isharwal, Misra, Wasir, & Nigam, 2009; Kant, 2004; Nettleton, Polak, Tracy, Burke, & Jacobs, 2009; Panagiotakos, Pitsavos, Chrysohoou, Palliou, Lentzas, Skoumas, & Stefanadis, 2009). In the past decade, the growing interest in nutrition epidemiology has been concentrated on the investigation at the level of foods and dietary patterns and less on investigations at the level of individual nutrients (Hu, 2002; Kant, 2004; Nettleton, Schulze, Jiang, Jenny, Burke, & Jacobs, 2008). Such an approach gives a better picture of the complex impact of the general diet on health than an analysis of a single food item only.

The correlations between the recommended consumption of particular food groups and health conditions are well known. The proper consumption of **vegetables and fruits** is associated with reduced risk for cardiovascular disease (Hooper, 2007), heart disease (He, Nowson, Lucas, & MacGregor, 2007), stroke (Dauchet, 2005), hypertension (Svetkey, Simons-Morton, Vollmer, Appel, Conlin, Ryan, Ard, & Kennedy, 1999), many cancers (World Cancer Research Fund/American Institute for Cancer Research, 2007), vision problems associated with aging (Cho, 2004), possibly diabetes (Montonen, 2005), and weight reduction (National Center for Chronic Disease Prevention and Health Promotion, 2007). Additionally, the consumption of **legumes** decreases total and LDL cholesterol and other risk factors for heart disease

(Bazzano, 2011; Mattei, Hu, & Campos, 2011). Legume fiber was among the fiber types associated with reducing risk for metabolic syndrome (Hosseinpour-Niazi, 2011). Eating legumes or beans especially may reduce the risk for developing certain types of cancers (Amarowicz, 2008; Cade, 2007; Dahm, 2010; Kolonel, 2000; Thompson, 2012; Wang, 2011).

The highest category of **whole grain** intake is associated with a 21% reduction in cardiovascular disease risk, a 26% lower risk of type 2 diabetes and consistently less weight gain. Higher levels of whole-grain intake are associated with lower levels of fasting glucose, total and LDL - cholesterol, systolic and diastolic blood pressure, and weight gain (Ye, Chacko, Chou, Kugizaki, & Liu, 2012). The German Nutrition Society ranked the evidence on whole grains and health and determined that there is convincing evidence that the whole grain consumption reduces total and LDL cholesterol, probable evidence that it reduces the risk to type 2 diabetes, possible evidence that it reduces the risk of obesity in adults, but insufficient evidence that it reduces the risk of metabolic syndrome (Hauner et al., 2012). A regular consumption of three or more food portions per day based on wholegrain cereals decrease the risk of CVD, and the risk of type 2 diabetes by 20-30%. Protection against the risk of colorectal cancer and polyps, other cancers of the digestive tract, cancers related to hormones and pancreatic cancer have been associated with the regular consumption of wholegrain cereals and derived products (Gil, Ortega, & Maldonado, 2011).

Pan, Sun, Bernstein, Schulze, Manson, Willett and Hu (2011) suggest that **red meat** consumption, particularly processed red meat, is associated with an increased risk of type 2 diabetes. They also estimated that substitutions of one serving of nuts, low-fat dairy, and whole grains per day for one serving of red meat per day are associated with a 16–35% lower risk of type 2 diabetes. The findings from a Swedish prospective cohort of men and women indicate that processed meat consumption is positively associated with risk of stroke (Larsson, 2011a, b) and the results from meta-analysis indicate that consumption of fresh red meat and processed red meat as well as total red meat is associated with increased risk of total stroke and is chemic stroke, but not hemorrhagic stroke (Kaluza, Wolk, & Larsson, 2012). The results from the European Prospective Investigation into Cancer and Nutrition support a moderate positive association between processed meat consumption and mortality, in particular due to cardiovascular diseases, but also to cancer (Rohrmann et al., 2013). There is more evidence that high consumption of red meat, particularly processed meat may be a risk factor for coronary heart disease, the metabolic syndrome, some types of cancers, whereas white meat may be associated with reduced risk of chronic liver disease and hepatocellular carcinoma as well as with the decrease of men's death rate (Freedman et al., 2010; Kappeler, Eichholzer, & Rohrmann, 2013; Micha, Wallace, & Mozaffarian, 2010; Sinha, Cross, Graubard, Leitzmann, & Schatzkin, 2009; Smolinska & Paluszkiewicz, 2010). On the one hand **Fish** consumption has the advantages listed below, but on the other hand it also presents risks. Due to increased exposure to toxicants in fish, such as methylmer cury (MeHg) and polychlorinated

