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HEALTH AND WELLNESS – CONCEPTUAL GROUNDING

Jana STARÁ

Abstract
In nowadays, it is generally understood that human health lies beyond the physical body, which had been the primary focus of medicine for centuries. In 1941, Sigerist wrote, "health is not simply the absence of disease: it is something positive, a joyful attitude toward life, and a cheerful acceptance of the responsibilities that life puts upon the individual (Sigerist, 1941). This development in the understanding of health was underlined by the actual state of human health in the mid-20th century, when the human population struggled less with communicable diseases and more with lifestyle related condition. The modern approach to health aimed to clarify the traditional understanding of it that emerged over several centuries during which people collected health-related knowledge in the form of folk medicine treatments. The aim of the theoretical study is to give a broader background and perspective on the term health, examining it through the lens of Kinanthropology, approaching it from the positive perspective of human flourishing. The main research question states: “What can one do to feel better?” and the answer could be to “Live healthier." Wellness emerged as a new term that would broaden the focus from physical health and would integrate the body, mind and spirit of an individual within the social context in which they exist, while empowering them to take responsibility for the state of their health at any given moment.

Keywords
Life style, Wellness. Interventions, WHO, Health, Disease, Disability

1 INTRODUCTION, BACKGROUND

1.1 Perception and definition of health
Throughout human history, the pursuit of health has been among the primary aims of individuals, communities, national governments and international initiatives. The first Czech president Tomáš Garrigue Masaryk said: "Health - a healthy mind and a healthy body - it is ultimately the aim of all politics and administration" (Fišer, 2014).

Hand in hand with the never-ending pursuit of health go numerous attempts to define health. This idea is built on the presumption of modern science - once we define a specific phenomenon, we can measure it, clearly understand how it functions and suggest operational steps towards support or elimination of it. This modern approach to health aimed to clarify the traditional understanding of it that emerged over several centuries during which people collected health-related knowledge in the form of folk medicine treatments. The point was to make humans healthier; but as the report Doing better, feeling worse showed, the development of society and technology in the context of the past two hundred years have brought scientific
approaches and methods which have unraveled and explained almost all the mysteries of human body and its diseases. Yet, the state of full health is still not a common trait (Knowles, 1977b).

Today, it is generally understood that human health lies beyond the physical body, which had been the primary focus of medicine for centuries. In 1941, Sigerist wrote, "health is not simply the absence of disease: it is something positive, a joyful attitude toward life, and a cheerful acceptance of the responsibilities that life puts upon the individual (Sigerist, 1941, p. 100)." This development in the understanding of health was underlined by the actual state of human health in the mid-20th century, when the human population struggled less with communicable diseases and more with lifestyle related conditions. It was no longer in the capacity of a medical practitioner to make his patient healthier; instead, a multidisciplinary lifestyle approach to the phenomenon was called for.

The modern definition of health by the World Health Organization clearly formulates the need:

“Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” (World Health Organization, 1948)

This positive definition of health was a response to the negative perception of a healthy human as a person not having a physical disease or any sort of mental illness (Larson, 1996) and in the eyes of many created a conception of health seen as an ideal (Schramme, 2007).

According to this definition, health is differentiated from health status. According to Breslow (2006), health has a multidimensional and dynamic potential for improving or at least maintaining whatever health status a person has. He argued that, more than achieving some degree of health status, people want health as a resource for doing the things they want to do. Larson (1996) points out that this definition was created after World War II, during a period when the social health of societies was in question. Broadening the concept of health beyond an individual’s physical health towards the social aspect of it allowed for the rise of new professional areas of health promotion and public health in the second half of the 20th century.

With respect to the complexity of different perspectives on human ailments and flourishing, we agree with Hofmann (2002), who asserts that it is very difficult, if not impossible, to give strict definitions of basic concepts within modern health care. In recent decades, there have been numerous concepts of health developed in the context of different needs and objectives. These range from a theorist’s perspective of health as a striving for conceptual clarity, to more fully operationalizing it via actual medical practice approaches, and beyond to those concerned with wider policy and health-promotion issues in the global context (Law & Widdows, 2008; Sartorius, 2006).

In order to trace the cultural differences in individual perception of health, we use the WHO definition mostly for its conceptual clarity, global recognition and its frequent use in health promotion across public, private and scientific sectors. While respecting the authority of the WHO, we acknowledge some limitations of the definition and work with further refinements of it:

1. The WHO definition of health has been criticized for being overly idealistic and non-operational in
practice. Critics argue that this definition defies measurement, may be unattainable in reality, and marginalizes people with disabilities and groups that view health and well-being as a collective construct (Mittelmark & Bull, 2013; Üstün & Jakob, 2005; Wilson & Hopkirk, 2014; Yach, 2013). Also using the term well-being is by some authors seen as broad and conflating the concepts of health and happiness (Callahan, 1973; L. Frank, 2013; Richards et al., 2015).

2. In particular, due to the use of the word “complete” which implies absolute physical, mental, and social well-being as one of the fundamental rights of every human being, this definition is being seen as somewhat purist, vague and unattainable view of health. (Jadad & O’Grady, 2008; Kristén, Ivarsson, Parker, & Ziegert, 2015; Larson, 1996) It is hard to achieve and/or maintain a state of complete well-being in all dimensions. It is more likely that one experiences highs and lows in different dimensions simultaneously, such as when an individual who is physically healthy yet struggles with relationships or spiritual pursuits, or some other area of his or her lifestyle.

3. Another criticism calls for an adjustment of the WHO definition of health by adding spiritual health to the current three dimensions – physical, mental and social. Research supports arguments that spirituality is part of health and not merely an influence (Larson, 1996), as it contributes to mental and physical health in many persons in their recovery, wellbeing and longevity (Association of American Medical Colleges, 1999; Grant, 2007; Lucchetti et al., 2012). Interventions based on mindfulness and meditation practice have become increasingly popular (Ngô, 2013), prayer is recognized among the most used among the top ten complementary and alternative medicine therapies (National Center for Complementary and Integrative Medicine, 2004) and schools teach courses or content on spirituality (Briggs, Akos, Czyszczon, & Eldridge, 2011) and health and indicated that patients emphasize spirituality in their coping and health care (Koenig, Hooten, Lindsay-Calkins, & Meador, 2010; Lucchetti et al., 2012; Neely & Minford, 2008).

There is still a lack of common agreement about the spiritual dimension of health across the scientific paradigm (Larson, 1996) and further steps need to be taken for recognition of spirituality as a valuable factor of human health. The discussions have already started. In 1984, the World Health Assembly adopted resolution WHA37.13 which made the spiritual dimension a part of WHO member states’ strategies for health (World Health Organization, 1984) and in January 1998, the Executive Board adopted resolution EB 10 1.R2 (World Health Organization, 1998) recommending that the World Health Assembly adds the word “spiritual” to the definition of health in the
preamble to their constitution and the global health-for-all policy (Khayat, 1999). Spirituality has therefore gained recognition in the health field, and professionals, institutions and countries are encouraged to include the spiritual dimension in their health policies and strategies, recognizing it as a fundamental part of health promotion. Note: At this writing, the WHO assembly has still not changed the definition of “health” in the WHO’s constitution.

1.2 Illness, disease and sickness

Speaking about health in a broader perspective, the former physical notion of health has different meanings across various areas of the natural and social sciences. It is argued that disease, illness, and sickness represent different perspectives on human ailments that can be applied to analyze both epistemic and normative challenges to modern medicine. Points of cultural variation with respect to health involve ideas about nosology, aetiology, and therapy, or, more simply, the kinds of illnesses, how and why they occur, and what can be done about them (Basch, 1989; Hofmann, 2002).

Disease is a malfunctioning or maladaptation of biologic and psychophysioligic processes in the individual (Kleinman, Eisenberg, & Good, 2006). In this approach, the focus lies on the patient’s body rather than on the whole person. Disease belongs to public health and is described in the official roster of western, scientifically recognized syndromes - the International Classification of Diseases. Its frequent revisions show that recognized types of diseases are continually changing as scientific knowledge increases and information becomes available (Basch, 1989; Gatchel & Kishino, 2012).

In the Western biomedical model, illness is explained in terms of a patient's presenting pathophysiology. Illness is the matter of medicine and its challenge lies in the fact that all illnesses are individual and each is unique (Basch, 1989). Illness is a personal, interpersonal and cultural reaction to disease or discomfort. It can be seen as the person’s experience of being sick and is reflected in the person’s thoughts, feelings, and altered behaviors, within the context of his or her culture. It means, that people can have illness, but not the disease, as they might have yet developed only its symptoms (Kleinman et al., 2006). To understand a patient’s experience of illness, we must attempt to enter the patient’s world, to understand the patient’s beliefs about what is wrong, why it happened, and what should be done (Kline & Huff, 2008; Weston, Brown, & Stewart 1989).

Sickness is the terrain of social science. An illness transforms a healthy person into a sick person. Being sick is a socially recognized state regardless of the details of the particular cause or ailment, carrying with it certain specific obligations and privileges (Basch, 1989). The sociologist Talcott Parsons has examined the relation of the problem of health and illness as the deviance from the capacity to perform expected tasks and roles. In this he is aligned with current researchers and professionals that see health as human capability and optimal functioning (L. Frank, 2013; Law & Widdows, 2008; Tengland, 2007; Venkatapuram, 2013). Parson’s sick role concept has become challenged in the face of the increased significance of chronic illnesses and the
growing emphasis on lifestyle-centred health promotion that has shaped the focus of medical sociologists towards applied health behaviour (Basch, 1989; Burnham, 2014; Varul, 2010).

The above-mentioned terms can mean minor differences in the general spoken language, but outline three different scientific approaches. Moreover, they illustrate the need for a multidisciplinary approach to health oriented studies.

1.3 Lifestyle

Individual behaviour patterns, or personal “lifestyle”, represent the single most controllable and also one of the most threatening domains of influence over human health (Koop, Pearson, & Schwarz, 2002). Lifestyle is “the typical way of life of an individual, group, or culture (Merriam Webster Dictionary, n.d.).” Jansa defines lifestyle as a dynamic process of individual’s being that is determined by genetic, ethnical, social, cultural, professional and generational factors (Jansa & Kovář, 2010).

A review of recent scientific literature, conducted by author and published in 2016 (Stará & Charvát, 2016), revealed that healthy lifestyle is not a clearly defined concept, yet in their articles authors agree on recommended behaviors that foster human flourishing: daily physical activity at optimal levels, healthy diet and nutrition, maintaining a healthy body weight, and preferably not smoking or abusing alcohol. The term is well established and commonly used in the scientific paradigm due to its measurability and scientifically proven impacts on physical health (Arena et al., 2016; Centres for Disease Control and Prevention, n.d.; Ottevaere et al., 2011; The American Heart Association, n.d.; World Health Organization, 2015). Research that examines the combined effect of lifestyle factors on physical health is plentiful and data have been gathered by Loef and Walach (2012) in a meta-analysis that validated that adherence to a healthy lifestyle is associated with a lower risk of mortality.

Therefore, a healthy lifestyle is considered to be the primary form of prevention of non-communicable diseases. Evidence indicates that ischemic heart disease and other atherosclerotic diseases arise primarily a result of individual lifestyle choices. Of the three risk factors commonly cited, cigarette smoking is clearly a consciously chosen behaviour trait; serum cholesterol level is usually related to the richness of diet, subject to genetic selection; and hypertension is associated with salt intake, weight, and stress. Additional risk factors of atherosclerosis that are commonly recognized include obesity, sedentary living (lack of exercise), and psychosocial tensions, all of which reflect cultural and behaviour characteristics (Arena et al., 2016; Basch, 1989; Loef & Walach, 2012).

Yet, this perspective and its arguments still focus on the behavioural aspects that affect the physical dimension of health and continue to neglect the other dimensions of health. According to a World Economic Forum report, health promoting programs typically put their focus on the human body (cited in Cederström & Spicer, 2015). Kline and Huff (2008) summarize that the daily choices people make with respect to diet, physical activity, sex, substance abuse and addictions, safety, and coping strategies in confronting stress are all important determinants of health. The
mental, social and spiritual dimensions step in with the question “Why do people do what they do?”, or as Arloski (2007) puts it, “why don’t people do what they need to do for themselves?”

1.4 Attitudes to health and the modern approach to health

Attitudes motivate human behaviour and are the driving force of an individual’s lifestyle. Health is a personal quality of an individual, which invites in the individual’s experience and his understanding of what health is and how it functions.

As Pachter (1994) puts it, the individual’s attitude to health is generally a conglomeration of his or her personal beliefs, attitudes, values, and behaviours, ethno cultural beliefs and values, and understanding of biomedical concepts. This personal explanatory model of health and disease influences understanding of its causality and treatment and the role of a patient and creates so called "lay theories of medicine" that guide a person’s preferences and behaviours in the health domain (W. Wang, Keh, & Bolton, 2010).

Different attitudes to health can be put on a spectrum (Pachter, 1994). On one side of the spectrum is a personal model aligned with the western biomedical model that sees the cause of illness in the natural world, whether viral or as an outcome of one’s behaviour, and provides a treatment delivered by a specifically trained physician. On the opposite side of the spectrum are models that see the cause of illness in the supernatural world, these “folk illnesses” are beyond human control. In the middle of the spectrum lie personal models in which illness may result from malfunctions of the body as a result of factors such as diet or behaviour over which the person has some control.

The middle is a common explanation used in developed societies, where illnesses associated with health behaviours such as smoking, drinking, and lack of exercise are commonly cited as personal choices the individual makes. This category also recognizes hereditary, social, economic, and other personality factors that may play a role in illness causality and response. Within this spectrum, the individual’s locus of control determines whether the person will take responsibility for his or her own health or see it as lying outside of the person, handing it to the physician or god or destiny (Helman, 2007; Kline & Huff, 2008; Pachter, 1994; Skolnik, 2007).

Understanding the specific attitude to human health across cultural and ethnic groups becomes crucial as it influences one’s behavior and lifestyle related to health, and therefore has an impact on healthcare delivery, effectiveness of treatment and prevention, and health promoting activities (Brislin & Yoshida, 1994; Hammerschlag, 1989; Kline & Huff, 2008; Pasick, D’Onofrio, & Otero-Sabogal, 1996).

In upcoming chapters, we will develop this spectrum by looking closely at the principles of two major approaches to medicine, the modern-western and traditional-eastern medical systems. We will uncover the current trends that are bringing these two paradigms closer in order to suggest a paradigm that will serve as a grounding theory for the practical part of this research.
The modern approach to human health that is based on scientific findings and technological development is often referred to as biomedicine or Western medicine. The latter term is often used in comparison to traditional healing systems, for example in China, India or other eastern countries (Baronov, 2008; Chen et al., 2015; He et al., 2014; Qu, Liu, Zhang, & Liu, 2014; Sharma, 2012; Tu, Li, Liu, & Liu, 2011; W. Wang et al., 2010).

Qu et al. (2014) describe several principles of western medicine. Primarily, it is applied in strict accordance with experiments and measurement verifications, focuses on the concept of reductionism at a microscopic level, and emphasizes microscopic substances, such as molecules and cells. Considering western medicine, doctors (subjects) analyse problems of patients (objects) by using standard and routine methods, modern instruments, and standardized indices. Western medicine also follows a paradigm of random control experiments. In addition, Kline and Huff (2008) briefly characterize common knowledge of western medicine by the germ theory, diseases of lifestyle, medications, radiation, surgery, and other approaches to preventing and/or diagnosing and treating health problems in the general population.

These modern methods and approaches have resulted in improved public health, better nutrition, and better treatments for common diseases that have resulted in greater life expectancy. As populations age, their use of medical services increases, and the diseases they develop become more difficult and expensive to treat (Weil in Koop et al., 2002). Major health care problems such as chronic, degenerative illness, by nature more stubborn and more costly to manage and accompanied by patient dissatisfaction, inequity of access to care, and spiraling costs, no longer seem amenable to traditional biomedical solutions (Kleinman et al., 2006).

2 AIMS, RESEARCH QUESTION
The main aim of the presented study is to keep a broader perspective on the term health, examining it through the lens of Kinanthropology. The next aim is to analyse health approaching it from the positive perspective of human flourishing.

The main research question states: “What can one do to feel better? Could the answer be to “Live healthier”?”

3 METHODS
From the point of view of methodology of investigation of these phenomena, methods of analysis, synthesis, induction and deduction were chosen and applied to the method of anchored theory in the sense of studying the concept as the main category, as well as causal and operational thinking.

4 SOLUTION TO THE PROBLEM AND A PREDICTION REGARDING THE BEHAVIOUR OF VARIABLES

4.1 Traditional approach to the health and Western-Eastern synergies and opportunities
On the opposite side of the spectrum of health lies traditional medicine, i.e. the ways of maintaining health and treating disease used by previous generations and by indigenous and other non-Western cultures. Traditional medicine, which involves natural and simple methods of healing, has been the only available
medicine in many societies for decades and even centuries. These therapies have been broadly questioned as modern medicine and scientific examination proved them to be ineffective in treating viral diseases or acute injuries (Weil in Koop et al., 2002).

In contrast to the modern approach, the traditional societies can see other causes of illness than just disease including, for example, mixing hot and cold foods, losing soul, destiny, punishment or a call for re-balancing and re-evaluating one’s lifestyle. This is very distinct from western thinking (Skolnik, 2007). Basch (1989) summarizes that modern society believes in a probabilistic universe where nothing is known with absolute certainty, and thus we are committed to abide by the results of “objective” statistical tests. In contrast, traditional cultures and individuals are unable or unwilling to agree that the world is governed by the laws of probability and are restricted to the folk explanations involving purposeful intent. From his perspective, it is entirely logical to seek out the source of harm, whether it is enemies, gods, or spirits.

Closer to the centre of our graph lie the two main examples of traditional medicine, Ayurveda and traditional Chinese healing. These are specific medical systems, distinguished from Western medicine in terms of theories, clinics, and basic research. For example, traditional Chinese medicine focuses on the macroscopic homeostasis of the body and explains “what” life is, why certain illness happens, and what the patient did. This system applies the theory of Yin-Yang and the Five Elements, and considers a human as a combination of “xing” (form) and “shen” (spirit). In addition, “sizhen” (four techniques of diagnosis, i.e., inspection, auscultation-olfaction, inquiry, and palpation) and “bagang” (eight guiding principles, i.e., yin and yang, cold and heat, exterior and interior, deficiency and excess) are applied in traditional Chinese medicine (Qu et al., 2014). By comparison, Western medicine also discusses “why” a specific process happens and how it happened, yet it explores the microscopic details of life and disease processes and uses antibiotics, roentgen and other modern technological devices and findings (Basch, 1989).

