

Psychomotor Therapy

and Physical Self-Concept

**Tereza Louková, Běla Hátlová,
Milena Adámková Ségard (Eds.)**

JAN EVANGELISTA PURKYNĚ UNIVERSITY IN ÚSTÍ NAD LABEM

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Editors: Tereza Louková, Běla Hátlová, Milena Adámková Ségard
J. E. Purkyně University in Ústí nad Labem, Department of Psychology,
Ústí nad Labem, Czech Republic
tereza.loukova@ujep.cz, belahatlova@centrum.cz, milena.adse@psycholog.be

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AUTHORS (in alphabetical order)

Mgr. Milena Adámková Ségard, Ph.D.



- Ph.D Rehabilitation Sciences and Physiotherapy (KU Leuven) and Kinanthropology (Charles University).
- University J. E. Purkyně in Ústí nad Labem, Faculty of Education, Department of Psychology, Czech Republic: lecturer.
- Specialized in Health Psychology, Sports Psychology and Clinical Health Psychology.
- She build upon the work of prof. B. Hátlová.
- E-mail: milena.adse@psycholog.be

PhDr. Martin Dlabal, Ph.D.



- Ph.D. in Clinical Psychology (Charles University in Prague)
- Department of Psychology, Faculty of Education Jan Evangelista Purkyně Ústí nad Labem.
- Registered Clinical Psychologist at the National Center, attestation in clinical psychotherapy.
- He deals with psychological counseling and psychotherapy.
- E-mail: dlabal.martin@seznam.cz

Mgr. Kateřina Farová Gilová



- Physiotherapist in Jedlička Institution and two years in the Hospital of Medical Education Centre for mentally disabled in the Federal Republic of Germany.
- Mgr. – Faculty of Physical Education and Sport at Charles University in Prague, program of Physical and Work Education of Health Disabled.
- Since 2010 – Psychomotor therapist in PN Bohnice.
- She deals with rehabilitation programs in supportive treatment of patients with all types of psychiatric disorders.
- E-mail: katerina.farova@bohnice.cz

Prof. Dr. Ludmila Fialová, Ph.D.



- She works at the Department of Education, Psychology and Didactics at the Faculty of Physical Education and Sport at Charles University in Prague.
- For many years she examined body image as part of human self-approach. Her research is summarized in the monograph “The conception of own body – health, fitness, appearance”.
- She was awarded as „Woman of Month“ in Czech science.
- She is a member of the Scientific Council of FTVS UK Prague, PF UJEP Ústí nad Labem.
- She also works as the chief editor of the scientific reviewed journal Czech kinanthropology.
- E-mail: fialova@ftvs.cuni.cz

Doc. PhDr. Běla Hátlová, PhD.



- PhD Kinanthropology, Clinical health psychology, associate professor.
- University J. E. Purkyně in Ústí nad Labem, Faculty of Education, Department of Psychology: professor, Czech Republic. Charles University, Prague, Faculty of Physical Education and Sports. professor.
- She is specialized in Sport Psychology and Clinical Health Psychology. She established and developed with her students the use of psycho-motor therapy in psychiatric care.
- E-mail: belahatlova@centrum.cz

PhDr. Eva Chalupová (Tomešová), Ph.D.



- Assistant Professor at the Department of Psychology at FTVS UK in Prague.
- Mgr. – Kinanthropology FTVS UK Prague + Clinical psychology at the Faculty of Philosophy UK Prague.
- Research focus: Transcultural validation of questionnaire methods, psych diagnostics in sport, applied sport psychology.
- E-mail: eva.chalupova@pragusharks.com

PhDr. Hana Kynštová, Ph.D.



- Graduated from Social Science at the University J. E. Purkyně in Usti nad Labem and Social Science at the University of Hradec Kralove.
- Completes the study of Ph.D. focusing on psychomotor therapy in diagnosis schizophrenia with a focus on rehabilitation under the direction of B. Hatlova.
- She works at the department of physiotherapy and occupational therapy, Faculty of Health Studies UJEP in Usti nad Labem
- E-mail: hana.kynstova@ujep.cz

Mgr. Tereza Louková, Ph.D.



- Graduated from Specialization Psychology – Physical Education in the Faculty of P. E. and Sport, Charles University in Prague;
- Ph.D. study of Social Psychology on the Faculty of Social Science Masaryk University in Brno.
- Since September 2008 she works at the Department of Psychology, Faculty of Education in Usti nad Labem and she focuses on psychology of sport, health psychology and psychomotricity
- E-mail: tereza.loukova@ujep.cz

Wioletta Lubkowska, Ph.D.