biphenyls (PCBs), it is recommended to limit fish consumption in risk groups (U.S. Environmental Protection Agency (EPA), 2004). Nevertheless, many organizations of physicians and nutritionists encourage fish consumption for the entire population as a way to increase dietary intake of the n-3 (omega-3) long chain polyunsaturated fatty acids (LCPUFAs) that may prevent cardiovascular disease, risk of fatal ischemic heart disease, risk of stroke and improve neurological development (Breslov, 2006; Kris-Etherton, Harris, & Appel, 2002; Kris-Etherton & Innis, 2007; Larsson & Orsini, 2011; Lee et al., 2009; Mozaffarian, 2011). Fish consumption is also associated with decreased risk of depression for women, but it also moderately protects from cerebrovascular risk (Chowdhury et al., 2012; Smith, Sanderson, McNaughton, Gall, Dwyer, & Venn, 2014). Fish consumption is considered one of the key components of a cardioid-protective diet. Current cardiovascular guidelines for healthy individuals encourage consumption of a variety of fish, preferably oily types, at least twice a week. (Gidding et al., 2009; Graham et al., 2007). However it is necessary to have a reliable, comprehensive information which consider the different aspects of consumer choice regarding fish. Advice regarding this topic should consider the following challenges: toxicological hazards, nutritional benefits, environmental sustainability, economic influences (Oken et al., 2012).

Meeting and exceeding recommendations for consumption of **dairy products** each day leads to better nutrient status, can lead to improved bone health, and is associated with lower blood pressure and a reduced risk of cardiovascular disease and type 2 diabetes (Rice, Quann, & Miller, 2013). The observational evidence does not support the hypothesis that dairy fat or high-fat dairy foods contribute to obesity or cardiometabolic risk, and suggests that dairy or high-fat dairy consumption within typical dietary patterns is inversely associated with obesity risk, cardiovascular disease risk, heart disease, stroke or diabetes (Elwood, Pickering, Givens, & Gallacher, 2010; Fumeron et al., 2011; Kratz, Baars, & Guyenet, 2013; Rice, Quann, & Miller, 2013; Soedamah-Muthu et al., 2011).

In terms of **fat** intake the best health results, which are related to the decrease of coronary heart disease risk; can be given by replacing trans- or saturated fat with poly- and monounsaturated fat (Hu, Stampfer, & Manson, 1997; Willett, 2012). There is also well know protective role for high olive oil consumption on the risk of CVD, stroke and type 2 diabetes (Ruiz-Canela & Martínez-González, 2011; Salas-Salvadó, 2011; Samieri, 2011).

Proper nutrition pyramids are currently the most popular, complementary and socially recognizable summaries in regard to the correct nutrition. The first version of such a pyramid was presented in 1992 by the U.S. Department of Agriculture (USDA) under the title, *The Food Guide Pyramid;* the latest version of nutrition pyramid, dated 2005, is different in both design and recommendations and is known by the name *MyPyramid*. Its recommendations were subsequently transcribed into a form called *MyPlate*. They are based on *Dietary Guidelines for Americans 2010* (USDA, 2010). A proper nutrition pyramid has also been proposed by Walter Willet from