When we think of traditional medicine, “exotic” Eastern medical systems, the healing procedures of Native Americans and Central American shamans usually comes to mind. At the same time, European modern medicine stands on traditional roots. Aristotle, in the 5th century B.C., aimed to offer an explanation for health and illness in his writings and to define a model of good health in which one seeks for “nothing in excess (Stănciulescu, Diaconescu, & Diaconescu, 2015).” Hippocrates, in ancient Greece, considered health to be an internal equilibrium of the four bodily humours: blood, phlegm, black bile, and yellow bile and the disturbance of that internal equilibrium yielded disease. In this theory, factors in the environment and an individual’s ways of responding to them profoundly affect health, because the balance between man and his environment determines the balance of his inner equilibrium (Breslow, 2006). Another example is Kalokagathia, the ancient ideal of “the beautiful and the good”, the healthy balance of beautiful soul, beautiful body and virtuous life. Some authors explain it as a harmony between an individual and the world around (Šíp, 2008).
ANALYSE AND DISCUSSION

These examples illustrate how in many traditional societies the overall theme of a healthy life is not to challenge nature, but to harmonize with it. In this society, people do not struggle for personal achievement; instead they function within prescribed roles as members of an integrated society (Basch, 1989). This approach was disrupted in Europe during the Middle Ages when Descartes and others, who defined the scientific revolution, proposed the concept of a duality of mind and body that resulted in a fragmented approach to interpreting human functioning that has been profound in modern medicine (Myers & Sweeney, 2008).

Various traditional approaches to health that exist today regard human beings as more than physical bodies, taking account of their mind and emotions, their spirit, and the communities in which they live (Koop et al., 2002). Traditional healing systems usually contain some philosophical system that broadens the scope of human health beyond the physical domain, towards mental as well as spiritual and social matters. Beyond the philosophical background, other common traits of traditional healing systems include: an individualized approach to patients and care (Banerjee, Debnath, & Debnath, 2015; Gupta, 2015; Liu, 2009); the importance of the state of balance (Breslow, 2006; Gokani, 2014; Jette, Vertinsky, & Ng, 2014; Limb & Hodge, 2008); and empowerment for individual lifestyle change (Herriott, 1994; Jette et al., 2014; Prajapati & Sharma, 2014). In modern terminology we could say they address topics like stress reduction, trust, social networks, a sense of empowerment, and resilience which are also associated with the maintenance and enhancement of human health (Ewert & Voight, 2012). Therefore, traditional medicine and its approach seems to be closer to the WHO definition of health than many biomedical treatments that cure only the physical body and disease.

As previous lines suggest both modern and traditional medical systems exhibit distinct advantages and can be applied to solve problems using their own features and strong points. On this note, Hammerschlag (1989,) points out that:

“What we see as science, the traditional societies can see as magic. What we see as magic, they see as science. I don’t find this a hopeless contradiction. If we can appreciate each other's views, we can see the whole picture more clearly. To heal ourselves or to help heal others, we need to reconnect magic and science, our right and left brains (p. 14).”

The current scientific attention given to eastern healing practices such as meditation, mindfulness practices and yoga, can be a proof of that statement. The supposedly distinct medical systems have a lot in common and can be complementary to each other in many aspects. For example, Wang (2013) suggests that the macroscopic and holistic approach of the East potentially fares well at aging and chronic and complex conditions such as obesity, the most crucial critiques of modern western medicine, together with the financial struggle with costly treatments and its insufficiency in treating lifestyle diseases (Niemi & Ståhle, 2016; Zis, Jacobs, & Shapiro, 1996). Current patients in search of better health find something in yoga class or aromatherapy.
sessions that a regular physician cannot, or does not, deliver.

The mixed and non-standardized cluster of traditional methods still calls for scientific probation, as the body of scientific knowledge continues to grow and we can explain more aspects and factors of human health. To do this, we turn to alternative medicine, which doesn’t aim to replace modern medicine, but to be recognized as its valuable complement.

The usual understanding of alternative medicine is “all modalities of treatment not currently taught in schools of conventional medicine.” These include the formal traditional Chinese and Ayurveda systems described above, as well as homeopathy, specific interventions like hypnotherapy and other mind-body techniques, botanical medicine, nutritional medicine (encompassing the use of dietary supplements), various forms of ethno medicine, systems of body work and manipulation, and forms of energy medicine (Koop et al., 2002). These treatments have become increasingly popular in recent decades, in both developing countries and the wealthier westernized neighbourhoods of Europe and North America cities (Basch, 1989; Tu et al., 2011). In the United States, surveys show consistently that between 30 and 40 percent of people are going to alternative providers. These visits outnumber visits to primary care physicians, and the money spent on them exceeds the money spent on primary care (Koop et al., 2002).

Smith and Kelly (2006) also comment on this recent trend, where Westerners seek solace in Eastern philosophies and therapies, such as shiatsu and onzen (hot springs) in Japan, Chinese acupuncture, reflexology, tui-na and tai chi in China, Ayurveda practices in India, and traditional Thai massage in Thailand. Such alternative health treatments are available in Western societies, but tourists are often keen to visit their place of origin and travel for health and wellness. Stănciulescu (2015) points out that these procedures are often done mechanically and without understanding of their meaning in the context of the complex healing system. A random treatment takes the client away from the source of wisdom and healing, away from the traditional idea that he or she is solely responsible for the achievement of a state of well-being by controlling the stress, and prevents a real connection with others and their authentic experiences. It becomes a feel-good practice delivered by a professional, which is ultimately an example of a “westernized” approach to the eastern practices.

The trend outlined above illustrates a paradigm shift in medicine away from disease and illness and toward an emphasis on wellness and health (Randall, 1996). In other words, we are moving closer to the centre of our illustrated spectrum of medical approaches.

In the 21st century, clinical medicine is moving towards a model of integrative and individualized health care. This development is based on the research findings of the human genome project, as well as a new health care model that is biological-psychological-social-environment-spiritual. It reflects the idea of patient-centred care and in many aspects corresponds with the traditional healing systems (Liu, 2009). By emphasizing prevention and lifestyle, and attending to all the factors that influence health, integrative medicine can help patients reduce their risk of disease, especially preventable disease that now causes so
much premature death and disability and accounts for such a high percentage of healthcare costs (Koop et al., 2002; Tu et al., 2011; S.-C. Wang, 2013). Unlike the traditional biomedical model, which tends to reduce patients to a disease entity and focuses on isolating and eliminating the disease, the patient-centred approach seeks to optimize functioning and wellbeing. In order to successfully achieve this goal, clinicians must include qualitative assessment methods in their diagnostic procedures and, similarly, must consider the impact of treatment on the patient as a whole being (Jamner & Stokols, 2000). This approach empowers patients by charging them with responsibility for the maintenance of health through wise lifestyle choices, and encourages them to enter into partnerships with physicians rather than into dependent roles (Koop et al., 2002).

4.2 Conceptual context of wellness

Although some authors do not distinguish between health and wellness (Thompson & Rew, 2015), others differentiate between the terms, advocating that health is a broader, more comprehensive concept (Bezner, 2015; Corbin & Pangrazi, 2001). As Myers (1992) concludes, even though the terms are often used interchangeably in research, education and practice, wellness is not synonymous with health.

Where health consists of social, spiritual, emotional and physical components, wellness is a positive state of being where these components are all functioning optimally with balance and harmony. Balance is reached when the energy forces of the body flow freely in equilibrium (Dunn, 1959; Myers, 1992; Travis & Ryan, 2004). The dynamic notion of wellness sees it as a process of personal growth and adopting behaviours in multiple dimensions that improve functioning, rather than as an outcome (Dunn, 1959; Jonas, 2005; Travis & Callander, 1990). Where health is a state of being, wellness is the process of being or becoming that moves one along a path toward realizing their full potential (Dunn, 1961; Jonas, 2005). Being “well” means taking a conscious, integrated approach to self-improvement and functioning improvement to fully engage in life. Rather than wait for a disease state to become apparent and rely on a clinician to treat the disease, wellness is aimed toward self-reliance in achieving one’s full potential within the environment or health state within which he or she is living, rather than being a passive consumer of medical treatment (Ardell, 1977; Dunn, 1959; Jonikas et al., 2013; Kirkland, 2014; Naci & Ioannidis, 2015; Roscoe, 2009).

The wellness approach to medical care was first articulated by Dunn (1959) as a critique of the dominant biomedical model of patient care that fragments the mind, body and spirit of an individual into separate components to be serviced by distinct professional disciplines. The wellness approach is a paradigm shift away from the biomedical model that considers the mind, body and spirit to be integrated entities, emphasizing strengths and empowerment over disease and functional limitations (Breen, Green, Roarty, & Saggers, 2008; Dunn, 1959; Larson, 1996; Strout & Howard, 2015). The wellness paradigm is consistent with the World Health Organization’s definition of health and here begins the modern history of wellness:
“It was in the context of demographic changes then being brought about by the conquest of infectious disease that [Halbert Dunn] found the Constitution of the World Health Organization, which had been promulgated a decade earlier, particularly helpful. For him the WHO constitution propagated a notion of “positive health” that was in principle identical with wellness. At its root was a holistic concept of health.” (J. W. Miller, 2005a, p. 88)

Halbert Dunn (1961) initially introduced positive health as wellness in 1959, describing wellness as “not a relatively flat, uninteresting area of ‘unsickness’ but rather a fascinating and ever-changing panorama of life itself.” For him, wellness embodies the preventive aspects of what we are fighting in terms of disease and disability and social breakdown, although the enhanced physical state of health is not generally seen as its primarily objective.

Wellness and a wellness approach are positive and affirming, to build upon achievements and strengths (G. Miller & Foster, 2010). This concept is aligned with Dunn’s original definition that described wellness as “an integrated method of functioning which is oriented toward maximizing the potential of which the individual is capable.” (Dunn, 1959) This person-centred approach respects an individual’s values, autonomy, motives and preferences (McMahon, O’Shea, Tapsell, & Williams, 2014; Reeve, 2006; Swarbrick, 2006) and can be seen as an approach to “whole-person” or holistic care within the medical system. As such it is also more receptive to the spiritual aspects of human life, that are for some authors at the core of wellness (Briggs et al., 2011; Grant, 2007; Ihara & Vakalahi, 2011; Limb & Hodge, 2008). This represents a shift away from orthodox religion towards a kind of transcendent spirituality, where one aims to develop beyond the self and the ego. (Smith & Kelly, 2006) Aligned with this perspective, Myers et. al (2000) defined wellness as “a way of life oriented toward optimal health and well-being, in which body, mind, and spirit are integrated by the individual to live life more fully within the human and natural community. Ideally, it is the optimum state of health and well-being that each individual is capable of achieving.” (p. 252)

More recently, the WHO defined wellness as the optimal state of health of individuals and groups realized by achieving one’s full potential and fulfilment of social roles (World Health Organisation, 2006). This articulates with the broader perspective of wellness, that goes beyond individual health to the health of the community and society that was essential in the former concepts of wellness (Dunn, 1959; Travis & Callander, 1990). Stănciulescu et al. (2015) note that the wellness paradigm is not modern in its meaning, but mostly in its terminology and operationalization. This western wellness philosophy draws heavily upon Eastern and Native American understandings of health and happiness in promoting balance and harmony between the mind, body and spirit, and community and unity with all.

**ANALYSE AND DISCUSSION**

However, the modern conceptual models of wellness reflect an individualistic orientation and are often operationalized with secular interventions that target an isolated problem (Limb & Hodge, 2008).
The neo-liberal philosophical foundation upon which the wellness paradigm is based places health within the control and responsibility of the individual, can be perceived as moralizing the ability to achieve health, and places the failure to achieve health as a weakness of the individual (Basas, 2014). This view of health and wellness disconnects individuals from communities; therefore, some authors point out that this individual achievement perspective may not be applicable to cultural groups who understand that the wellness of the individual is dependent upon the wellness of the family and community, or that emphasize the wellness of the family or community over the wellness of the individual (Alan & Shapiro, 2006; Boksa, Joob, & Kirmayer, 2015; Ihara & Vakalahi, 2011; Kathy Langlois, 2008; Saint Arnault, 2009; Wilson & Hopkirk, 2014).

Even within individualistic cultures, individuals may still place the needs of family or community members above their own wellness, thus necessitating wellness initiatives that target the group in order to address the wellness needs of the individual (Underwood, Berry, & Haley, 2009). Halbert Dunn recognized that the individual cannot have wellness without wellness for the family and social group. His model accounted for the integration of individual, family, community, social and environmental wellness (Dunn, 1961). The similar perspective was followed by Travis, who in his work emphasized the need for connection as one of the aspects of individual, family and planetary wellness (Travis & Ryan, 2004). More recently, the Ecological model of wellness relates the wellness of the individual to that of the family, community and society (Prilleltensky, 2008). Individuals, families, communities, and society are placed in hierarchical, concentric circles, with society at the base and individuals at the top, indicating that the wellness of the individual is dependent upon the wellness of the family, community and society.

Being “well” it means taking a conscious, integrated approach to self-improvement that improves functioning to fully engage in life, rather than wait for a disease state to become apparent and rely on a clinician to treat the disease. Instead, wellness is aimed toward self-reliance in achieving one’s full potential within the environment or health state within which he or she is living, rather than being a passive consumer of medical treatment (National Wellness Institute; Ardell, 1977; Dunn, 1958; Roscoe, 2009; Kirkland, 2014; Copeland and Jonikas, 2015). Individuals are encouraged to take responsibility for their own self-care and to embrace active lifestyle changes that promote health in the physical, social, mental, and spiritual realms (Miller, 2005). The implication of the lifestyle definition of wellness is that experiencing wellness is not dependent on being free from symptoms, illness or disease as implied by the “wellness as a state beyond absence of disease” definition. Individuals with chronic diseases or disabilities may also live a wellness lifestyle and strive toward a self-determined experience of optimal physical, mental, and social functioning (Gatchel & Kishino, 2012). Travis and Ryan (2004) illustrate this on a continuum, where the medical treatment approach takes care of persons with signs, symptoms or disabilities caused by an illness, whereas the wellness paradigm overlaps the whole spectrum and also takes care of persons who are physically healthy. It promotes a
better, joyful and satisfying life from the very point in which they are now, despite the actual state of their physical health.

This notion of wellness has its origins in the early definitions of the word as an antonym for illness; if one is not ill, he is well (Dunn, 1961; J. W. Miller, 2005b). Illness and wellness are subjective experiences of health, where disease is an objective biological state (Basch, 1989; Gatchel & Kishino, 2012). Disease is incompatible with health as a complete state of well-being (according to the WHO definition), but it is compatible with wellness. A person suffering from a specific disease can lead a productive and satisfying life full of wellness despite disease or disability status (Bezner, 2015; Naci & Ioannidis, 2015; Roscoe, 2009; Travis & Ryan, 2004). The wellness approach allows people to find meaning in illness, drawing attention to internal imbalance and opportunities to regain balance (Briggs et al., 2011; Epstein, Senzon, & Lemberger, 2009). Moreover, freedom from disease need not be a required outcome of wellness efforts; in fact, it may not even be a reasonably attainable goal given that disease, disability, injury and death are all part of the human experience. With Thomas Jefferson we can conclude that “Without health, there is no happiness” (cited in Frank, 2011).

5 CONCLUSIONS

Wellness emerged as a new term that would broaden the focus from physical health and would integrate the body, mind and spirit of an individual within the social context in which they exist, while empowering them to take responsibility for the state of their health at any given moment. Unfortunately, the former understanding of health as absence of disease has remained, not only within the minds of the public, but also in scientific approaches to health, and most especially in the medical field.

Though wellness in its subjective and situational nature is hard to measure and describe scientifically, it offers a conceptual basis for practical applications when one is creating strategies for health promotion across all dimensions. Little is known about what affects wellness, as opposed to what causes disease. Lifestyle choices and behaviours (e.g. physical activity, meditation, and nutrition), technology, social participation and engagement, genetics, work, school, neighbourhood, and other environmental exposures, may all shape wellness (Naci & Ioannidis, 2015); however, when promoting health in all four dimensions, we cannot focus only on the
behavioural part, by promoting solely the healthy lifestyle behaviours. It is important to consider also an individual’s cognitive and affective characteristics and the given context of his life, community and broader society, with its specific norms, beliefs and approaches. Melnyk (2015) argues that the term wellness should be superior to healthy lifestyle, since the latter refers to a how individual wellness manifests in an individual’s life.

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CONTACT

Mgr. Jana Stará
Faculty of Sports Studies
Masaryk University, Brno
e-mail: stara.jana@gmail.com
PHYTOCHEMICAL POTENTIAL OF BLUEBERRIES AND OPINIONS ON THEIR IMPORTANCE FOR BALANCE IMPROVING AND HEALTH SUPPORT IN OLDER AGE

Hana KALOVÁ, Brigita JANEČKOVÁ, Petr PETR, Miroslav VERNER, Jarmila BOČKOVÁ, Alena SEBEROVÁ, Jan REBAN

Abstract
The presented study is focused on contemporary knowledge and concepts concerning health benefits of the blueberries on the human health. They compare their effects on the brain and nervous system and on the mnestic, cognitive and sensory functions (with a special regard to the sight), locomotor functions (with a special regard to the balance and gait), antisclerotic, cardioprotective and angioprotective effects, potential anti-cancer effects and general protective effects (with a special regard to the ageing process). Contents of micronutrients present in the blueberries for the health are detailed. Differences in the importance of micronutrients and further effective substance are explained based on the RDA (Recommended Daily Allowance) value. Basic and well attainable literature is quoted, which offers detailed outlines of effective phytochemical substances in the bilberry and of the botanic classification and variations.