- Lecturer at the Faculty of Physical Education and Health Promotion, University of Szczecin, who has cooperated with the University since 1994.
- Expert on corrective gymnastics and health education, class 2 swimming trainer, teacher.
- Received a Ph.D. degree in physical culture from the Gdansk University of Physical Education and Sport with a doctoral thesis entitled 'Assessment of physiological spine curvature and its practical significance in school-based physical education'.
- Corrective swimming trainer with 20 years of experience. Interested mainly in the issue of physiological spinal curvature, effectiveness of bad posture/scoliosis treatment through corrective/curative swimming, aquatic physical activity, as well as pedagogical activity in the field of health.
- Authored and co-authored 71 articles on physical culture, published both in Poland and abroad.
- E-mail: wioletta.lubkowska@univ.szczecin.pl

Valentina Moro, Ph.D.



- Assistant professor in the Department of Philosophy, Education and Psychology at the University of Verona in Italy
- 2004 – Ph.D. in Psychology and Psychiatry (study of the neural basis of cerebral plasticity and its implications in the rehabilitation of patients affected by stroke or traumatic brain injury)
- Subsequently, her research issues have extended to the biological correlates of body and face visual perception and action discrimination and to their specific disorders after central and peripheral neurological lesion. In rehabilitation, her research aims to investigate awareness of pathology and the potential for recovery in various different clinical conditions in an interdisciplinary perspective.

E-mail: valentina.moro@univr.it

Mgr. Miroslava Papajiková



- Student Mgr. of subject ANDRAGOGY AND PERSONNEL MANAGEMENT at FF UK in Prague.
- Graduate Mgr. in subject POLITICAL SCIENCE at FSV UK in Prague.
- Graduate of an annual accredited training program MINDFUL BODY – LABAN'S MOVEMENT ANALYSIS/BATERNIEFF FUNDAMENTALS
- When studying andragogy she continues to educate in psychology, personal development, psychotherapy, and psychomotor.
- Lecturer of motion classes, dancer and personal development consultant.
- She gains her experience with dancing and conscious movement at lessons and seminars of Czech and foreign lecturers.

E-mail: mirka.papajikova@seznam.cz

Prof. Michel Probst, Ph.D.



- Graduate of rehabilitation sciences and physiotherapy at KU Leuven, a graduate of post-graduate studies of “Psychomotor Therapy” and “Relaxation Therapy” at the KU Leuven (Belgium).
- Since 1979 he has been acting at the Katholieke Universiteit Leuven in Belgium at the Department of Rehabilitation Sciences and Physiotherapy, where he has been the head of the department since 2006.
- He specializes in eating disorders.
- President of the Psychomotor Therapy Company: International Rehabilitation Council in Psychiatry.
- Member of the Committee for Science and Research of European Forum of Psychomotricity.

E-mail: michel.probst@faber.kuleuven.be

PhDr. Daniela Stackeová, Ph.D.



- She works as an assistant professor at the Department of Physiotherapy FTVS UK in Prague.
- 1997 – Mgr. stadium of Physiotherapy with Specialization on Somatopsychotherapy FTVS UK Prague
- 2002 Ph.D. in Kinanthropology at FTVS UK in Prague, Department of PPD supervisor of prof. Dr. V. Hosek, The topic of dissertation: Influence of fitness exercise at psychological condition – possibility to be aimed.
- Scientific – pedagogical activity carried out in the field of sports psychology and physiotherapy, focusing on psychosomatics of movement system, psychosomatic in physiotherapy, psychological benefits of physical activity.

E-mail: stackeova@volny.cz

Mirosława Szark-Eckardt, Ph.D.



- Master of Arts in Pedagogy and Physical Education.
 - Doctor of Philosophy in Cultural Physical Studies.
 - Currently, Pro-dean at the Faculty of Physical Education, Health and Tourism.
 - Teaches special physical education and physical education teaching.
 - Has been involved in the problems concerning healthy attitudes of children and youth, especially individuals with disabilities as well as the issues of contemporary transformations of school education.
 - Author of ninety academic articles and four non-serial publications in the field of physical education and recreation.
- E-mail: szark@ukw.edu.pl

Davy Vancampfort, Ph.D.