the Harvard School of Public Health (U.S.) in 2003, (updated in 2008 to *Healthy Eating Pyramid*). In 2011 they also created the *Healthy Eating Plate* based on the best available scientific evidence of the links between diet and health. The main task of the authors is the correction of previous mistakes – in their opinion – in the USDA food pyramid and plate (Willet & Stampfer, 2006). The Polish Institute of Nutrition and Food located in Warsaw has also developed and is promoting nutritional rules in the form of a pyramid (Principles of Proper Nutrition, 2009). All of these pyramids have in common that physical activity is one of the most important elements of a healthy lifestyle associated with the amount and quality of the consumed food. Diet, which is appropriately balanced through physical activity, can maintain the normal body weight and helps to have the strength and energy for daily challenges. Golden Chart of Property Nutrition is another document which includes guidelines regarding a balanced diet and it belongs to the consensus of Polish organizations dealing with the promotion of healthy lifestyle (Golden Chart of Property Nutrition, 1997). The following diet recommendations are promoted in Polish documents: whole grain cereal products at every meal, as well as vegetables and fruits; and between the meals a minimum of two cups of milk (best light) or yogurt, kefir as well as 1 – 2 slices of cheese, one portion of fish, poultry, peas, beans or meat, one tablespoon of oil or olive oil, and two teaspoons of light margarine (without trans fats), a minimum of one litre mineral water and natural vegetables/fruits juices, minimum three moderate meals per day, but absolutely including breakfast. Salt, sugar, and alcohol should be limited. These recommendations are the development-base for research which examines the dietary patterns of health students and professionals. There are also specially-developed recommendations for medical staff relating to their health and well-being, which emphasise the challenges of physicians' diets at work (Puddester, Flynn, & Cohen, 2009). Some of the most important suggestions include eating breakfast, taking healthy and convenient snacks, planning and prioritizing nutritious breaks, preparing a balanced nutritional intake, analysing and recognising the emotional and physical symptoms indicating that it's time to eat and drink, building a healthy environment for nutritional behaviour at work.

3.3 Smoking

Almost 6 million people die from tobacco use each year, both from direct tobacco use and second-hand smoke. By 2030, this number will increase to 8 million, accounting for 10% of all deaths (Tobacco fact sheet No. 339, 2014). Smoking is estimated to cause about 71% of lung cancer, 42% of chronic respiratory disease and nearly 10% of cardiovascular disease. The proportion of all death attributed to tobacco in the world is from 3% in Africa to 16% in Europe and Americas (WHO global report: mortality attributable to tobacco, 2012). It is strongly connected with smoking prevalence which is lowest in Africa – 15% and highest is Europe – 28% (WHO report on the global

tobacco epidemic, 2013). The highest incidence of smoking among men is in lower-middle-income countries; for total population, smoking prevalence is highest among upper-middle-income countries.

The most important health problems connected with smoking are: lung cancer, heart diseases, and tuberculosis. But there are some more side effects like: psoriasis, cataracts, wrinkling, hearing loss, tooth decay, osteoporosis, deformed sperm, discolored fingers, and Buerger's disease. Also other types of cancers are connected with smoking, including nasal and para-nasal cavity cancer, cancer of the oral cavity, nasopharynx cancer; oro and hypopharynx, larynx, esophagus, stomach, pancreas and kidney cancer (Monograph on TB and tobacco control, 2007; Taha, 2012; The Health Consequences of Smoking, 2014; The smoker's body, 2004;).

There are great differences in the incidence of smoking between countries in the European Union. Southern countries see the greatest proportion of smokers, specifically Greece (40% smokers), Bulgaria (38%), Hungary (38%), Turkey (37%) and the Republic of Macedonia (37%). Northern countries have the lowest proportion of smokers: Sweden (16%) and Finland (21%). Socio-demographically, smokers are more likely to be male than female, under 54 years of age and from lower social groups. In terms of occupation, smokers are more likely to be unemployed, manual workers or self-employed (Tobacco; Special Eurobarometer 332, 2010).