Keywords
European blueberries, Vaccinium myrtillus, importance for human health, prevention, mental functions, physical functions, ageing

1 INTRODUCTION, THEORETICAL BACKGROUND

Berry soft fruits in general, especially blueberries (blueberry cranberry, Vaccinium myrtillus), are a potent source of polyphenols, micronutrients and fiber (Beattie et al., 2005; Giongo et al., 2006; . The classification, nomenclature and terminology of individual cranberry / Vaccinium cultivars are detailed by Gionga et al. (2006). In their extensive report, they refer to the properties of 58 genotypes in typical horticultural features and 38 genotypes in terms of polyphenols. While the micronutrients - especially vitamins and fibre - have a significant role in the nutritional value of their food intake, polyphenols in berries of domestic origin are somewhat overshadowed by the ongoing interest in the so-called French paradox, namely the positive influence of red wine on human health et al., 2008). In general, dark coloured fruits contain polyphenols, which they owe both their colour (blue, purple, red) and the positive health effects of phytochemical ingestion when ingested into the organism (Symposium of Summaries of the Communication, 2002, Beattie et al., 2005; Giongo et al., 2006; Ronis et al., 2006; Quideau et al., 2011).
Polyphenols have the character of phytoalexins in plants - they are substances that prevent plants from being harmful to pests and pests. Therefore, rich vines / grapes of vines, infested with nocturnal mold (Botrytis cinerea) (Delmas et al., 2006), are polyphenols. Micronutrients are those food components that cause deficits when they are absent in the diet. It is therefore possible to determine the recommended daily allowance - the recommended daily allowance (RDA). As for micronutrients, it is necessary to emphasize that blueberries are such a significant source of vitamin C that literally a "handful" of blueberries will provide RDA in an adult human (Beattie et al., 2005). The authors, in a concise brief form, summarize current knowledge and ideas about the beneficial effects of blueberries on human health. They deal with their effects on the brain and the nervous system, as well as on the functions of mnestic, cognitive, sensory - with special regard to sight, movement - with special regard to balance and walking, antisklerotic, cardio- and angioprotective effects, potential antiinflammatory effects and overall protective effects - with particular regard to the aging process - aging. The content of micronutrients in blueberries is discussed in detail. The difference between the health significance of micronutrients and other active substances is explained and explained on the basis of the indicator - RDA (recommended daily allowance). In detail, reference is made to basic and well-available literature providing a detailed overview of both phytochemicals in blueberries and their botanical classification and variation. The history of domestication of blueberries is briefly reminded. Reference is made to the interconnection of applied research in agriculture and health care to maximize the beneficial effects of the diet containing blueberries on human health.

Other micronutrients in blueberries are B vitamins and folic acid. Blueberries are therefore a good, affordable and important nutritional factor that can lower homocysteine levels, thus helping to reduce the risk of neuronal disorders in neonates, the incidence of ischemic heart disease and possibly tumors (Beattie et al., 2005; Basu et al. 2010; Quideau et al., 2010). Unlike micronutrients, polyphenols are a group of substances that have a beneficial effect on human health but which cannot be determined by RDA and whose low intake does not produce symptoms of deficiency. Polyphenols, present in blueberries and other berries such as anthocyanins, flavonoids and resveratrol, can thus be likened to drugs. From the pharmacological point of view, it is "xenobiotics" and their supply to the organism is referred to as phytochemical intake. Generally, the beneficial effect of polyphenols is due to their ability to deliver hydrogen from their hydroxyl groups to free radicals, thereby reducing their high oxidation capacity (Balík et al., 2008).

One of the most recent and perhaps most interesting findings is the fact that specific binding sites for polyphenols, including resveratrol, exist in the mammalian brain (Han et al., 2006). This is apparently the basis for the beneficial effect of polyphenols on the brain and nervous system. Even in humans, such beneficial effects are observed, particularly in relation to neurological disorders that occur more often with increasing age. These are, for example, macular degeneration, stroke and dementia (Han et al., 2006). It is particularly encouraging to note that dietary
supplementation with blueberries has protective effects on ischemic brain damage (Wang et al., 2005). The positive effect of bilberry on neurological function, especially on dysfunction, is reported by Beattie et al. (2005). They document that the beneficial effects of blueberries on age-related learning disabilities, memory functions, motoric ability and neuronal excitement are induced (Beattie et al., 2005). An overview of the beneficial effects of blueberries in the sense of slowing brain aging and brain function is provided by Greenwell in the Life Extension Magazine article of March 2000 (Greenwell, 2000). Recent advances in the demonstration of the beneficial effects of blueberries, which are able to prevent the decline of cognitive functions that occurs with increasing age, are documented by Willis et al. (2009). A good-looking nickname for blueberries is "true eye-openers" in Anglo-Saxon literature.

Blueberries are still referred to as arsenic publicly available sources as a means of positively influencing eyes and visus (Herbs, 2012). The beneficial effect of blueberries on eyesight is explained both by favourable effects on rodopsin (Greenwell, 2000) and by optimization / reduction of glycemia, especially in diabetics. Night vision and its possible positive influence on blueberries is currently being studied by the research group dr. Wilhelmina Kalt at the Atlantic Food and Horticultural Research Centre, Kentville, Nova Scotia, Canada (Kalt, 2010).

2 OBJECTIVES

In view of demographic trends, the main objective of the study is to analyse the potency and importance of blueberries in the context of their generally protective effect on the human organism that prevents aging (anti-ageing effect).

The next objective is to analyse the effects of blueberry consumption on balance promotion in seniors and reduce the risk of falls. Blueberries have a proven or reasonably anticipated beneficial effect on the brain and the nervous system in humans, on the functions of mnemonic and cognitive functions. Senses, especially sight, are also beneficial. They have a beneficial effect on maintaining balance and on the ability of rhythmic regular walking. Tinetti has developed, validated, and in practice tested a diagnostic tool to quantify the risk of falls due to impaired ability to maintain balance (Tinetti, 2003). This tool is available and used in the Czech version (Topinková, 2005). The same tool is used by the authors of this statement.

3 METHODS

The method of review includes both preventive and possible curative use of traditional plant natural product in practice. There is a background material that illuminates the current interest in blueberries in the world of electronic, publicly available information and resources. A detailed analysis and syntheses, inductive and deductive aspects of the available experimental material in both the animal and human experiments provides an approximate effective daily dose of blueberries in humans (120 ml native berries - Vaccinium myrtillus, per person per day). These include collagen production, hormone synthesis, immune system activity, iron absorption, thrombocyte aggregation / aggregation, thrombus formation and formation, and preventive
effects against ischemic heart disease, osteoporosis, and tumour diseases.

4 ANALYSES AND SYNTHESSES OF RESULTS

Improving the balance associated with blueberries

Improving balance is probably due not only to their direct effect on nerve tissue but also to their effect improving spatial imagination and memory (Bauer, 2011). For the direct effect of blueberries on the ability to maintain balance with increasing age, a subtle and convincing experimental model was created. A specially developed rat, the so-called Fisher rat, is an excellent model for studying the effect of the age on the balance. Rats of this type are at the age of 19 months old that corresponds to the human age of 60 to 65 years. If we serve blueberries at a dose that would give 120 ml of blueberries in a raw state per day, we find that after 2 months - at the age of 21 months, which corresponds to the age of 70-75 years - practically did not get older ability to maintain balance. The group of experimental animals that were treated with blueberries will maintain the balance twice more than the group without this intervention. The results are surprising and encouraging the phytochemicals (polyphenols) in blueberries can improve both neuronal function and overall brain activity. Their positive effect is documented in particular on memory (Beattie et al., 2005; Bauer, 2011).

Blueberries and cardiovascular system

The beneficial effects of polyphenols, phytochemicals from soft berries, on the cardiovascular system are best known for grapes and wines (Balík et al., 2008). Blueberries, however, do not fall behind their better known competitors. In both research and epidemiological research projects, the beneficial influence of bilberry on cardiovascular health is documented (Basu et al., 2010). Detailed reviews, conceived as a nutritional epidemiological survey, lead to encouraging findings on the beneficial effects of phytochemicals on the human cardiovascular system. Data from the Interheart study summarizes dietary habits and eating patterns from 52 countries around the world. They show an indirect proportion between the content of fruit and vegetables in the diet and the occurrence of acute myocardial infarction (Basu et al., 2010). Here is a large field of activity, especially for the field of nutrition therapist. Even in the United States, where the public campaign to increase fruit and vegetable consumption has been in place since 2001, the situation is not favourable. For example, in a group of 2 757 overweight diabetics, a significant risk group for cardiovascular disease, less than 50% of the respondents consume the minimum recommended daily dose of fruit and vegetables. Comparing the situation in the US and France, it appears that adult French have a significantly higher consumption of fruit and vegetables than adult Americans.

An indirect proportion of blueberry intake and the incidence of calculated risk for cardiovascular disease, expressed as CVD-related deaths, are demonstrated. People with the highest intake of blueberries consumed more than 408 grams of berry crops a day, people with the lowest intake of less than 133 grams a day. Laboratory markers should highlight low levels of haptoglobin in people with high consumption of blueberries. From the point of view of gender issues, we mention a large
non-interventional epidemiological study of 34,489 post-menopausal women in the Iowa Women Health Study (USA) and a women health care study in the Women Health Study, which included 38,176 women. It can be concluded that eating blueberries at least once a week leads to a significant decrease in Relative Risk of cardiovascular death (Basu et al., 2010). In addition to these epidemiological surveys and surveys, the results of the intervention studies are also available. For the year 2010, 20 such intervention studies have been documented, dealing with the influence of berries on cardiovascular health. Blueberries, domesticated blueberries, black currants, cranberries, raspberries and strawberries were studied (Basu et al., 2010). Significant results of these studies are the finding that blueberries (and other fruits) reduce oxidative stress, increase serum antioxidant capacity, reduce LDL (low density lipoprotein), and reduce lipid peroxidation. In particular, the influence of blueberries on postprandial oxidative stress is emphasized. Similar or identical conclusions about the influence of blueberries on oxidative stress also occur in Schmidt et al. (2005), Lotito and Frei (2006), Quideau et al. (2011) and Xie et al. (2011). The importance of this intervention in oxidative stress and the beneficial effect on lipid metabolism is seen especially in the antisklerotic effect of blueberries, which help to prevent the occurrence of atherosclerosis (Beattie et al., 2005, Schmidt et al., 2005; 2011; Xie et al., 2011).

Positive effect of blueberries on the treatment of inflammation

In addition to oxidative stress and lipid metabolism, markers of inflammation are also highlighted as a risk factor or directly the mechanism of atherosclerotic changes. In 2010, Annette Karlsen collected extensive documentation of the beneficial effects of polyphenols in blueberry juice on the serum or plasma reduction of inflammatory biomarkers present. Reduction of CRP, IL-6, IL-15, MIG and TNF-alpha (Karlsen et al., 2010) is demonstrated. With particular regard to the ant proliferative activity of polyphenols from blueberries, Barbara M. Schmidt (Schmidt et al., 2005) deals with this problem as well.

Significant and quantifiable beneficial effects of blueberries on human metabolism

The antioxidant effects of blueberries are facilitated by the fact that polyphenols contained therein provide free radicals in the human body with hydrogen from their hydroxyl groups (Balík et al., 2008). They reduce LDL oxidation and lipid peroxidation (Basu et al., 2010). In the experiment on the animal (home pig), Dr. Wilhelmina Kalt's direct effect of eating blueberries to lower cholesterol levels in interfering individuals. In a study at the Atlantic Veterinary College in Charlottetown, Prince Edward Island, Canada, they gave pigs a diet rich in sugars and induced hypercholesterolemia. This has been avoided if the addition of blueberries has been added to the daily dietary supplement (Kalt, 2010). Polyphenols from different berries, especially blueberries, lead to a direct reduction of glycaemia in the intervened individuals (Greenwell, 2000). This finding is also consistent with the ancient folk practice recommending blueberries in diabetics. The US Department of Agriculture has ranked research on the influence of polyphenols on insulin metabolism and on glycaemic activity as the
first priority in the AR Agricultural Research Service (ARS-US Dept. of Agriculture, 2010) interdisciplinary research plan. Particular attention is paid to the discovery and surprising findings of the work group of Chena, et al from 2010 that polyphenols improve bone metabolism and bone growth. In the in vitro model, in tissue cultures, they show an increase in osteoblast activity and higher bone marrow additions while reducing osteoclast activity (Chen et al., 2010).

The particular positive significance of this phenomenon lies in the fact that it thus intensifies and accelerates the degradation of carcinogens in the body (phase I), thus allowing and amplifying their excretion (Phase II). Blueberries and anti-tumour effects Julie Beattie of Dundee University highlights the possible beneficial antitumor effects of blueberries in her extensive work. Especially in cancer-type tumours, direct effects of bilberry and other soft berry extracts on carcinoma cells are demonstrated in in vitro experiments. Meanwhile, these in vitro accumulated results cannot be convincingly reproduced in an animal experiment (Beattie et al., 2005). Is also the finding that the effect of resveratrol is greatly prolonged over time, as explained by its relatively high plasma protein binding. Resveratrol does not have its own cytotoxic effect, but sensitizes tumour cells against cytotoxic agents. These findings will undoubtedly be the basis of consideration of new or innovative strategies of cytostatic therapy and chemotherapeutic protocols (Delmas et al., 2006). Undoubtedly, the antitumor potential also has the influence of blueberries on metabolism as described above.

5 DISCUSSION AND CONCLUSIONS

To avoid of the processes and manifestations of biological and psychological aging in the sense of achieving inhibition of function deficits is a great challenge for health and social work. The age carries with it the risks of social exclusion. Any intervention, which in general prevents the aging of the organism or its effects slows down, is therefore certainly sought and welcomed. In the following, we summarize the above-mentioned partial information in relation to age and aging. Blueberries are an important tool in these efforts due to the content of micronutrients and phytochemicals. Thanks to their antioxidant potential, they generally have a protective / protective effect on the tissues. This is particularly evident in the cardiovascular and nervous system. Improving the balance and thus preventing falls is an important contribution to safe aging. It is also linked to the fact that blueberries improve spatial imagination and spatial memory. Improving mnestic and cognitive functions is very desirable in old age. Memory that is prominent in old age suffers from micronutrients and blueberry phytochemicals being favourably influenced and strengthened. Blueberries are already a solid part of the armamentaria for prolonging life while preserving its quality - Life Extension (Willis et al., 2009, Greenwell, 2000, Kalt, 2010, Bauer, 2011). In 2005, the beneficial effect of blueberries on cellular immunity, in particular the increase of NK cells (Natural Killers) and T-lymphocytes in general (Beattie et al., 2005), was described. The influence of heat treatment and cooking The phytochemical properties of blueberries are a source of phytochemicals as a source of phytochemicals, especially because they are
used not only in the raw state as refreshing fruits and possibly as a compote or juice, but also in the form of ready meals such as typical South Bohemian blueberries cakes and blueberry dumplings. It is gratifying and delighting to find that heat cooking, but also freezing or cooling, does not destroy the phyto-chemical potential of blueberries. Cooling, freezing and heating to 98-100 °C does not lead to a significant reduction in the content of polyphenols in beans (Beattie et al., 2005; Schmidt et al., 2005). The most heat treatment is heated to 92-98 °C for 0.5 to 2 minutes, in the form of so-called optimized thermal hydro thermodynamic treatment (Satanika, 2011).

The heat treatment in which blueberries are exposed to temperatures above 190 °C and which last longer than 18 minutes results in a reduction in polyphenols, in particular resveratrol, of 17 to 46% (Lyons et al., 2003). Blueberries as a subject of applied interdisciplinary research Along with the development of the concept of "functional food" (Petr, Kalová, 2006) there is a growing focus on soft berry berries in general and on blueberries in particular (ARS-US Department of Agriculture, 2010). It is emphasized that it is a fruit of local origin, in domestic / local traditional cuisine (Beattie et al., 2005). The US Department of Agriculture has ranked the research of polyphenols in these fruits first and second in the priorities of the Nutrition - Human Nutrition research (ARS-US Department of Agriculture, 2010). In the first place, polyphenols are investigated in relation to diabetes, especially their effect on insulin and glucose metabolism in general. The second place is the research of blueberries and their influence on aging and cognitive function. Applied research in these contexts has become so appealing that there are companies that are manufacturing placebo in the industry, having the appearance, colour and taste of blueberry powder.

CONCLUSIONS

The accumulated knowledge of the beneficial effects of blueberries on human health and evidence of this influence in many areas of the human bio-psycho-social dimension cannot be left to the level of scientific knowledge and applied research. Another logical and necessary step is to transform this knowledge in comprehensible and accessible form into information that will be the basis for boarders and caterers - for health education at all levels. Perhaps the first favourable step in this direction is the composition of a team of authors, in which medical experts (clinical pharmacologist, clinical biochemist, gerontologist / geriatric) meet with other health professions (a nurse focusing on patient education, university education, pharmacist assistant) together with experts from the sphere of self-government and marketing.

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7 CONTACTS

Author correspondent:
Doc. MUDr. Petr PETR, Ph.D
Hospital České Budějovice
Jihočeská univerzita, Zdravotně sociální fakulta, katedra klinických a preklinických oborů
Czech Republic
E-mail: petr@nemcb.cz

Authors:
Mgr. Hana KALOVÁ
Nemocnice České Budějovice, a. s.
Nadační fond EMA České Budějovice
e-mail: kalova@mencb.cz

Bc. Brigita JANEČKOVÁ
Nemocnice České Budějovice, a. s., pracoviště klinické farmakologie
e-mail: janeckova brigida@mencb.cz

MUDr. Miroslav VERNER
Nemocnice České Budějovice, a. s., centrální laboratoře
e-mail: verner@mencb.cz

Ing. Jarmila BOČKOVÁ
Jednota, s. d., České Budějovice

Mgr. Alena SEBEROVÁ
Městský úřad města Borovany

MUDr. Jan REBAN
DPS Hvízdal, České Budějovice
e-mail: jan.reban@gmail.com
TECHNIQUES OF “SILENCE” AND THEIR APPLICATION IN WELLNESS MASSAGES

Jana VÁŇOVÁ, Milada KREJČÍ

Abstract
The main goal of the study was to analyse a three weeks interventional program with techniques of “Inner Silence” from the point of view of health support and quality of life in adults. Partial goal of the study was to verify the interventional program “Inner Silence” from the perspective of utility in wellness services. Partial tasks of the study included an analysis of Czech and international literature sources, then setting diagnostic and interventional methods, probands selection, procedure realisation, results analysis and interpretation, and finally setting up a conclusion for practice in wellness. The following diagnostic methods were used: measuring with EEG biofeedback Brain feedback III Deymed, the Czech version of life quality questionnaire of the World Health Organization WHOQOL and a structured interview. Results of the study show that applications of techniques of “Silence” have a beneficial calming effect and induces the alpha rhythm state of brain waves. We came to a conclusion that a suitable use of “Silence” should be implemented as a part of a wellness procedure in wellness massages.

Keywords
Electroencephalography, philosophy, quality of life, meditation, relaxation, sleep, wellness.

1 INTRODUCTION

What comes to human mind hearing the world "Silence"? Is the image similar to a soundproof room? The phenomena "Silence" described in the presented study are expressing through good feelings, to feel well, good. It is our inner "Silence" where we go when we need to be alone with ourselves. To imagine inner "Silence" we can use thoughts that help us calm down. This paper presents only small fragments to the topic of "Silence" in relation to the human civilization.

Wellness as a lifestyle and part of quality of life
Wellness is commonly perceived as a synonym for a healthy lifestyle (Fialová, 2007). Our modern civilization is justly likened to ancient Greek culture, and we can therefore mention the Greek ideal of kalokagathia, which is a harmony between the physical, mental and spiritual aspects, an undeniable search for balance (Šíp, 2008). Wellness is a constant effort to improve the quality of life along with health promotion. Wellness is currently undergoing dynamic development. Because wellness services are not prescribed by a doctor, clients visiting wellness centres often spend a lot of money in order to improve and maintain
their health and well-being (Krejčí, Hošek, et al., 2016). In the area of wellness, health is conceived in a wider context. According to Krejčí, Hošek, et al. (2016), this fact is illustrated by the WHO definition of wellness: “Wellness is the optimal state of health of individuals and groups. There are two focal concerns: the realisation of the fullest potential of an individual physically, psychologically, socially, spiritually and economically, and the fulfilment of one’s role in the family, community, place of worship, workplace and other settings” (WHO 2000).

Every wellness specialist works with a combination of four components of bio-psycho-socio-spiritual well-being, which enables the full realization of an individual's potential. (Krejčí, Hošek, et al., 2016). The borderline between wellness and intoxicating and magical influences is also fragile. Ethical, existential and adaptation contexts are also interesting. Wellness is a complex conceptual construct and it gives rise to discrepancies in its interpretation. This fact shows us what a sensitive part of humanity it is. It is therefore always necessary to think about what wellness gives to each individually.

First time the term “Quality of life” was introduced in USA by the president Johnson in the post-war time in 1960. Later the term spread to Germany in the 1970. German politician Willy Brandt built his election program just on improving of the quality of life. The term was later also used in sociology, because the term quality of life “… is used to distinguish living conditions such as income, political establishment or the number of cars per household from the people's actual feelings about their life” (Hnilicová, 2003). In the 1970, it was found out that quality of life must include cognitive assessment, emotional experience and biological health. Over the past twenty years the “Quality of life” phenomena and its monitoring have been steeply rising. There is a wide range of definitions based on a set of subjective and objective parameters.

Quality of life is a studied phenomenon. To study of quality of life currently means searching for and identifying factors that contribute to a good and meaningful life and a sense of human happiness. Quality of life includes physical health, experience of life, independence, social relations, environment and spirituality. Physical health includes perception of pain, unpleasant feelings, energy, fatigue, sleep and rest. Experience of life shows positive feelings, memory, concentration, and self-confidence, perception of the body and appearance, and negative feelings. Independence includes mobility, the management of day-to-day tasks, the degree of dependence on treatment and work performance. Social relationships include personal relationships, social support and sexual activity. Environment creates a sense of personal safety, home environment, financial situation, health and social care, acquiring new information and skills, spending leisure time, hobbies, the environment and transportation. Spirituality determines how each individual understands his personal philosophy and seeks answers to the meaning of individual life (Dragomirecká and Bartoňková, 2006).

Quality of life is influenced by many factors. These factors include socio-economic status, health, environment, one's own approach to life and emotionality, which implies that quality of life, is both - objective and subjective. „Therefore, quality of life is not the sum of conditions and health
in the current definition by WHO, but it is rather indicative of the influence of health and conditions on the individual“ (Hnilicová, 2003). The ultimate goal is to enable individuals to experience the best versions of human life.

Quality of life is increasingly affecting medicine as it is closely related to health. Good health and therefore also quality of life also enables us to work better, which has positive economic consequences. „Quality of life is a highly subjective measure of happiness that is an important component of many financial decisions“. (Source: Quality of life [On line]). The highly beneficial impacts of quality of life on individuals, families, society and the economy stimulate many studies and much research.

**Introducing of the phenomena "Silence" as a philosophical background**

We perceive inner "Silence" by perceiving beauty, a walk in nature, another person, a massage, and everything else that calms our mind. The oldest texts on this planet are texts by people who have tried to pass on their insights. We know the oldest system of yoga, which helps people achieve a balance between people and their surroundings. It is a path that leads to a connection between the inner and outer world. (Krejčí, Hošek, et al., 2016). Philosophical and religious texts are used for the topic of "Silence".

The topic touches on a sensitive subject of humanity. According old eastern philosophy “Silence is the language of God“. This also touches on religion and types of faith. Each person has his own type of faith. People believe in a certain God, nature, science, human potential, etc. Faith is a private matter of every person.

Hinduism Vedanta is coming out of yoga and represents an ancient old Indian non-religious philosophical direction. The word Vedanta can be broken down into two words: Veda and Anta. The word Veda can be identified with sacred science. The second word, Anta, means an end. It describes the uniqueness of human birth. Man is unique in his own way. The ability to think, communicate and create gives him the opportunity to develop and achieve freedom. Vedanta describes the importance of Karma Yoga (right actions that are not motivated by desire), Upasana Yoga (discipline and unification of personality through the discipline of the body, words, senses, mind and meditation), and Jnana Yoga (the yoga of knowledge). Above all, jnana yoga embodies the logical analysis of exploration, which is very close to the Western man today. It offers the following questions: What should be searched for and found? Who is the one searching? Who are we and why are we here? These are age-old questions, the answer to which each person searches for himself. „The spirit is never born and never dies, and because it is not born, it can never die. It is eternal and unchangeable, and it does not die when the body dies“ (Paramárthananda, 2013). This quote fully reflects the ever-present idea that we have a potential that all individuals carry within ourselves, where it remains.

Buddhism is not associated with faith in God. It is based on the idea of no self (anatman). This brings a wider dimension of thinking that the idea of self, anatman, does not exist, and it has a spiritual and philosophical perspective (Leaf, 2014).

The still current ancient Greek philosophy is becoming a link between ancient history and the present age.
Especially Socrates philosophy was originated in Athens around the mid-5th century. His disciple Plato is the most famous bearer of this philosophy. In published theses, Plato considered the nature and origin of the world in relation to questions of mankind and human society. His works deal with the difference between true knowledge and mere belief, virtue, the possibility of education, a fair and lasting organization of society, and good as the ultimate goal of mankind and society. In his writings, Plato predominantly includes dialogues of his teacher Socrates, who used this to persuade Athenian scholars of how uncertain their supposed knowledge is. Plato also founded the Academy in Athens, which was a used as a model for European universities and scientific institutions.

Today's age is full of excitement and restlessness. In many households, the television is on in every room from morning to morning, making simultaneous audio and information Pollution. Telephones are constantly with, and most young people feel that they have to be constantly connected to at least one social network. Modern technology has removed what used to be natural distance barriers. People are literally attached to the "magical eye" of television and easily accessible internet, which also affects children who are not even two years of age. Attention of people is distracted by ever-present advertising, a lack of privacy, especially in the "open space", the monotone sound of air conditioning, etc. All this causes excessive stress, nervousness and a feeling of being overworked, while the rhythm of life continues to accelerate. People are increasingly looking for a way to remove them from the cycle of hurry, excitement and pressure to succeed. Some of them visit massages in wellness centres. The phenomena "Silence" should be applied during the work with clients.

### 2 OBJECTIVES AND HYPOTHESES

The main objective of the study was to analyse an interventional program with techniques of "Silence" from the point of view of health support and life quality in adults. The next objective was to introduce peace of mind as the basic need of every human being. The mentioned philosophical background helps to link from past to present and find a centre of one's own being, and at least partially objectify the reason for searching for "Silence".

Two hypotheses were analysed:

**Hypotheses H1**

After the intervention unit "Inner Silence", proband group A will exhibit a higher incidence of alpha points by at least 10 alpha points compared to proband group B.

**Hypotheses H2**

After the "Inner Silence" intervention unit, probands of group A will exhibit at least 10 % higher score of physical health of test WHOQOL 100 than probands of group B.

### 3 PROCEDURE AND METHODS

#### 3.1 Procedure

To determine the health benefits, pre-research was carried out by the author with
the consent of 32 participants – clients in wellness massage program. 32 probands were randomly selected from the fifty applicants, when 16 probands (8 males; 8 females) were placed in Group A, which absolved the "Inner Silence" intervention. The other 16 probands were collected in Group B (8 males; 8 females) which did not absolve the "Inner Silence" intervention, but traditional massage program.

Age characteristics:
- Group A (n = 16, 8 males; 8 females): average age of 39.13 years; the average age of the females was 38.5 years, and the average age of the males was 39.75 years. In the Group A the female gender is marked A1 - A8 and the male gender is marked A9 - A16.
- Group B (n = 16, 8 males; 8 females): with an average age of 38.25 years; the average age of the females was 38.38 years, and the average age of the males was 38.13 years. In the Group B, the female gender is marked B1 - B8 and the male gender is marked B9 - B16.

The timetable for the research and tests application was determined. 1st day was realised the WHOQOL questionnaire application. On the 7th day and on 14th day, the EEG test was performed. Finally, on 21st day the final EEG test was performed and the WHOQOL questionnaire was applied again. The timetable was valid for all probands to precise an objectiveness of the research procedure, see Table 1.

Table 1 Timetable of the research procedure including then „Inner Silence" intervention

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHOQOL</td>
<td>EEG 1</td>
<td>EEG 2</td>
</tr>
<tr>
<td>1st day</td>
<td>7th day</td>
<td>14th day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EEG 3; WHOQOL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21st day - end of research</td>
</tr>
</tbody>
</table>

The "Inner Silence" intervention was applied and implement into the massage unit, using a wellness massage technique to create a state of inner silence. Intervention "Inner Silence" was realised in Group A, represented a wellness massage in combination with the inner silence state instructions. Initially, a standard welcome interview was conducted, after which the probands were left to relax in their inner silence during the massage. In Group B, where the "Inner Silence" method was not applied, a traditional massage procedure was performed during which different topics of daily life were discussed, such as work, etc.

Describing of steps of the intervention:
1. Welcoming of proband, inviting them in the "Inner Silence intervention.
2. The proband removed their clothing in cloakroom and could borrow a hair tie, hairbrush and cover sheet to the massage table.
3. Position of the proband on the massage table: For measuring purposes, the proband laid on their back during each measure of brain activity before the massage. Then the proband was asked to change
the position on stomach, and the massage started.

4. Massage: The back massage was performed with standard massage techniques first on one half of the back and then on the other half. Then it was applied a short Breuss massage. Finally, the proband was massaged from the head down to the buttocks, followed by massage of the interscapulum muscles. After the massage was finished, the proband was asked to turn onto their back, and the massage continued on neck, scalp and face. The massage was combined with light traction of the cervical spine.

5. Rest. The probands were allowed to rest for five minutes after the massage.

6. Final measurement of brain activity EEG: After the procedure, it was performed two comparative examinations of the electrical activity of the brain.

7. Clothing. On the 21st day, the clothed proband was asked for another structured interview, which examined their quality of life using the WHOQOL 100 questionnaire.

Good bye. Each proband who participated in research received three free treatments.

3.2 Methods

Diagnostic methods

- WHOQOL questionnaire - The WHOQOL-100 quality of life assessment was developed by the WHOQOL Group with fifteen international field centres, simultaneously, in an attempt to develop a quality of life assessment that would be applicable cross-culturally, included four items for each of 24 facets of quality of life, and four items relating to the overall quality of life and general health facets.

Domain Facets are incorporated within domains:

1. Physical health - Activities of daily living; Dependence on medicinal substances and medical aids; Energy and fatigue; Mobility; Pain and discomfort; Sleep and rest; Work Capacity.

2. Psychological health - Bodily image and appearance; Negative feelings; Positive feelings; Self-esteem; Thinking, learning, memory and concentration.

3. Independence - Freedom, physical safety and security; Health and social care: accessibility and quality; Home environment; Opportunities for acquiring new information and skills.

4. Social relationships - Personal relationships; Social support; Sexual activity.

5. Environment - Financial resources; Participation in and opportunities for recreation / leisure activities; Physical environment (pollution / noise / traffic / climate) Transport.


- EEG biofeedback Brain feedback III DEYMED ® - The biofeedback with this all-in-one portable system.
Neuromap system featuring high sample rates, continuous on-line impedance monitoring and an intuitive user-friendly interface.

"Inner Silence" Intervention - three weeks interventional program with techniques of “Inner Silence” from the point of view of health support and quality of life in adults, based on mindfulness relaxation and breath concentration. Mindfulness involves paying attention each moment to things as they are, with an open-hearted and non-judgmental attitude. It is the process of observing thoughts, emotions and sensations as they come and go, with an attitude of curiosity and acceptance. Mindfulness relaxation help to be less caught up in stress, worry, low mood, by allowing us to develop a greater capacity to engage in our lives by being more fully present (Krejčí, 2016).

Statistics - descriptive statistics methods as frequencies, measures of central tendency (averages) and percentage were used in program Excel.

4 RESULTS AND DISCUSSION

Hypotheses H1 declared that: “After the intervention unit "Inner Silence", probands of Group A will exhibit a higher incidence of alpha points by at least 10 alpha points compared to the probands of Group B” was verified. The electrical brain activity in all three measurements increased significantly more in probands of Group A in comparison with the probands of the Group B, see Figure 1.

![Figure 1 The comparison in the third measure of electrical activity between the groups A and B (blue colour = before the massage unit, orange colour = after the massage unit), (n=32; Group A = 16, 8males; 8 females; Group B = 16, 8males; 8 females)](image)

In the Table 2 are presented results of the probands in the comparison of different domains of the “WHOQOL” in score reached on 1st day comparing to 21st day after the intervention period. From the Table2 overview we can declare that between Group A and Group B are significant differences in positive increasing of scores in different domains, especially in the domain “Physical Health”.

![Table 2](image)
The results presented in the Table 2 show a summarization of the quality of life, summarizing individual domains of the probands in the Group A and in the Group B.

Table 2 The comparison of positive increasing in score of WHOQOL domains in the probands of Group A (A1-16) and in the probands of Group B (B1-16), (n=32; Group A = 16, 8 males; 8 females; Group B = 16, 8 males; 8 females)

<table>
<thead>
<tr>
<th>Individual domains</th>
<th>Day</th>
<th>Group A Score of A1-16</th>
<th>Group B Score of B1-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domain I.: Physical health</td>
<td>1</td>
<td>271.3</td>
<td>275.6</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>326.9</td>
<td>309.4</td>
</tr>
<tr>
<td>Domain II.: Experience of life</td>
<td>1</td>
<td>527.5</td>
<td>538.1</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>577.5</td>
<td>558.8</td>
</tr>
<tr>
<td>Domain III.: Independence</td>
<td>1</td>
<td>416.9</td>
<td>421.9</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>446.9</td>
<td>445</td>
</tr>
<tr>
<td>Domain IV.: Social relationships</td>
<td>1</td>
<td>335</td>
<td>338.8</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>344.4</td>
<td>340.6</td>
</tr>
<tr>
<td>Domain V.: Environment</td>
<td>1</td>
<td>890</td>
<td>896.9</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>898.1</td>
<td>903.8</td>
</tr>
<tr>
<td>Domain VI.: Spirituality</td>
<td>1</td>
<td>109.4</td>
<td>113.8</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>113.1</td>
<td>118.8</td>
</tr>
</tbody>
</table>

Hypotheses H2 that: “After the "Inner Silence" intervention unit, probands of the Group A will exhibit at least 10 % higher score of Physical health of test WHOQOL 100 than the probands of the Group B”, was verified. Analyses of the results and their comparison show that after the intervention unit the probands of the Group A realised a positive improvement in 55.6%; in comparison of the probands of the Group B, which improvement was realised in 33.4% only, see the Table 2.

The research confirmed Hypotheses H1 and the Hypotheses H2, confirming the improved effect of the wellness massage with the simultaneous application of the "Inner Silence" intervention unit. Given that the research took place over 21 days and positive results could be seen over 14 days, the "Inner Silence" program can be included in a 2-week wellness program.

Based on the results of the Deymed diagnostic of EEG, the results analyses show that the "Inner Silence" intervention significantly promoted a higher incidence of alpha rhythm see Figure 1. The alpha rhythm is a direct indicator of relaxation and it is a direct indicator of human health. Its occurrence promotes the proper functioning of the body and its regeneration. If we learn to apply the "Inner Silence" intervention on a regular basis, we will see very fast positive effects on all aspects of human activity. The advantage of many "Silence" techniques is their easy application and accessibility in everyday life. Some "Silence" techniques do not have to be specially trained, and every person can pursue them on a daily basis. The positive effect of "Silence" techniques deepens with repetition. Clients who underwent the "Inner Silence" method for the first time were very pleasantly surprised by their immediate positive mood. Many people described a feeling of "goose bumps". Even those who only had a traditional type of massage were very satisfied with the procedure, but they didn't describe a change in their experience.

The questionnaire survey showed that the use of the "Inner Silence" intervention improved the quality of life in the Domain
“Physical Health” much more than a traditional massage procedure. This may be a reflection of the beneficial effect of the "Inner Silence" intervention in higher alpha activity on the quality of life and therefore on health.

We recommend investigating the “Inner Silence” intervention in future research again in standard condition in more probands of the different age periods. On the base of the results of the presented study we can recommend in the practice work of wellness specialists to implement he techniques of “Inner silence”, especially before and during the wellness massage procedure.

5 CONCLUSIONS

The comparison between women and men has shown that the "Silence" technique positively affects both women and men. Men exhibited somewhat greater improvements, which may have a direct connection to the greater improvement in men during a massage.

The conclusions show a broad application of the "Silence" technique, as well as the fact that the Silence technique can accompany any procedure or it can be provided separately. In practice, this offers a wide range of uses for the application of the "Inner Silence" method. Moreover, some individuals can apply some "Silence" techniques on themselves without any training, or they can be applied by the "Inner Silence" method. The "Inner Silence" method does not need to be painstakingly practiced, and its effect increases with repetition as evidenced by the EEG measurement, which is its indisputable advantage over other techniques and methods. If the "Inner Silence" method is practiced more often, we will achieve better relaxation, greater relaxation effects and health benefits. We must realize that "Silence" techniques include sleep, relaxation and meditation.

6 REFERENCES


### 7 CONTACTS

**Mgr. Jana Váňová**  
College of PE and Sport PALESTRA  
Prague, Czech Republic  
E-mail: javanova@centrum.cz

**Prof. PaedDr. Milada Krejčí, PhD.**  
College of PE and Sport PALESTRA  
Prague, Czech Republic  
E-mail: krejci@palestra.cz
Abstract
In the paper are presented results of a part of the international research project W/VSP/161/I researched the impact of lifestyle, circadian typology, sleep and eating habits on the performance of athletes in cooperation of the College of PE and Sport PALESTRA in Czech Republic and the University of Kochi in Japan. The main aim of the presented study was to investigate selected circadian determinants of super league male players on their sport performance. The second aim was to develop and objective an educational material focused on floorball players. 12 males, super league players of AC Sparta Praha, in the age 17 – 27 participated in the study. The survey was carried out in the timeline of four weeks within four educational units when players got the necessary information. Anthropometric measurements, Battery of 3 Questionnaires, Sleep Diary, Intervention program "What can get me to level up?!" and Statistical methods were used for monitoring, analyse, evaluation and prediction during the investigation. The hypotheses were confirmed. In participants were analysed the improving of psychological condition in 10.29 %, in physical fitness in 12.75 %, in sleep quality in 3.65 % and in improving of the selected playing activities even in 48 %. The results declare that the applied intervention program can effectively support the performance and health of young super league floorball players.