In Poland the Global Adult Tobacco Survey (GATS) provided the information that in 2010 33.5% of adult men and 21% of adult women smoked tobacco every day. Around 1.1million Poles smoked occasionally (about 3.3% in both genders). Overall, 30.3% of Poles are current (daily or occasional) smokers. According to OECD Health Data (2012), prevalence of smoking decreased by 14% in Poland during the previous decade.

Some regions of the world like Europe have quite strong smoking policies but there are also countries where the tobacco industry uses plenty of opportunity to persuade people to smoke, e.g. in Africa and Asia. For two decades the WHO has undertaken many initiatives aiming to protect the global population against smoking and the resulting epidemic of tobacco-related diseases. In 2003 the WHO proposed the Framework Convention on Tobacco Control (WHO Framework Convention on Tobacco Control, 2003) which was signed by 168 countries, including the European Community. It indicated the assumptions of the anti-smoking policy which the signatories undertook to implement: price and tax measures to reduce the demand for tobacco, and non-price measures to reduce the demand for tobacco, namely:

– Protection from exposure to tobacco smoke;
– Regulation of the contents of tobacco products;
– Regulation of tobacco product disclosures;
– Packaging and labeling of tobacco products;
– Education, communication, training and public awareness;
– Tobacco advertising, promotion and sponsorship; and,
– Demand reduction measures concerning tobacco dependence and cessation.

The first effects of the implementation of the anti-tobacco policy have been evident already. In Poland, for example, there is a strong decline (-22%) in the prevalence of smoking in eating and drinking establishments, only 5% of respondents noticed smoking people in an eating establishment. In comparison the average percentage for EU is 14%. But there is still much to do, for example to reduce exposure to tobacco at workplace. In Poland only 59% of respondents declare that they are almost never exposed to tobacco, this is a lower percentage compared to the EU average of 72% (Attitudes of Europeans towards tobacco, 2012).

An important role in the preventive actions is played by health professionals. On the one hand, they are professionally prepared in the context of health consequences and treatment of damage from tobacco-related diseases. On the other hand, they simply lack educational competence (including soft skills) related to the consulting role in the process of quitting smoking. Health professionals are not always a good example in this respect, which will be discussed further in this study.

3.4 Alcohol Consumption

The consumption of small amounts of alcohol by adults (up to 12 gram per day) may be beneficial for their bodies as it protects the circulatory system, decreasing the risk of stroke, while alcohol consumption of more than 60 gram per day is associated with an increased relative risk (Reynolds, Lewis, Nolen, Kinney, Sathya, & He, 2003; Ronksley, Brien, Turner, Mukamal, Ghali, & William, 2011). Excessive alcohol consumption is related to an increased risk of such chronic diseases as mouth and oropharyngeal cancers, esophageal cancer, liver cancer, breast cancer, epilepsy, and liver cirrhosis (Rehm, 2003). In the meta-analysis of Corrao, Bagnardi, Zambon and La Vecchia (2004), direct trends in risk were observed for cancers of the oral cavity and pharynx, esophagus, and larynx. Direct relations were also observed for cancers of the colon, rectum, and liver, as well as for breast cancer. Among non-neoplastic conditions, strong direct trends in risk were derived for hypertension, liver cirrhosis, chronic pancreatitis, and injuries and violence (Corrao, Bagnardi, Zambon, & La Vecchia, 2004). Alcohol consumption is associated with neuropsychiatric conditions, like depression or anxiety (Boden & Fergusson, 2011). Harmful use of alcohol weakens the immune system thus enabling development of pneumonia and tuberculosis (Lönnroth, Williams, Stadlin, Jaramillo, & Dye, 2008).

Excessive alcohol consumption is also a significant social problem which not only affects the person abusing alcohol, but also their family, living and working environment, as well as local community and the state. In 2004 the net effects of alcohol consumption on health were detrimental, with an estimated 3.8% of all global deaths and 4.6% of global disability-adjusted life-years attributable to alcohol. In 2012, 5.9% of all global deaths were attributable to alcohol – 7.6% for men, 4.0% for women (Global status report on alcohol and health, 2014). Disease burden is closely

related to average volume of alcohol consumption, and, for every unit of exposure, is strongest in poor people and in those who are marginalized from the society. The costs associated with alcohol amount to more than 1% of the gross national product in high-income and middle-income countries, with the costs of social harm constituting a major proportion in addition to health costs (Rehm, 2009).