Keywords
Sport performance, sleep and circadian rhythms, floorball, super league players.

1 INTRODUCTION
Chronobiological determinants and their influence on performance in sports are still unknown for athletes in the Czech Republic. However, athletes, especially players, encounter them, and these determinants are very important to them. Athletes at the semi-professional and professional level solve many details of their life, but completely forget the crucial and important factors related to performance in terms of their circadian preferences.

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Circadian rhythms last 24 hours and belong to biorhythms that are related to most biochemical and physiological functions of the organism. Biorhythms are also subject to psychological processes - remembering, concentration of attention and reaction time. Daily biorhythm is a period of the human body, it includes energetic maxima, minima and also time for rest (Liba, 2016). Being a morning type man is not only much better in the sport and an athlete would be heading to this lifestyle. If an athlete goes to sleep soon, he has a good hormone levels, has good

Marek MANDELBAUM, Tetsuo HARADA, Hitomi TAKEUCHI,
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sleep that helps him recover and prepare for the next stage of training. The reasons for keeping the regime and being rather the morning type are many. Of the many intervention studies by Harada and Krejčí, it is evident that a person with the right biorhythms is better focused, demonstrably increasing his responses, better regenerating the body and being resistant to injuries. The higher concentration of serotonin in the brain means the better concentration during the training. Bad sleep mode causes athletes suffering from depression and heart or vascular disease. In better cases they have only a bad mood and are tired. Sleep is the building block of the right human biorhythm, and we must attach great weight to it. (Harada, Krejčí, et al., 2016)

In the context of circadian rhythms, we know three important hormones that, if they have the right level in the body, help achieve the right circadian rhythms. Important hormones for the proper functioning of circadian rhythms:

- Melatonin
- Serotonin
- Tryptophan

Serotonin belongs to a group of mediators, from a chemical point of view belongs to the group of biogenic amines. Serotonin affects mood regulation, like noradrenaline, and helps regulate sleep. A lower serotonin value in the body is often associated with depression. Serotonin is also closely related to the tryptophan hormone, which is best formed in the morning if the correct breakfast composition is chosen. People should eat good quality proteins, such as soy, peas, fresh eggs, high quality cheese, white yoghurt, or tuna or salmon. The right breakfast made up of proteins and, for example, a very nutritionally balanced banana, will increase the level of tryptophan. Tryptophan is further converted to serotonin. The conversion takes place when the above-mentioned breakfast and sunshine are combined. Everyone should go out after breakfast and expose themselves to sunlight. For example, a 15-minute walk, a morning run, or just a public transport journey. The effect of sunlight converts tryptophan to serotonin. This transformation is very beneficial to us. We feel better then, we have fewer tendencies to depression, work better and we are more efficient. For athletes, this process is very important in the match. Athletes make big mistakes in the form of breakfast and do not even know they should go out.

Melatonin is a hormone that is formed in the shingles and is essential for sleep. Melatonin originates from serotonin. His work increases the darkness. On the contrary, light diminishes its production. Cells of pineal cells create intense secretions called melatonin. Melatonin is then transported to the wall of the capillaries through which the protrusions are brought into the bloodstream. According to impulses that come from one hypothalamic nucleus, pynealocytes produce a fluctuating amount of melatonin. This fluctuating amount is related to the maintenance of circadian rhythms and physiological changes of the organism. (Dylevsky, 2009)

The higher amount of melatonin in the evening is stimulator of the better quality of sleep in the body. Under an artificial yellow incandescent lamp of 2300 to 2700 K, we should read a book in the evenings. This power of illumination is positive for melatonin formation. It is important to have absolute darkness during sleep. Any minimal light makes our body break during
rest (Harada, Krejčí, Wakamura, et al., 2016). On the contrary, the artificial blue light which reduces melatonin in the body is very damaging. Artificial blue light is omnipresent in today's world. A young student or top athlete, according to Takeuchi and colleagues, spends an average of several hours each night playing computer games, watching TV, or making a tablet or cell phone. These factors cause very low melatonin levels, and people are tired the next day and worse focus on any job. (Takeuchi et al., 2015). For a clearer understanding of the relationship of hormones to circadian rhythms, the following diagram was created, see Figure 1.

![Diagram](image)

**Figure 1** Diagram declared the relationship of circadian rhythms to tryptophan, serotonin and melatonin formation (Mandelbaum, 2016)

According to the published outputs of Harada et al. it is essential to follow the three principles: walk in time to sleep, get up early and eat regularly. These scientists have developed educational material dealing with the subject: "Three Benefits of Early Saving to Sleep, Earlier Rising and Regular Breakfast" (Harada, Wada et al., 2013). Also the research study of Nakade, Takeuchi, et al. has shown that tested university students - athletes have lower performance on training and are also very vulnerable to injuries due to evening lifestyle typology (Nakade, Takeuchi, Krejčí, et al., 2015).

**Breakfast diet in relation to circadian rhythms**

Linking nutrition, sleep, and the influence of light on humans is important for proper function of circadian rhythms. It is essential that these determinants are linked to each other and athletes have learned to manage them all, not just their parts. If an
athlete wants his biorhythm to work, he must also be concerned about proper nutrition. Japanese Intervention: A questionnaire survey of comparisons of circadian typology, physical and mental health and nutritional habits of Japanese university students at university students who are sporting, has shown that students have psychological and social problems. The relationship with nutrition is not negligible at all. The results of the research showed that students with far more energy-consuming typology consumed carbohydrates. Even in the evening, the morning breakfast is disturbed in addition to sleep. Hormone formation is not as good as we would need. (Nakade, Takeuchi, Krejčí, et al., 2015).

**Influence of light on athlete biorhythm**

Both types of artificial and natural light are important for the production of melatonin and serotonin hormones. Sunshine is the daylight that helps athletes to wake up and to feel fresh and full of energy. On the contrary, the moonlight creates the athlete for sleep. We also encounter classic light bulbs, fluorescent blue and fluorescent white lights, LED lights and candlelight or fireplace lighting. The proper circadian rhythm has these lights mainly due to the time in which the human body acts. Daylight, a sun-like light, is a fluorescent white light found in fluorescent lamps. These lights are in offices, shops and many other public places. This light, if it has a minimum luminous intensity of 4200 K, positively affects the brain. If a fluorescent light with a minimum luminous intensity of 4200 K is applied to the athlete, this will partially replace the sunlight that is important for serotonin production. But the sunshine can not be completely replaced. Research at the University of Kochi recommends that the athlete be exposed to sunlight for at least 15 minutes every day after breakfast. Thereafter, the tryptophan hormone is better converted to serotonin. A large dose of serotonin that the athlete gets because of sunlight can maintain a solid phase of circadian rhythms.

**Sport professiography of floorball**

Floorball is a goal game that is considered one of the fastest sports in the world. In this victory game, it decides which of the two teams will score more goals. Non-hockey goalkeepers have a shot at speeds up to 200 km / h. It is a physically demanding sport, but less demanding than hockey. With its dynamism it does not lose its attractiveness at any stage of the game. The anticipatory nature of the game brings great demands on the cognitive and sensomotoric processes of the players. Game situations run in time and players are exposed to great emotions. At the top level floorball requires physically-quality players. In particular, it must be advanced in repeated high-intensity short-term activities. The main requirement is the combination of speed and fitness capabilities. Each player is both an executive and a psychological point of view, an important member of the team, and helps the overall strategic and operational performance of the entire group of players as a whole. We understand the profession as a characteristic of sport in terms of the requirements of selective rules, psyche, methods and requirements. In this heuristic collective game, it is important to overtake the opponent, apply unexpected procedures, anticipate how the opponent reacts and direct contact that is common in the floorball to overcome the opponent. For these aspects of
floorball it is important to be mentally well balanced and physically ready.

2 OBJECTIVES AND HYPOTHESES

The main goal of the diploma thesis was research of selected chronobiological determinants of performance of extralig players AC Sparta Praha - floorball and research monitoring of effects of the intervention program on the performance of players in the category of men from 17 years of age. A partial goal was to create educational material for players and floorball trainers.

Hypotheses:
H1: After completing the intervention program "What can get me to level up?!" a subjective improvement of the physical fitness assessment will take place.
H2: After completing the intervention program "What can get me to level up?!" subjective improvement of the psychological condition will be improved.
H3: After completing the "What can get me to level up?!" intervention program, participants will improve sleep quality.
H4: After graduating from the "What can get me to level up?!" intervention program, the game activity will improve by at least 40%.

3 METHODS

Material and procedure
The research team consisted of 12 superligo floorball players in the age range 17-27 years of age, who were at the time of research at the beginning of the competition period. The player's average age was 22.5 years, median 22 years. The players were involved in the AC Sparta Prague training process and are entering the top Czech floorball league - Tipsport Superlize.

Before the start of the intervention program, players were introduced to the course of the research and participated voluntarily. Of the participating players there were 8% of the workers, 42% of the university students or secondary schools, 50% of the university students and of the working people. The students are selected by 80% of university students and 20% of secondary schools. All players lived in Prague or near Prague and were still single.

Before the intervention was launched, questionnaires and record sheets were prepared in cooperation with the Japanese Department of the University of Kochi (Harada, Tsuji). Then an informative flyer "What can get me to level up?!" (Mandelbaum, Harada, Krejci, 2015) was created to describe the purpose and objectives of the intervention. Prior to the start of the research, a selection of suitable players was consulted with the club's coaches and supervisors. Appropriate players have chosen the team coach to decide which players are willing to undergo the test and also who have a long-term interest in improving their sporting skills in detail. The intervention program was conducted continuously for 14 days, with four educational units being implemented.

The presented research study was elaborated in the framework of the International research Project of VŠTVS PALESTRA W/VSP/131/I "Research of the influence of lifestyle, circadian typology, sleep and eating habits on the mental health of sports and non-sports children and students in the Czech
Republic and Japan" in collaboration with the Laboratory of Environmental Physiology, Kochi University, Japan.

The research was conducted over a four-week timeline. In the first week it was prior to start the intervention and to give to players first information about sleep, breakfast, and light intervention program "What can get me to level up?!". Data editing, statistical analysis and consultation of scientific solutions of the research solution took place at the Japanese laboratories of the University of Kochi, see the Figure 2.

Figure 2 Timeline of the investigation procedure

Diagnoses

Anthropometric measurements

- **Weight Measurement**: Weights of participants of the intervention program were determined on a personal scale of Microlife WSD80Ds. Dear participants took part in lingerie.
- **Body height measurement**: Vertical distance from point to pad. The participant stood back to the wall (without lining on the floor), his heels and toes together. The walls touched the heel, his buttocks and his head. The head was in a position in the so-called Frankfurt Horizontal, which provided the correct position for measuring the highest point on the top of the head. (Kornatovska and Bláha, 2015).

- **InBody** - Measurement took place at least two hours after the last meal intake of the participant, before the shower and after calming the heart rate from the exercise load. An example of the results of a test participant from the AC Sparta Praha Team, see [http://www.inbody.cz/pro-presne-mereni-na-inbody.php](http://www.inbody.cz/pro-presne-mereni-na-inbody.php)

Tests "Pencil - paper"

- **Questionnaire CIT „Ciircadian typology and preferences“** (Harada, Krejčí, 2015)
- **Questionnaire „Assessment of floorball skills“**. This questionnaire consisted of 17 items that subjectively players evaluated (Mandelbaum, 2016)
• Sleep diary (Harada, Krejci, Tsuji and Mandelbaum, 2015)
• Breakfast diary - with using of the web application (http://www.kalori cketabulky.cz)

**Intervention** "What can get me to level up?!"

The intervention was created thanks to inspiration from Tetsuo Harada, who created educational material for Japanese athletes - under this inspiration was created a flyer "What can get me to level up?!", see the Picture 1, divided into five sections. The first section contains basic milestones of training in terms of circadian rhythms and wellness lifestyle. The second part of the flyer describes the basic characteristics of REM and NON - REM sleep. The third section informs participants about the influence of natural and artificial light on sports performance. In the fourth section, players will learn why they should have breakfast and what composition should have breakfast with a good effect on circadian rhythms. The last 5th section of the flyer contains information about the wellness lifestyle, regeneration, and a summary of what an athlete should improve to improve his biorhythms and lifestyle. This flyer was received by each participant before the start of the intervention. It was a continuous two-day program with regular recording of sleep rhythms, the time the body is exposed to, the time the body is exposed to artificial light "blue light", the food the participant consume for breakfast and mental and physical feelings. At the beginning, in the middle and at the end, four educational units were made. Each training unit lasted for a total of 30 to 90 minutes.
Statistics

Statistical analysis was provided in the Japanese workplace, in the Laboratory of Environmental Physiology of Kochi University, based on the SPSS program, using Wilcoxon test, Kruscal-Wallis test, Pearson correlation coefficient and Mann-Whitney U-test.

4 RESULTS AND DISCUSSION

Results of anthropometric examinations

Players had taken measurements on the InBody before the intervention began. By measuring, their mean value of idle consumption of metabolism was 1874.6 calories (Table 8). The minimum value is 1566 calories. The calorie consumption of floorball players is 0.1 kcal per kilogram of player per minute. A player with an average weight of 68.3 kg would use 409.8 calories per hour of intense floorball training. The AC Sparta Prague players were very low. Eleven participating players out of twelve had less body fat than 12%. Four players had only 3-6% of the fat in the body. The total average of AC Sparta Praha's participants was 7.53% of body fat. The InBody was the daily calorie consumption values in sleep mode. According to the histogram, 3 of the most participants (4) ranged between 1800 and 1900 calories per day. With an hour of workload, but the calorie requirement increases by up to 500 calories.

Results of the tests "Pencil - Paper"

The results of the test of physical and mental condition evaluated from the sleep...
journal were evaluated by the Mann-Whitney U-test. Of the subjective sensory scores recorded in Table 10 of the first 3 days and the last 3 days of the 12-day intervention program, there was statistically proven significant improvement in the physical condition of the players. The bold Z and P values show a statistically significant improvement for the participants. Physical condition improved during the intervention program by 12.75%. These results verify the hypothesis H1.

Of the recorded values in the sleep preferences, statistically significant improvement in the psychological condition of the participants was statistically demonstrated. The improvement in mental health was 10.85%. These results verify the hypothesis H2.

![Figure 3 Circadian score values of participants (n = 12, male)](image1)

![Figure 4 Time when participants went to sleep in weekend days (n = 12, men)](image2)
Figure 3 shows values of very high circadian score. All participants had a score higher than 10. Participants were evening types due to biorhythms. Figure 4 shows the average times in which 12 participants were put on sleep on weekdays. Most participants were put to sleep at 23:00 and 24:00. The results of the analysis also showed that participants went to sleep on days off rather than on working days.

According to the records, most participants woke up in the days of the holidays very late and differently from business days.

On average, participants were put on sleep for up to 90 minutes later on days off than on working days. Due to circadian rhythms, participants should be asleep at the same time each day.

Also, during the times when participants woke up on days off and working days, it was a significant difference. One participant woke up on days off until 6 hours later than on business days. Participants should wake up every day as well, no matter what the day is.

On weekdays, each participant should ideally sleep for 8 hours. But only 8 - 8.5 hours slept only 5 participants. Analysis of weekend sleep results showed that the participants slept a few hours longer than on weekdays. Each participant would ideally sleep for 8 hours. Some slept for up to 12 hours.

We really do consider the fact that most of the participants slept for up to 6 hours longer on working days than on working days. Only two participants slept at the same time on weekdays and on working days.

Results of time records evaluated from the sleep log. Mann - Whitney U - test and the Wilcoxon test show that the difference between the first and last 3 days of the interventions was statistically proven. Participants experienced a change in waking and waking hours. At the end of the intervention the participants got up later. Significant improvement occurred in the quality of sleep, which improved at the end of the intervention. The quality of sleep quality improved on average by 3.65%. These results verify the hypothesis H3.

The evaluation of the sleep determinants and the anthropometric measurements was made using the Pearson coefficient. The Pearson coefficient revealed significant relationships in the relationship between sleep determinants and the amount of fat in the body. Statistical evaluation shows that participants with higher fat content in the body later rose on days off. Over the weekend, participants with higher fat content also slept longer than those with lower body fat.

In addition, positive changes were analyzed for the 16 components important in the game. Positive changes in the impact of the intervention program have been analyzed. Frequency analysis found that a positive change occurred in 48% of response records, with the most common positive changes for the components of the "field of view in the game", "score accuracy" and "tactics understanding" were well chosen in the intervention program. The results verify the H4 hypothesis.
**Table 1 Evaluation of the comparison of the sleep determinants with quantity of body fat (n = 12, males)**

<table>
<thead>
<tr>
<th>Monitored sleep determinants</th>
<th>Pearson coefficient</th>
<th>Quantity of body fat [%]</th>
<th>Quantity of body fat [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time to go in bed on weekdays</td>
<td>Pearson’sr</td>
<td>−.343</td>
<td>−.359</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>.230</td>
<td>.208</td>
</tr>
<tr>
<td>Get up time on weekdays</td>
<td>Pearson’sr</td>
<td>.018</td>
<td>−.014</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>.952</td>
<td>.961</td>
</tr>
<tr>
<td>Time to go in bed on weekend days</td>
<td>Pearson’sr</td>
<td>−.299</td>
<td>−.398</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>.299</td>
<td>.159</td>
</tr>
<tr>
<td>Get up time on weekend days</td>
<td>Pearson’sr</td>
<td>−.788 **</td>
<td>−.806 **</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>.001</td>
<td>.000</td>
</tr>
<tr>
<td>Cirkadian type - score</td>
<td>Pearson’sr</td>
<td>.351</td>
<td>.432</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>.219</td>
<td>.123</td>
</tr>
<tr>
<td>Participants used to go sleep very late</td>
<td>Pearson’sr</td>
<td>.042</td>
<td>−.052</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>.886</td>
<td>.860</td>
</tr>
<tr>
<td>Participants used to awake very late</td>
<td>Pearson’sr</td>
<td>−.763 **</td>
<td>−.771 **</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>.002</td>
<td>.001</td>
</tr>
</tbody>
</table>

**DISCUSSION**

Analyses of the subjective physical fitness assessments has shown that even such a short intervention program can improve players' feelings and improve one of the most important sports determinants. Improving subjective physical fitness ratings by 12.75% is not negligible. This is a sign that information on this issue has been well-handed to players before the start of the intervention program. Based on the correct program concept, players have followed Cirkadian recommendations in their daily schedule. We were very surprised that such a short intervention program could improve the subjective feeling of physical fitness by more than 10%. This improvement can have a strategic impact on the mental health of floorball players. The knowledge and skills of players leading to the elimination of excessive physical and psychological stress bring athletes knowledge of their self. (Krejci, Harada, 2016). The subjective assessment of the players' psychological condition during the 14-day program improved by 10.29%, indicating the effectiveness of the intervention program aimed at improving the mental balance of the players. The mental aspects of the athlete are associated with other floorball skills. Psychic properties do not manifest in every athlete in the same way and with the same clarity, but for each individual, his psychological qualities are reflected in his skills. For this reason, psychological balance and comfort for sporting performance is extremely important, as mentioned by Dovalil (2010), Hošek (in Slepička, Hošek, Hátlová, 2006). As Harad et al. (2015), the interdependence of the psyche and circadian rhythms, the player's performance in the game is unforgettable. Psychotropic balance and a good subjective sensation are mainly due to the hormone serotonin, which is synthesized from the tryptophan hormone. The process of physiological transformation is complex, but it is sufficient for the athlete to understand the main context, and in particular to follow the intervention principles (Harada et al., 2015). The results
show that if the players observe these determinants, their psychic status will be demonstrably improved. In order to improve the psyche of players, it is important to follow all the recommendations in relation to circadian rhythms in this intervention program. For this reason, a flyer "What can get me to level up?!" Has been created for extralig players of floorball, so players have been properly and effectively informed. The psychological state of the individual also has a positive effect on the hormone melatonin, which on the contrary helps sleep athletes, which is almost the most important determinant for the regeneration and psychic properties of the players. For proper melatonin production, it's important to sleep about 22 hours, keep the same sleep mode every day, and restrict work on electronic devices that emit light-blue light. This artificial light has a very negative effect on melatonin production. In view of improving players in psychological condition, it is obvious that players have followed a well-defined intervention program.

Prior to the start of the intervention, during the first meeting with the players in EJ 2, the selected participants gained detailed information about the circadian rhythms in pairs. They also gained information about the breakfast diet they were supposed to follow. The goal was to increase the protein content of their breakfast, which is involved in the formation of tryptophane and then, thanks to the sunshine, synthesize it to serotonin, which helps to correctly adjust the circadian rhythms. Players learned how to work with the mobile application www.kaloricketabulky.cz during the training unit, which proved to be good for evaluating eating habits. A detailed online overview of the breakfast composition of all participants has helped to greatly improve the effectiveness of the intervention program. Players have shown interest in gaining additional knowledge about the breakfast issues on which they have worked very well. The results of the breakfast composition show that the dishes contained good quality protein and the protein content increased by 39% on average at the end of the intervention, which is a significant improvement.

Another recommendation for participants was to go for a minimum of 15 minutes each morning after breakfast. They can walk on public transport or go to work. Most participants spent 15 minutes in front of the intervention program in the morning in the morning light. After receiving information that their mood is positive for their mental and physical fitness, players have increased their average time to 37.6 minutes. According to Harady and Krejci (2013), vitamin B6 with daylight contact is positive for the synthesis of tryptophane to serotonin. It is very interesting that players, after only fourteen days of extending the time spent in daylight in the morning, improved all the components examined, which are associated with light determinants. The players apparently received the information well because they fulfilled the recommendations.

The results also showed that players had problems with their sleeping rhythms. In the pre-intervention questionnaire, players reported difficulty getting up and falling asleep, but also during the intervention it was found that the participants were going to sleep at different times on weekdays and on working days. Also, the length of sleep extended to players on days off to 6 hours. It is likely
that players have time, psychologically and physically demanding weekdays in which, unlike other top athletes, they must also work, school or work and school at the same time. This schedule of performance floorball players is very demanding, and it is almost impossible to observe all the principles of circadian rhythms. As long as this sport does not go on a professional level, it will be very difficult to adhere, for example, to the principle of walking around 22 hours and sleeping 8 hours each day. Superligabalkbalbalist training often ends only around 22 hours. These players can be included in the evening typology, which, according to the Japanese study, is negative in terms of psychological and social performance. Players should therefore have this information about the circadian rhythms and their influence on sports performance. (Harada, Nakade and Krejci, 2015)

The study found that the intervention program that we created for the needs of AC Sparta Praha's super league team - floorball is feasible. The program has positively and unconditionally fallen into the training process of floorball players. There were no major problems during the program. I have shown willingness and interest to implement the intervention in full. From players, I have a great approach and a responsible approach to this program. The players responsibly filled in the questionnaires and recorded the values in the diaries. The program was tailored for male floorball players, and players just recorded and retrieved information.

5 CONCLUSIONS

The four verified hypotheses indicate a valuable methodological preparation of the research. The conclusions of the study can be crucial in the two directions: First - players of the super league floorball team are able to make great progress in fourteen days and improve the values of their circadian determinants in a short time. Second - obtained information about the circadian rhythms and player biorhythms can improve players' performance within fourteen days of the intervention. Therefore we can conclude that this practice if very effective and beneficial and therefore can be recommended for the training of floorball players in general.

Research has shown that floorball players in hard-to-do-now computers hardly give up staying at a computer or working on mobile devices, which is very negative for the proper functioning of Circadian rhythms. Players also go to sleep late and have different sleep schedules that harm circadian determinants.

Based on results analysis, floorball trainers can recommend that floorball players should follow several determinants to improve their circadian rhythms. Players should go to sleep within 22 hours, sleeping about 8 hours. In addition, they should also be asleep for as long as workdays and days off. Floorball players should go to sleep at the same time each day and at the same time should also get up. Breakfast should include foods rich in proteins to have enough tryptophan and then go to 15 minutes out in the sunshine to tryptophan to synthesize the hormone serotonin. In the evening, players should restrict the time spent under the influence
of "light light" that adversely affects melatonin production.

A strategic perspective for further research in the area seems to be the need to add motor testing of players before the intervention by selected tests aimed at coordination, reaction speed and player's memory. It would also be good to study sleep and a breakfast regime for players for two weeks prior to the intervention so that the results are as obvious as possible. Definitely it is possible to recommend the presented study to inspirations for practice of coaches as well for wellness specialist in the field of sports.

6 REFERENCES

7 CONTACTS

Marek MANDELBAUM, MA.
College of PE and Sport PALESTRA

Prof. Tetsuo HARADA, PhD.
Kochi University, Laboratory of Environmental Physiology

Assoc. Prof. Hitomi TAKEUCHI, PhD.2
Kochi University, Laboratory of Environmental Physiology

Fujiko TSUJI, MA.
Kochi University, Laboratory of Environmental Physiology

Prof. Dr. Milada Krejčí, PhD.1
haratets@kochi-u.ac.jp
College of PE and Sport PALESTRA

Correspondent author address
Prof. PaedDr. Milada Krejčí, PhD.
College of PE and Sport PALESTRA Czech Republic
E-mail: krejci@palestra.cz
GENDER AND INTERNATIONAL MIGRATION

Pavol KOPINEC, Monika MAČKINOVÁ

Abstract
Many people around the world are seeking new opportunities and better life. Gender affects and is influencing the reasons for migrating, it also refers to the behaviors, and expectations which are associated with being female or male. It is therefore necessary to understand, analyze and respond to current gender dynamics. One of the fastest growing group is women and girls migrating for employment. Migration can allow them to advance socially and professionally. Unfortunately, there is also another and less pleasant part, which could lead to abuse and exploitation. Thanks to the greater awareness that migration flows include women and girls the gender perspective in international migration is becoming more important. This paper therefore focus on short description of law, selected gender aspects, awareness on discrimination, gender based violence, protection and principles of human dignity and equality.

Keywords

INTRODUCTION

Women and men migrate for different reasons and it’s also important in the formulating migration policy, whether it focus on immigration, labor, asylum or family reunification. Most of the migration policies are unfortunately not influence by gender. As stated by IOM gender refers to differences between women and men and how they are perceived by cultures and society. Gender is more important than country of origin, age, class or race. The number of migrant women is increasing rapidly, in many cases they are joining their husbands or in regards to family reunification or they are migrating independently for economic or carrier reasons. Migrant women play significant role in welfare and social services both as providers or recipients. In Europe within past years become migration very sensitive political subject, e.g. in providing cheaper labor or claiming benefits. Almost half of the population movement consist of women. Migrant women could play an important role in their home country e.g. by strengthening political debate, enhancing the role of civil society, emancipating women and minority groups in countries of origin (de Hass 2006). However, the potential and benefits of migration is not fully enjoyed by women. Another important factor is Climate change which may not only directly impact women through environmental changes, but unequal gender relations and access to resources may make women more
vulnerable to climate change than men (Masika, 2002). The impact on women would be likely worse in developing countries because of the deeper economic and social gender divide. Women are targets of sexual violence because of their production and reproduction role of identity. They are usually caregivers for children or other members of family, and it’s a very difficult decision for them about leaving their family or be exposed to a journey.

Selected legal documents

There are several international law provisions, which are relevant to gender and migration, mostly addressed through nondiscrimination on grounds of sex, national and social origin etc. which are included in international instruments as follows:

- The Universal Declaration of Human Rights (art. 2)
- The International Covenant on Economic, Social and Cultural Rights (art. 2,2)
- The International Covenant on Civil and Political Rights (art. 2,1)
- The International Convention on Elimination of All Forms of Racial Discrimination (art. 1)
- The Convention on the Rights of the Child (art. 2)
- International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families
- The 1951 Refugee Convention
- The Guiding Principles on Internal Displacement

There need to be stated, that women were absent from the drafting of 1951 Refugee convention (Edwards, 2010), so the masculine view was presented as a norm for the international legal protection and women were judged as secondary in importance. Important moment was the UN Decade on Women between 1976 and 1985 and World Conference in Nairobi and Being, were focus was stretched on impact of displacement, violence and conflict on woman (Martin 2010). The European Parliament in 1984 then passed a resolution that highlighted the specific problems faced mostly by refugee women.

On 19 September 2016, world leaders agreed to work towards the development of a Global Compact for Safe, Orderly and Regular Migration, to ensure that the particular needs of female migrant workers, and of all women and girls affected by migration are met. On the EU level is also important the EU Qualification Directive, which is applicable a across EU member states as regards refugee determination, specifies that persecution may include gender specific persecution of a sexual nature. As stipulated, gender is a factor to be included in decision making on refugee determination. As stated by Gerard (2014), there are also key tensions between refugee protection and the discourses, policies and practices of the securitization of migration (including women) in Europe. This are including:

Regimes of non-entrée and refugee exclusion

Regimes of non-entrée are state restrictive policies that tactically deploy the border to minimize exposure to asylum seekers (e.g. visa requirements and carrier
sanctions). This also constitutes a critical line of inquiry on the gender impact.

**Warehousing versus durable solutions**

Warehousing are practices, which are disabling them from traveling further, so their lives are on indefinite hold in violation of their basic rights under the 1951 UN Refugee Convention. Warehousing has hender implication on women who are seeking refugee protection and is fostering gender based violence.

**Deterring refugees – diluted or withdrawn rights and entitlements upon reception**

Policies of deterrence aim to restrict socioeconomic rights and dilute legal protection, which has gendered implication.

**The right to non-penalization for illegal entry versus administrative detention**

The administrative detention of asylum seekers is becoming a key plank in securitization of migration in Europe and many detainees are never registered, it also creates a great deal of uncertainty for asylum seekers.

**Disrupting onwards migration and the potential for refoulement – expedited review and the Dublin II Regulation**

Non-refoulement is a concept prohibiting States from returning a refugee or asylum seeker to territories where there is a risk that this person would be threatened on account of race, religion, nationality, membership of a particular social group, or political view. EU member states have in many cases embraced the concept of “safe third country” to expedite asylum claim and asylum seekers to countries through asylum seekers transited. In case of Dublin II Regulation was in research by Bloch (2000) concluded that the regulation disproportionately impact women via the disruption of family reunification.

**Gender aspects**

Some of the feminist theorists have described gender as a constitutive relation in the symbolic construction of the nation state and as a natural form organization of the society, based on sexualized division of women and men roles in the family (Pettman, 1996). Gender approach therefore works with migration, understood from perspective of interrelationship between different social characteristics, such as race, class or nationality. The decision on why to migrate may be based on various factors, but as stated by Jolly, Reeves (2005), its composition and the consequences may be different for men and women. Gender significantly affects the ability of the migrant to achieve self-sufficiency in the new environment. On the one hand, migration can lead to the advancement of women in the target country (e.g. also in the context of their social role in the family). However, it is important to highlight the fact that women are often at all stages of the migration subjects of the degrading treatment and discrimination (e.g. verbal, physical and sexual harassment, low pay, long working hours and so on.). In connection with this are many migrant women unqualified, and it causes more complicated integration and worse employment at the labor market. During migration are family relationships, regardless on the spatial distance, often carried out in conditions of changing societal roles. Due to the migration of men to find work, are women the main
supporters of the family, while the role established by society and community continues to preach them to bear the primary responsibility for the upbringing and emotional security of children. In a study based on interviews with immigrants among women is in many cases described the migration as a way of strengthening the personality that gives them a sense of efficiency, financial independence, or as a way to break free from the patriarchal society. Migration has also an impact on changes in family relationships and transformation of social roles (Świčkowska, 2010).

Differentiation based on gender greatly clarifies many areas of life, such as sexuality, family, education and the labor market that determine the social role, status and prestige. Boyd, Grieco (In: Jolly, Reeves, 2005) consider sex as an important determinant of migrants, which affects the ability of adaptation, links to the country of origin, the possibility of return, successful integration or reintegration of migrant. In the current discourse on migration applies that gender is a crucial variable in the migration and integration process and without gender lenses we cannot sufficiently understand the migration and integration process. The experience of men and women in the context of these processes are so different, that is currently growing the need for specific gender-sensitive integration policies that take into account the different needs of male and female migrants. (Sekulová, Gyárfášová 2009).

Migration is not a gender neutral phenomenon, but experience of migrant women and men differ from the very beginning of their decision to migrate.

Discrimination and gender base violence

Convention on preventing and combating violence against women and domestic violence, known as Istanbul Convention recommends protection of any women in case of gendered violence without discrimination on any ground. This also include protection of migrant and refugee women regardless of their undocumented status and their access to free health, accommodation and legal support. One of the characteristic lines in research in the field of gender studies is according to Świčkowska (2010) to show the different dimensions of women's oppression which results from structural relations of power and domination. If the migrants are members of traditional paternalistic cultures (which are most of the refugees), in terms of their beliefs and social norms they strictly distinguish between male and female roles. Men's are in authoritative position against their wives and daughters, are economically active family members, while social space for women only applies to household.

Kovats et al. (2006) emphasizes the fact that this division of tasks can to women in European cities cause vulnerability and is not addressed fairly in terms of equal opportunities. Moreover, in the above-mentioned families is accepted the use of force as a means to control the behavior of women. They are totally dependent on the men in the household and their only role is to raise children and care for the well-being of men. For this reason, is not placed any importance on the education of girls and women in the family. So sex is in this context also barrier of school attendance. "The emphasis on cultural and biological roles may serve as a justification of women control in their
reproduction, education and employment area. Women who are belonging to minorities are often victims of multiple discrimination based on ethnicity, gender and socioeconomic status "(Kriglerová Gallová et al., 2009, p. 101).

Sekulová, Gyárfášová (2010) describe multiple discrimination as a type of discriminatory behavior in which an individual is discriminated on multiple grounds, respectively if it is possible to classified him/her into several disadvantaged groups at the same time. Apart of gender disadvantages are one of the most severe combination of discrimination ethnicity and social status. Migrant female characterized by reference to ethnic minority, feel all three forms of discrimination in many areas of life – in above mention education, further on the labor market, in access to services, to health care etc. To important finding came Krchová and Víznerová (2008) in the project focused on discrimination of granted refugees in the country. The survey was conducted in 2008 and respondents were refugees themselves. Those on question - whether they had experienced discrimination in their new country, responded negatively. However, during further communication appeared, that they have been in more situations that have discriminatory nature. From these findings occurred, that refugees are often not aware about their rights to decent treatment, respectively some are in a state of resignation, which combined together with the luck of awareness constitutes a space for the discriminatory behavior of the majority. As stated by authors Kečkešová, Ondrušková (2014) in our cultural area is conservatism based, in the question of fundamental values and priorities, mainly on the Christian religious systems.

Świćkowska (2010) highlights the increased risk of sexual harassment, rape or forced prostitution faced by migrant women. Sexual and gender-based violence experience refugee women particularly during the asylum procedure and especially those without the protection of their families (single mothers, housewives and unaccompanied children). Kovats et al. (2006) argues that such violence can commit family members or relatives of harmed women, other refugees staying in the camp, members of staff or security personnel or local residents of the village.

Also, persecution may have gender essence - the subject of sexual and domestic violence, genital damage, forced marriage, trafficking and other reasons. Number of countries with regards to gender nature of migration apply in their asylum systems, provision of social group, which was also recognized by the UNHCR Executive Committee: "Recognized that States, in the exercise of their sovereignty, are free to adopt the interpretation that women asylum-seekers who face harsh or inhuman treatment due to their having transgressed the social mores of the society in which they live may be considered as a “particular social group” within the meaning of Article 1 A(2) of the 1951 United Nations Refugee Convention.” (Kovats et al., 2006, p. 18 ). Experience of violence do not end after the crossing of international borders. Refugee women face violence from a variety of actor’s including State and non-state actors, family members and other involved in facilitating of their migration (Smith 2004). We could point on Hamoods research (2006) in Lybia were women and men were kept separately in
detention centers and women reported being threatened with rape. There is also present evidence to a relationship between gender violence and boarder control. Another important factor is that gender inequality and the level of poverty affects the size of migration.