Due to an equivocal, non-linear link between alcohol and health which is both potentially preventive and definitely harmful, health recommendations in this respect gain particular importance. Another difficulty is related to specifying a standard alcohol dose in the form of one standard drink. Due to historical and geographic determinants, it turns out that one drink is different in different places, for example it amounts to 8 grams of pure alcohol in Ireland and UK, or 19.75 grams in Japan (International drinking guidelines, 2003). Calculations of risk, conducted at a range of alcohol concentrations, take into consideration evidence about the impact of alcohol consumption on overall health and on a number of specific conditions, derived from mortality and morbidity data. While for some individuals no "safe" level of drinking may exist (Dufour, 1999), "safe" or "low risk", "moderate" drinking limits and health recommendations are indicated. For example, physiological differences and different ability to metabolize alcohol between men and women result in differences in recommendations for these groups.

According to the Dietary Guidelines For Americans (2010) moderate consumption of alcohol is defined as up to 1 drink per day (14 g/day) for women and up to 2 drinks per day (28 g/day) for men. Heavy or high-risk drinking is the consumption of more than 3 drinks on any day or more than 7 per week for women and more than 4 drinks on any day or more than 14 per week for men. Binge drinking is the consumption within 2 hours of 4 or more drinks for women and 5 or more drinks for men. The World Health organization promotes the use of the AUDIT instrument (The Alcohol Use Disorders Identification Test), which allows for determining the risk level zones and indicates potential ways of action in primary care. The recommendation for "low-risk" drinking level set in the Guide to Low-Risk Drinking and used in the WHO study on brief interventions is no more than 20 grams of alcohol per day, 5 days a week (recommending at least 2 non-drinking days), and a standard drink equivalent is 10 grams of alcohol (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). For example: 100 ml glass wine at 12% alc. vol., 30ml nip of high strength spirit at 40% alc. vol., but 285 ml of full strength beer at 4.8% alc. vol. or 60 ml of fortified wine at 20% alc. vol. However recommendations for "low risk" alcohol consumption may be modified to correspond to theAustralian Government webpage: Standard drinks guide national policy and/or local circumstances. Different limits for males, females, and the elderly may be cited (Babor & Higgins-Biddle, 2001).

Alcohol consumption is one of the more important challenges of the EU health policy and it is considered to be a substantial problem in the WHO European Region (Lim et al., 2012), where the highest consumption levels continue to be found in the developed world. In 2010 total alcohol per capita consumption worldwide was

6.2 litres of pure alcohol and 10.9 in Europe (Global status report on alcohol and health, 2014). In the EU in 2004, alcohol was responsible for 1 in 7 male deaths and 1 in 13 female deaths in the group aged 15-64 years (Shield, Kehoe, Gmel, Rehm, & Rehm 2012).

Recent analyses confirm the falling trend in alcohol consumption in some regions of Europe, which is related to lower mortality rate due to alcohol related diseases. However, it is still high, in particular in central and eastern Europe, where a rising trend in alcohol consumption is noted (Anderson & Baumberg, 2006). In Poland alcohol consumption has stabilized in the last decade. Consumption of recorded alcohol increased, while consumption of unrecorded alcohol decreased. In 2010 alcohol consumption per capita (15+) was higher than in the EU – 12.5 litres of pure alcohol (Global status report on alcohol and health, 2014).

3.5 Summary

There are not many specifically dedicated health behaviour standards for health professionals. The well-known standards are those prepared by The Royal College of Physicians and Surgeons of Canada (Puddester et al., 2009). The Canadian physicians are also renowned as having good lifestyles, better than average for the population. However, there is still work to be done on improving standards, because this special professional community needs to deal with very high, not ordinary standards. These individuals have to be the role models for their patients, and they have to be healthy to be able to heal their patients.