**Protection and principles of human dignity and equality**

Given the above, it is necessary to draw attention to the opposite page of the multiculturalism to achieve equality between groups and it’s strengthening by recognition of the customs and social norms of individual minorities. The nature of this policy can in fact cause a violation of the individual human rights of women, respectively weaken the autonomy of women within minority groups. Its therefore on place to see the minority policy from outside the box, while applying the principles of human dignity and gender equality (Kriglerová Gallo et al., 2009). UNHCR, the United Nations Population Fund and Women’s refugee commission in 2016 established that women and girls and those travelling alone face high risk of certain forms of violence, including sexual violence by smugglers, criminal groups and individual along the way. There was identified luck of awareness of the authorities and humanitarian organizations about the sexual and gender based violence which affects this group. Reported have been cases on sexual based violence committed by guards in refugee reception and transit centers. Also migrant pregnant women were found in detention centers. There is also luck of and concerns about the adequate reception conditions for women because they often fail to meet minimum standards what can lead to negative impact on their physical safety, health and their dignity. Important aspect of their protection is to ensure that they have access to justice. Many of women can be reluctant to lodge a complaint, there for is important to reach them. Another group of concern are women with disabilities or Roma migrant women. The Parliamentary Assembly of the Council of Europe has recommended that member states take due account of gender-based violence and gender-related persecution in their asylum systems should begin with the collection, analysis and publication of statistics and information on gender based violence in their country. European countries should facilitate safe passage to asylum, foster effective integration into society, improve reception conditions.

**CONCLUSION**

In present time are gender aspects very relevant. In many cases migrant women left economically depressed countries in Africa, Asia, Latin America etc. to secure their children, family or to find jobs and send money back to their families. There need to be stated that many countries’ economies also depend on the labor of women working abroad. Violation of human rights, sexual harassment, undocumented migrant and refugee women – these positions prevent women and young girls from seeking justice or may result in their deportations. All this creates vulnerabilities for migrant women, starting from initial position of disadvantage vulnerability. Discriminatory rules such as included in immigration laws or above mentioned patriarchal practices push
women into physical and sexual abuse, exploitation and bad working conditions, making them invisible and without right to justice. Very important is the policy framework of the state, which would focus on disadvantage and exclusion in all the forms. Enabling environment, with good governance, sustainable social infrastructure and awareness raising are necessary for closing the gender gap between women and men. Important is also to support women in decision making process, which is related to gender based problematic and disseminate good practices. Immigration and emigration policies should enable women as well as men to reach opportunities which regular migration may offer.

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Dr. Pavol KOPINEC, PhD.
prof. PhDr. Monika MAČKINOVÁ, PhD.
Comenius University in Bratislava
Faculty of Education
Department of Social Work
e-mail: mackinova2@uniba.sk
FATS AND THEIR IMPACT ON PHYSICAL CONDITION
AND PERFORMANCE OF CADETS AT THE ARMED FORCES
ACADEMY IN LIPTOVSKÝ MIKULÁŠ

Dušan LITVA

Abstract
This paper is concerned with physical development and performance of students who are
trained and educated to become professional soldiers. The author aims to point to the
students’ performance in the following tested disciplines: the men were tested in the 12-
minute endurance run with the average result of 2,793.0 m and navigation of the obstacle
course according to the Tel-1-1 regulation with the average result of 1:31.7 minute. The
women were tested in the standing long jump with the average length of 183.9 cm and the
1000-metre run, where they reached the average time of 4:08.2 minutes, or the 12-minute run,
where the average distance was 2,412.0 m, depending on fat gain. Excess body fat levels,
which have a negative influence on performance, were as follows: the subcutaneous fat values
were 29.7% in the women and 18.2% among the men and the visceral fat values were 6.5 in
the men and 3.5 among the women. The BMI in the men was 25.1 and in the women 22.1.

Keywords
Fats – subcutaneous fat, visceral fat, body weight, BMI, performance

INTRODUCTION

Good physical condition and functional capacity of the cadets, who are aged between 19 and 23 years and who study different fields at the Armed Forces Academy in Liptovský Mikuláš to become professional soldiers, play an important role in their education and training. One of the factors that have a negative impact on functional and physical capacity is the decreased physical fitness and performance caused by overweight. Even though the cadets can do various physical activities within their regular and fitness programme, the results are not satisfactory.

In our paper, we search for evincible diagnostic procedures through which we can obtain information that points out the current state of physical development, fitness and performance, including potential negative prospects for the cadets and their assignments in the Armed Forces of the Slovak Republic.

METHODOLOGY

Body weight, strength and aerobic skills of the cadets studying at the Armed Forces Academy were measured and assessed in order to gain information on their physical performance. Evaluation of
physical development was focused on anthropometric measurements of body weight and height, which were used to calculate the BMI. The amount of subcutaneous and visceral fat was measured by the standard Tanita BC-545N digital scales. Functional development of the men was assessed by a 12-minute endurance run and navigation through an obstacle course according to the standard (8). The women’s functional development was evaluated by the standing long jump, a 1000-metre run and a 12-minute run.

The ideal body weight was calculated according to the following formula (7): men – body height x 0.71 – 58; women – body height x 0.62 - 49. The data that we obtained were processed by means of basic statistical characteristics: x, s2, modus, median, r. Our study group comprised 42 men and 15 women, who study technical and management fields. Their numbers depend on the requirements imposed by the Minisitry of Defence of the Slovak Republic that are related to postings needed in individual stages of the armed forces development.

**RESULTS**

Table 1 shows the statistical characteristics of physical development in the men: age 21.6 years; body height (cm) 180.6; body weight (kg) 81.1. Table 3 presents the statistical characteristics of physical development in the women: age 20.7 years; body height (cm) 165.7; body weight (kg) 61.8. Ideal body weight for men is 70.22 kg and for women 53.7 kg.

The men’s BMI equalled to 25.1 and the women’s BMI was 22.1. The men’s subcutaneous fat level was 18.2 % and visceral fat level equalled to 6.5. The women’s subcutaneous fat level was 29.7 % and the visceral fat level equalled to 3.5. The results of the 12-minute endurance run were as follows: the men were able to run the distance of 2,793.8 m and the women ran the distance of 2,412.0 m. The men were able to navigate the military obstacle course in average time 1:31.7 min. The women’s standing long jump result was 183.9 cm. The women were able to run the distance of 1,000m in 4:08.2 min. Table 2 shows the correlation matrix for the men. There was a very strong dependence between the visceral and subcutaneous fat levels (0.776). There was also a strong dependence between the visceral fat levels and the body weight (0.556). The study did not prove a significant dependence between the fat levels and endurance activities (12-minute run and the obstacle course) among the men. As far as the women are concerned, there were bigger differences between the fat levels and physical activities. Table 4 shows a very strong dependence between the 12-minute run and the standing long jump (0.703) and the 12-minute run and the 1,000-metre run (0.783). Furthermore, there was a strong dependence between the 1,000-metre run and the subcutaneous fat levels (0.526) and a significant dependence between the subcutaneous fat levels and visceral fat levels (0.402). There was also a significant dependence between the 12-minute run and the subcutaneous fat levels (0.472).
DISCUSSION

We found a statistically significant difference (10.9 kg) between the men’s real weight and the ideal weight. It means that the young men have a tendency toward obesity, which can be proved also by their BMI equal to 25.1, in contrast to the women, whose BMI equals to 22.1. While the women’s level of visceral fat is low (3.5), their subcutaneous fat level is rather high (29.7%), considering the fact that their average age is only 20.7 years. Figure 1 shows the human body with different fat levels. The men’s and women’s performance in aerobic tests was satisfactory, taking their fat levels into consideration. We can assume that the cadets are strongly motivated as they need to fall within certain limits in order to pass a semester. And they manage to do so due to their strong wills.

CONCLUSION

Following the results of testing, we can say that the cadets have different individual levels of physical fitness, condition and performance depending on their body weight.

The data we acquired show that the cadets, who will become professional soldiers, should have completely different
results of their functional development assessment in comparison to ordinary people. These results should help them perform demanding jobs relating to their military specialisations. Furthermore, it is necessary to develop more effective fitness programmes focused on development of physical condition so as to avoid undesirable weight gain. Another thing that could help reduce the cadets’ weight is lifestyle education focused on monitoring and alteration of eating habits.

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* very strong dependence
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Legend: BH – body height, BW – body weight, BMI – body mass index, % fat – subcutaneous fat, Visc. fat – visceral fat – fat that is stored within the abdominal cavity, 12 min – the Cooper 12-minute run, OC – obstacle course according to the TEL-1-1 military regulation.

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CONTACT

Mgr. Dušan LITVA, PhD.
Armed Forces Academy of Milan Rastislav Štefánik
Department of Physical Education and Sports
Demänová 393
03106 Liptovský Mikuláš, Slovakia
e-mail: dusan.litva@aos.sk
WAY TO WELLNESS AND QUALITY OF LIFE

Richard NEUWIRTH

Abstract
The paper presents a description of the structure of wellness services according to its two features. It is a description of groups of activities suitable for the realization of human goals. Stages of the process of change from consideration and initial search to achievement of goal and maintaining a higher quality of life are described. In addition, there are different groups of activities: sport with the main goal of achieving adherence to sport, self-care and relaxation activities with the aim of their regular inclusion into daily life, obtaining and internal acceptance of healthy diet. There is also the goal, resilience and sense of personal freedom. The description of the spiritual path is then completed by a goal that includes the acquisition of personal potential and the ability to successfully play roles in society. The paper was inspired by lectures of Peter Rehor (School of Human Kinetics and Graduate School, University of Victoria, BC, Canada) and of Milada Krejčí (College of PE and Sports, PALESTRA, Prague, Czech Republic).

Keywords
Activity, realization of goals, health, personality potential

1 INTRODUCTION

In industrial world over the next four years, deaths due to chronic diseases are projected to increase by 17 per cent. For example in Canada, out of the projected six million people who will die by 2015, four million will die of a chronic disease - unless urgent action is taken. Given that both physical inactivity and obesity are strong independent causes and predictors of chronic illness and disability, it has been estimated that they impose a significant economic burden on the health-care system in Canada. The most recent research, in the Canadian Health Measures Survey released by Statistics Canada, indicates that only 7.5 per cent of children and 15 per cent of Canadian adults are physically active for at least 150 minutes per week, while 18.7 per cent are obese and 46 per cent are overweight. Chronic diseases develop over one’s lifetime, with clinical symptoms occurring many years after the underlying origins of the disease have occurred. As we move ahead in the 21st century, cardiovascular diseases [i.e., coronary artery disease (CAD) hypertension, stroke, and heart failure], Type 2 diabetes, metabolic syndrome, and cancer are the leading killers in westernized society and are increasing dramatically in developing nations. Recent data from the Centers for Disease Control document that cardiovascular diseases, various forms of cancer, and diabetes combine to make up - 70% of all deaths in the industrial world (Rehor, 2016).

The most dramatic implication for the future of Exercises and Wellness Education...
is that there will be a need for professionals who are knowledgeable regarding holistic health/wellness. Neither the traditional health educators nor the traditional physical educators meet the needs of the future. We cannot any longer afford the luxury of arguing why our specific specialization is more relevant than some other. We must cooperate to redefine our goals and establish our contribution to the future (Rehor, 2015).

In nowadays the term wellness is used as a broader term across different contexts. Current understanding of the phenomena “wellness” is usually in two kinds of meaning: in the “hedonistic meaning” oriented on wellness in understanding of pleasure attainment and pain elimination; and in the “eudemonistic meaning” focused on relating to happiness and well-being on the base of holistic transformation to harmony and balance (Krejčí, Tilinger, Vacek, 2016). Krejčí (2017) focused on clear scientific description and demarcation on background of health support and education to be well, to be active in own health development and in health support of others. This approach is fully consistent with the WHO definition of “Wellness” in the wording: “Wellness is the optimal state of health of individuals and groups. There are two focal concerns: the realisation of the fullest potential of an individual physically, psychologically, socially, spiritually and economically, and the fulfilment of one’s role in the family, community, place of worship, workplace and other settings” (WHO 2000).

As the authors Krejčí, Hošek, (2016) interpreted wellness can be a part of the protection and promotion of health with a tendency to initiate self-education. It contributes to the cultivation of actions and behaviour. The monograph presents findings of long term scientific cooperation of authors regard to the topic “education to wellness” using designs and methods to empower inner motivation and responsibility across all dimensions of health and wellness in historical basic context.

2 OBJECTIVES, RESEARCH QUESTION

The main objective of this article is to analyse and discuss important considerations in the development of wellness life style generally. The next objective is to create a theoretical model of wellness determinants in human life.

Under the objective defined criteria we developed the research question: “How culture and values influence on a strategy to providing answers to the wellness life.

3 METHODS

We used a qualitative research technique “Content analysis” with the distinct approaches: directed and summative (Cavanagh, 1997). The approaches were used to interpret meaning from the content of texts, lectures in a naturalistic paradigm. We delineated the analytic procedures specifically to each determined factor; addressing trustworthiness with hypothetical examples drawn from the area of wellness care.

4 RESULTS AND DISCUSSION

All declared results are presented in the connection to the Figure 1.
Figure 1 Model of potential wellness determinants in human life
4.1. Sport

The point is to achieve better physical fitness and acceptance of sport as one of the frequent leisure activities, important especially where the client has a sedentary job and his job is associated with countless stressful situations, see Figure 1.

Step 1: Intent to Start Practicing. It may originate in mind of prospective client itself, but the role of staff wellness, there is also considerable. The sport type selection is a part of the stages before thinking and thinking, and the wellness worker should be assisted here by advice and enabling the client to try out the sports that are best suited to him.

Step 2: Introductory Exercise, Search. The client begins to learn new sports activities or to restore previously acquired skills. The wellness worker then selects those tasks and exercises in which the client achieves the best results. He also encourages the client to start to find satisfaction in the pursuit of sport and also to feel a joy and enjoyment.

Step 3: Strengthening Exercise Intensity. It is natural and the physical condition is improving. The client goes through phases named above action. The wellness worker should become a guide and guide to the client and create a proactive atmosphere in which the client is more likely to achieve higher performance. But the worker will see to it that they do not lead to overtraining or to excessive exhaustion. This could (in the worst case) lead up to exhaustion, and the client might lose interest in even the overall change in the way he lives.

Step 4: Habit for Regular Exercise. It is characterized by adapting the organism to its regularity and stable performance. It is in the general stage of the achievement phase. The client has already acquired the technical skills needed to running the sport and starting to feel the first positive benefits of sport. The wellness worker has the opportunity to establish the first contacts leading to permanent cooperation. Collaboration client - provider can then have in future positive impact for both the client and the wellness facility.

Step 5: Adherence to Sport. It means personal acceptance of the sport by the client. The client will add his favourite sport to personal life rhythm, sport in his life has a stable place and the client has entered the retention phase. In the best case it also occur permanent cooperation between wellness and client, and he can become a supporter of the sport and the promoter of the sport.

4.2 Health

This path is more of a consequence of efforts to change the overall lifestyle. The phases before thinking and the phases of reasoning are in this case initiated by a deteriorated health condition. The sport, as activity described above, then has on the health of the client's direct influence, see Figure 1.

Step 1: Load and Response of the Organism. At the stage of preparation, the first attempts and the search for sporting activities also take place. Then we see the first load of the organism as his first reactions. It is the reaction of the nervous system, then the hormone-humoral system and then the cardiorespiratory system. However, this area is fully in the competence of sports trainers and their education. In the
event of an excessive load (see the "Load Strength" course), it may occur exhaustion and the consequence may be the loss of the client, considered to be a potential visitor to the establishment.

**Step 2:** Stress, Anti stress and reducing the Body's Response. The stage, called action, occurs in extension exercise, to intensification of its intensity, its more frequent repetition. In a case of an adequately growing stress occurs in the response to stress. The intensity of these stresses and anti-stresses decreases during long-term training and occurs gradual adaptation of the organism.

**Step 3:** Personalize Your Body. At the stage of reaching, it is step by step created adaptation of the body to stress, stress and anti-stress disappears and the body brings a wellness specialist to the exercise activities. It means that the organism responded by changing all three of the above systems and achieved adaptation to all physical and mental levels.

**Step 4:** Accepting a Healthy Lifestyle. In the retention phase it is a matter for the client with his wellness consultant, he managed to harmonize all the activities he has carried out so that their combination is made up of health optimal way of life.

### 4.3 Nourishment and dining

Catering has an irreplaceable role in wellness. Improving the physical and mental state of the personality that is achieved by running other activities could be "devalued" by a poor diet and, for example, too many fats or preservatives and carcinogenic substances contained in dishes may have a negative effect on during the process of total change, see Figure 1.

**Step 1:** Collect Information. Within the phases before consideration and consideration in this area should be a future client to collect information about healthy nutrition, the nutritional value of food, various eating streams, such as vegetarianism, and on the other hand, the range of options for overweight diets. In this phase it should be wellness expert mentor and promoter suggestions, and should be able to present the implications of different dietary habits.

**Step 2:** Tasting and Testing. It coincides with preparation and goes some heads of getting personal taste experiences and expertise, for example, a change in the functioning of the digestive tract. This should also happen eradication of prejudices and myths related, for example, to vegetarianism, and again with the qualified help of an expert.

**Step 3:** Frequent Consumption of a Healthy Diet. Based on the experience it is gained more frequent and especially intentional eating of a healthy diet.

**Step 4:** Customize Your Diet. It corresponds to the stage of achievement. The client himself becomes active and can also inspire his surroundings.

**Step 5:** Habit for Healthy Diet. Healthy food becomes a common part of life. In the phase of retention it is desirable to use the client's potential and experience in the context of the establishment wellness. However, it is necessary for the client to have premises of such a relationship that allows the organization of common actions in customer clubs centred on wellness.
4.4 Relaxation

Relaxation belongs to activities that may be more or less passive. In the pre-reflection and reasoning phase, information is collected about the client's acceptable "passive" financial difficulty, see Figure 1.

Step 1: Collect Information. Phase of thinking. At present there are plenty of relaxation options available. Many establishments dealing with accommodation, and sometimes also leisure, have the term wellness. Here it is the question of the right to include the term wellness in the name of the establishments and to indicate their subject of activity. There is a risk that the client will buy the products, called wellness services, and consequently, the establishment will manifest itself as a mere provider of massive and only passive relaxation activities. However, the impersonal character of such establishments has nothing to do with providing wellness services. It is up to the experts to their prospective clients warned of the danger and tried to be helpful advice and knowledge of conditions necessary for the correct selection of the company, providing relaxing activities.

Step 2: Consulting with physicians, procedure of rehabilitation. In the preparation phase, the client should find out what his / her state of health is and on the basis of this he / she chooses the intensity and expiration time of the purchased relaxation services. It is advisable for the client to be able to disclose to the practitioner any contraindications such as the provision of some types of massage,

Step 3: Massage, Styling, Water Treatments and Relaxation. They fall into the action phase. The client finds not only passive satisfaction with consumption, but also physical rehabilitation after completed sports activities. Here is the task of the expert to the amount consumed services match the previous physical burden as well, and the overall health of the client. Furthermore, the expert is obliged to oversee compliance with technical and safety conditions for the operation of individual health care facilities. For example, the times spent in the hot tub or solarium. There is danger here, similarly as in the case of excessive physical load, exhaustion, namely fatigue to "disgust". This situation is predominantly in the hands of the client, but the wellness expert should have enough erudition and the possibility to prevent such fatigue and excitement of certain relaxation activities.

Step 4: Sleep, Physical Relief. They fall into the stage of achievement. The client experiences the positive consequences of adequate relaxation and is professionally educated in the course of each type of activity with their health consequences. For example, regular and good quality sleep, as one of them forms of relaxation.

Step 5: Inclusion in Life, Enlightenment, Beauty. It corresponds to the retention phase and the client starts relaxing regularly and mainly focused on his / her life, in better case and into the life of their family. Here it is an example of how change in personal life can have positive consequences even for the client's immediate surroundings. This aspect is valid in all the routes described above.

4.5 Psychics

The penultimate way is the path of psychological development. Activities, however, in this area is rather situated on
specialized experts from ranks of health professionals and psychologists. But in the case of wellness it is rather a set of consequences of the operation of all previous activities that affect the particular mental state of the personality. Among other things, it is the fact that wellness cannot be composed only of unilateral focus of the client that the field is quite complex, see Figure 1.

**Step 1: Uncertainty, or Deprivation.** It falls into the phase of reasoning and it is the result of a man's unhappy situation. It's also one of the reasons why the prospective client is looking for, gathers information, and where he has the opportunity to meet with a wellness expert can be inspired by future activities.

**Step 2: Enjoying Your Joy.** It comes here the first pleasant experience in implementing selected activities. The client may for the first time forget his / her difficulties and "ubiquitous stress" for a short time. It comes to pleasure of usefulness, which is again an opportunity for a wellness expert who can invite the client here in its further progress in achieving a higher quality of life. It is also about building the idea of the client's future cooperation establishment. Under the term cooperation it is meant the relationship between the provider and the recipient of the service he has in the context of market transactions, the positive consequences for both parties, regardless of the financial evaluation of the acquired utility values.

**Step 3: Pleasure of Usefulness.** It does not happen within the action phase. It comes to the persistence of other activities on human personality. After a period of instability occur feelings of well-being that are conditioned by repeatedly engaging in selected activities. Here it is necessary to mention the fact that empathy, as a component of the personality of wellness expert, is one of very necessary prerequisites for successful cooperation between the client and the wellness facility, providing quality services.

**Step 4: Endurance, Psychological Resistance.** It corresponds to the stage of achievement. For example, when meeting with stress, the client resists this situation. Its resilience is no longer only short-lived and forced by circumstances but results from his already satisfactory mental state. In order for the service provider to take advantage of this situation for the benefit of his / her client, it is certainly necessary to have a professional psychological erudition of wellness professionals. In any potential cooperation (see above), the client can be used as a connecting interface between party service providers and those clients coming in wellness establishment in contact with this individual.

**Step 5: Personal Freedom and Independence.** At the retention stage, such client status is ideal. Within this state it can already decide on its own, and its decision to respect and appreciate them. He can become as important personalities in the collective, as well as a respected individual meters, radiating peace and on the road so much expected PODs.

### 2.6. Culture

The result of combining multiple paths and within them the achievement of the retention phase occurs ideally the cultural changes of personality. The term culture of personality refers to the overall spiritual state in which the client is located. It is a frequent experience of positive
feelings and moods, the result of which is the target state of personality, called wellness, see Figure 1.

Step 1: Finding Opportunities, Inspiration and Understanding. At the stage before thinking and reasoning occurs realizing their own "unhappy", troublesome and difficult to solve situations in areas of total satisfaction, fulfilment of the meaning of life, and for example feelings of loneliness and unnecessary. Inspiring and invoking specific interest is the first indication of possible changes to the client's direction. From this again it leads to a reference to psychological erudition and a requirement for empathy and understanding of the client's wellness by a specialist.

Step 2: Ideas, Patterns, and Beginning of Communication. This situation corresponds to the preparation stage, in which the client is consciously choosing the activities that are closest to him and most correspond to his / her nature. On the one hand, it is still a way of searching, on the other hand, it can also be a finding of affection or a relation to a particular spiritual area, shared by social groups such as visits to cultural and social events, various hobbies, the element of self-realization, collective sharing of the atmosphere in within the joint actions of mysterious or religious context, or educational action. This can happen here as well case of relaxation, step 3, fatigue. It is the skill that leads the client to determine the proper form and frequency. The amount and type of activity begins to determine the client itself. It is ideal to organize social events organized either in wellness facilities, in the case of the creation of client clubs outside these establishments, at the wellness centre of the secured venues.

Step 3: Consultations, Joint Actions, Interviews and Training. At the stage of the action, the client will initially be a passive consumer, later he can become an active contributor to activities of specifically targeted groups. If this area of wellness offers here yet underused options that help one to establishments self-profiling. This then impedes the positive differentiation of the traffic from the competitors. There is also the possibility of separating the wellness sector as such from the offer, which aims only to sell services, not to realize the "real" intentions and goals of the wellness field.

Step 4: Understanding, Adoption, Insight. It corresponds to the stage of achievement. The client has a high level of professional education in the area if becomes a promoter of what he has in his mind and feelings.

Step 5: Belief, Trust, Knowledge, Faith, Empathy. In the retention phase, the client is in charge of the overall attitude of fulfilling the state, which brings him mental and above all spiritual stability, characterized by mature and balanced personalities.

DISCUSSION

General model of change

It is the total transformation of the personality of man. Thus, it is obvious that a part of the concept is a way or so successive stages of achieving a higher quality of life.

The initial state, given by the current unfavourable situation, is characterized by
poor physical and mental condition, eventual illness, experiencing stress, bad moods and potential frustration. This state may not always be the burden of the above, but the consequence of it may be the phase called pre-contemplation.

In the presented general model of change we can discuss follow main wellness determinants. Within the phase before considering it is a situation where the individual does not feel well and begins to feel the need for change. Individual is looking, dreaming, thinking. If in this time he will be in contact with wellness specialists, the most suitable moment to go presentation of the field, its possibilities and benefits. At this stage it is necessary to ascertain as much information as possible about the future client in order to be able to decide and use the client's potential as a source of motivation leading to a change in lifestyle. These motivational resources are in the paper termed a result, social standards, and rational reasoning, see Figure 1.

- Faith in result: It is not just about faith in the religious word of meaning, but of trust based on the value systems of different cultures and thought directions.
- Social standards: This case can be used as a motivational element of cultural tradition, social patterns and family patterns, which include the habit of regular sports (public tours and bike cycling in families, etc.).
- Rational Thought: This is a source that is fully in the competence of the wellness expert. It is persuasion, explanation and discussion on the theme of lifestyle change. The willingness to change the way of life then arises on the basis of the logical thinking and knowledge of the future client.

The next stage is Consideration. That includes collecting information, selecting specific activities, and accepting ideas the area and activities. In this stage is for an expert to select appropriate activities for the client, and to present the results achieved by other customers. Once again, it is necessary to present wellness area with respect to the selected source of acceleration of thoughtful change For example, using rational thinking to present measurable changes that other clients have achieved.

Phase Preparation of self-paced search for specific activities. In the area of sports will be a selection of appropriate exercises or specific sports that will help the client to achieve change. We also include the purchase of appropriate equipment and the creation of concomitant conditions, such as timetable, implementation into the day mode of the client, etc. It is necessary to familiarize the client with obstacles to lifestyle change. For example, the exercise will come a period of success and well-being, but also the clients may find themselves in a situation in which he loses interest in activity, when he or she will be trained, when the mental content of the activity is thawed. It should be pointed out that such moments must be overcome by the client and that the client is also in these moments are sufficiently motivated.

Phase of Action is a real beginning under the guidance of coaches. Coaches and wellness instructors in this time they take a professional or a wellness part of their responsibility to prove their client to the intended goal. On-site support it is also available praising and pointing to the first
achievements achieved. The "guides" on the way of change will point to achieving the first set goals. Those (in the previous stage) policy goals should have a dual character: First objective skill, we can say the quality and "countable é" objective, quantitative. The dual nature of the goals is to ensure their easy comprehension, a variety of activities, and easier to understand and understand by the client.

The stage of Achieving is a stage in which a client reaches predetermined goals and is experiencing new life habits. These habits are then implemented into his or her normal life and give the opportunity to collect the benefits of a new lifestyle. In this stage is appropriate with client to establish a relationship that will allow long-term cooperation between the wellness services provider and the consumer of the service. The aim of such cooperation is, for example, the creation of client groups and the sale of services to whole groups of "co-workers" clients.

The stage of Holding should, as a final stage, ensure that the client's personality status, in which he is able to use all the positive consequences of active to your own life. The client, not the customer, is then able, within the meaning of wellness definition (WHO 2000), to use his newly acquired potential in physical, psychological, social, economic and moral, and is also able to play roles in family environment, community, employment and in society.

5 CONCLUSIONS

On the base of presented analyses and syntheses and on provided deduction, we can conclude to the shown theoretical model how to realise benefits of wellness:

The result of achieving sustain phase, in which the client received through the completion of several roads, leading to a change in life is to gain potential and capacity to play a vital role. In terms of the definition of WG 2000, it is a potential physical, psychological, social, economic, and due to the culture of its personality and the potential of morality. This potential will enable the client's personality play vital roles in the family community, workplace and society. The result is a full-fledged life experience in terms of basic fulfilment of the mission and goals of the wellness field.

Very important is to express paths or groups of activities that create the ambience of wellness. In a system of wellness are designed "paths", groups of individual activities that in their combination lead to achieve a higher quality of life. It is important to note that only one group of activities cannot help the client in making life changes. It is necessary to keep in mind that the personality of a person consists of many levels and a change in personality as the system may only be changed - if more components of personality as such. The role of wellness workers is then the choice of a combination of paths that in utmost level satisfy specific client and his life situation and also to the stage of its life cycle.

6 REFERENCES


7 CONTACTS

Ing. Richard NEUWIRTH, PhD.
College of PE and Sport Palestra
Slovačikova 400/1
197 00 Praha 19 - Kbely
Czech Republic
E-mail: neuwirth@palestra.cz
YOGA-TOURISM AS A PERSPECTIVE DIRECTION ON
THE HEALTH TOURISM MARKET OF RUSSIA

Marina V. MALYGINA

Abstract

The process of urbanization is currently growing in connection with the increasing share of technology influence on the life of modern man. The number of stressful situations increases. One of the ways out is yoga-tourism. This paper presents the socio-demographic and motivational characteristics of yoga tourists, evidence that the level of enthusiasm for yoga, the state of physical health, and mental well-being depends on the development of yoga tourism. The received data bear practical significance for tour operators and development of the tourist market. This study provides the basis for future research on yoga-tourism.

Keywords

Yoga, yoga-tourism, health, health tourism.

1 INTRODUCTION

Despite the growing popularity in recent years, yoga can hardly be called a modern phenomenon. It is the basis of ancient Indian culture and has been practiced for more than 5000 thousand years. As an activity, yoga has become one of the fastest growing occupations. It is not a religion and is intended for individual growth of physical, emotional, intellectual indices. The stress and stress of a modern urban citizen led to a search for a more holistic approach to existence. Yoga is one of the responses of a person to a fast-paced lifestyle (Havitz, Dimanche, 2007).

Yoga-tourism is a relatively new concept in the world, scientific research in this area is at an early stage in Russia. The lack of information made the development of this market very difficult. There is a need for a scientific justification for yoga tourism in Russian studies (Baloglu, McCleary, 1999). Ivanova (2014) states that majority of people practicing yoga in Russia believe that yoga started its way in Russia with opening of modern clubs or popular fitness centres, and have no idea that there was, for example, the Yoga Association of the USSR. Yoga was spreading in the Russian Empire and the USSR until the 1970s, when all the oriental practices were banned in the Soviet Union. However, in spite of that thousands of
people in different regions of the country went on practicing yoga, and yogic life brimmed with a variety of events. Russian people were interested in yoga even before the revolution of 1917. In the Soviet era it was not safe to practice yoga because it was ideologically forbidden, but nevertheless there were enthusiasts who learned and mastered yogic techniques with the help of few remaining books and samizdat (underground press) copies. For example Boris Leonidovich Smirnov (1891 — 1967) was a well-known doctor and an expert in foreign languages. As a youth he was fond of oriental philosophy. After giving a lecture on thought transfer in Kiev in 1930 he was exiled for a few years to Yoshkar Ola. In the evening of his life, when seriously ill and resigned, he translated Mahabharata into Russian. The quality of his translation is highly appreciated by experts around world.

The development of tourism is accompanied by a variety of ways to motivate the tourist and competition among similar products. Traveling for better health has long been a motive for travel. Early forms of health tourism go back to 2000 thousand years BC. e. In India, Greece and Persia, there were physicians trained in therapeutic values. Mineral baths and spa centers in England, Baden-Baden and Vichy were the most famous places and remain popular now. We witnessed the revival of health tourism as a result of physical, moral and spiritual damage caused by the modern way of life. Escape from the urban environment has become one of the main motivating forces in the field of tourism. The tourism industry stands for a healthy, holistic kind of recreation. Health tourism is historically present in the tourist sphere (Lehto, , Brown, Chen, Morrison, 2006).

Yoga takes a significant place in public life. Yoga tourism is considered as a subcategory of health tourism, as they share the common functional characteristics of tourist motivations and social values that enhance the quality of life of an individual and include outdoor activities. Good state of health depends on the physical and mental state. Wellness elements include exercise, proper nutrition, the use of vitamins. Moreover, today's consumer wants to look and feel better, reduce weight, slow the aging process, relieve pain and discomfort, cope with stress, or take part in using natural supplements (vitamins and minerals to improve health). These elements are the main factors of health tourism, motivating yoga tourists. In addition, yoga-tourism has oriental medicinal practices (Smith, Puczkó, 2009).

2 OBJECTIVES, RESEARCH QUESTION

The main objective of the presented study was to analyse the socio-demographic and motivational characteristics of yoga tourist. The next objective was to analyse motivation aspects of individuals travelling in frame of yoga tourism.

The main research question is formulated: “Is it evidence that the level of enthusiasm for yoga, the state of physical health, and mental well-being depends on the development of yoga tourism?.
3 METHODS

From the point of view of methodology we choose the tool of the Investigation Pentagram to solve the phenomena yoga and tourism. In concrete we used methods of analysis, synthesis, induction and deduction and applied anchored theory method, as well as causal and operational thinking. Continuously in the process of solving the project, the authors took into account the hysteresis, where the study of social phenomena emphasizes the importance of historical contexts for the study of current phenomena and their prediction in the future.

The relevance of research question of the presented study was analysed as the main distinctive point between deductive and inductive approaches. We provided a deductive approach test of the validity of assumptions in the context of the research question, whereas inductive approach contributed to the predictions and generalizations for Russian milieu.

5 RESULTS AND DISCUSSION

Based on studies conducted by the Moscow University of Yoga, we found out that most yoga tourists are women aged 40-45 with incomes above the average. As a rule, for yoga trips, the choice falls either to places that are near the house, or to coastal countries with a warm climate. Important motivation is considered for employment (Aggarwal, Guglani, Goel, 2008). Practitioners of yoga note that yoga brings them spirituality, physical and mental health, as well as emotional balance. People feel the joy of cooperating with people who share similar interests. Yoga-travel can reduce pain and have a calming effect on the participants. Such trips seem incredibly useful. Busy working people perceive them as contributing to a balanced life. Yoga tourism depicts the phenomenon most similar to health tourism (Chopra, Simon, 2004).

Programs in the field of health and health tourism serve to help people maintain a sense of well-being, to find meaning and purpose in life, combining health and well-being through travel. This can also be achieved with the help of yoga tourism programs.

Yoga-tourists are mostly physically healthy, which can be attributed to the merits of their regular practice. Many people turn to yoga in search of inner peace or, at least, calmness. But often this is not enough, and more and more practitioners want to spend the long-awaited vacation doing yoga to deal with the consequences of a sixty-hour work week and chronic multi-tasking. The main advantage of yoga tourism is the ability to communicate with people with similar interests and mutual support. As for the destination for trips, yoga-tourists are happy to visit a sunny place, ideally with a beach or a pond nearby. This is of great importance for tour operators serving and oriented to this direction in the market (Dixit, 2005).

Like fitness centres, many hotels and resorts cannot do without yoga. Yoga classes appeared in Hyatts and Marriotts. In the "Kimpton" mats and belts for yoga are available for guests who ask them. Resorts began to make their own programs, to conduct weekly yoga retreats. Now that yoga has become so popular, hotels are looking for new ways to include it in their
list of services and cause interest in the guests. People want to be able to relieve stress (Gelter, 2008).

According to the leading Russian research company TNS Russia, in the second half of 2014, 1.37 million of the adult urban population of Russia were engaged in yoga. This is a fairly large audience of consumers, which could serve as a basis for the development of yoga tourism in Russia. The age of practitioners in Russia: 54% - from 16 to 34; 32% - from 35 to 54 years; 14% are over 55. 84% of practitioners are women with average income or higher than average income. The greatest demand for yoga tours is available in Moscow. The resources of the Krasnodar Territory and the Republic of Crimea are excellent for holding such tours. At the Russian Black Sea resorts there are those values that motivate yoga tourists: a warm climate, a lot of sunny days, the presence of the sea and mountains. The development of health tourism is an important component of the social policy of the state, ensuring the implementation of humanistic ideals, values and norms that open wide scope for revealing people's abilities, satisfaction of their interests and needs, and strengthening human potential.

5 CONCLUSIONS

The Russian Federation has all the necessary resources for the development of this type of tourism, which we must use to improve the quality of life of Russians. As it is declared in the Russian websites of Yoga Tourism (https://www.foto-rossiya.ru/en/Yoga-tourism) many people have started to think about what to start yoga, what is the benefit of this sport, how to translate the idea into reality. Main motivation aspects yoga tourism create health benefits of yoga, especially impact of yoga on the body as flexibility improvement, what helps to develop psychic and social abilities and achieve great results. Thanks trained body and spirit, human immunity is also developed and prevention of civilization disease as well, for example positive results were analysed in people suffered from arthritis, back pain, metabolism problems. Yoga tourism promotes strength and flexibility and all together improve body posture, physical and psychic condition. For yoga tourism is typical to take place away from the bustle, noise, closer to the wild, clean waters and pleasant sounds of nature, fresh air, where each participant gets in the end a balanced state of mind, a change of everyday environment and good rest. Thus, in conclusion we want to note that yoga-tourism is one of the most promising directions for increasing the level of health of the population of Russia.

6 REFERENCES