- Davy Vancampfort, is psychomotor therapist at the UPC KU Leuven, campus Kortenberg and scientific collaborator at the KU Leuven, Departement Rehabilitation Sciences. He is chair of the International Organization of Physical Therapy in Mental health interest group on schizophrenia.
- E-mail: davy.vancampfort@uc-kortenberg.be

PhDr. Iva Wedlichová, Ph.D.



- Head of the department of Psychology at the Faculty of education Univerzity J. E. Purkyně in Ústí nad Labem;
 - Specialization in Onto-genetic and Pedagogic psychology.
- E-mail: iva.wedlichova@ujep.cz

Hanna Żukowska, Ph.D.



- Master of Physical Education.
 - Doctorate in the field of physical education.
 - Currently, the vice director of the Institute of Physical Culture at the University of Bydgoszcz.
 - She teaches handball and courses related to corrective gymnastics.
 - In the circle of scientific interests are issues of healthrelated behaviors of children and young people and their physical development and posture.
 - The author of 50 articles and co-editor of four compact publication.s
- E-mail: zukowska@ukw.edu.pl

CONTENT

Theoretical background of physical self-concept

PHYSICAL SELF-CONCEPT IN THE CONTEXT OF MOVEMENT THERAPY 13

*Doc. PhDr. Běla Hátlová, Ph.D., Mgr. Tereza Louková, Ph.D.,
PhDr. Iva Wedlichová, Ph.D. & Mgr. Milena Adámková Ségard, Ph.D.*

PHYSICAL SELF IN THE CONTEXT OF PSYCHOSOMATICS 29

PhDr. Daniela Stackeová, Ph.D.

BODY REPRESENTATIONS AND BODY AWARENESS. THE CONTRIBUTION OF COGNITIVE NEUROSCIENCE 43

Valentina Moro, Ph.D.

PERSONAL SATISFACTION, PHYSIOCAL SELF AND HEALTH RELATED BEHAVIOR FROM THE ASPECT OF INVOLVEMENT IN SPORTS IN ADULT POPULATION 55

Prof. Dr. Ludmila Fialová, Ph.D.

THE PHYSICAL SELF-PERCEPTION PROFILE AS AN EFFICIENCY MEASUREMENT TOOL OF PSYCHOMOTOR THERAPY 67

PhDr. Eva Chalupová (Tomešová), Ph.D.

Exercise efficiency

PSYCHOMOTOR THERAPISTS SHOULD TAKE INTO ACCOUNT THE PHYSICAL SELF-PERCEPTION OF PEOPLE WITH SCHIZOPHRENIA WHEN PRESCRIBING PHYSICAL ACTIVITY 73

Davy Vancampfort, Ph.D., Prof. Michel Probst, Ph.D.

THE EFFECT OF PHYSICAL ACTIVITY AND AN INTEGRATIVE PSYCHOMOTOR PROGRAM ON PHYSICAL FITNESS AND MENTAL SATISFACTION 83

PhDr. Martin Dlabal, Ph.D.

PSYCHOMOTOR THERAPY AS A SUPPORTIVE FORM OF SELF-CONCEPT CREATION	89
<i>Doc. PhDr. Běla Hátlová, PhD., Mgr. Milena Adámková Ségard, Ph.D. & PhDr. Hana Kynštová, Ph.D.</i>	
DANCE LESSONS AND THEIR IMPACT ON SOCIAL PHOBIA CLIENTS	93
<i>Mgr. Miroslava Papajiková</i>	
PHYSICAL SELF-PERCEPTION OF MENTALLY ILL PERSONS	101
<i>Doc. PhDr. Běla Hátlová, PhD., Mgr. Kateřina Fárová Gilová</i>	
THE APPLICATION OF THE HALLIWICK CONCEPT IN THERAPEUTIC AND CORRECTIVE SWIMMING	109
<i>Wioletta Lubkowska, Ph.D., Miroslawa Szark-Eckardt, Ph.D., Hanna Żukowska, Ph.D.</i>	

FOREWORD

The original mission of human civilization was enabling and ensuring the development of mankind in its holistically conceived existence. The human civilization has been growing on the principles of individualism since the late Middle Ages. Its essential ethics is the ethics of the autonomy of an individual. Contemporary Western culture exerts great pressure toward consumer orientation of society, favoring values associated with possession “to have” over appreciation of the development of the self “to be” (Macková, 2004). This pressure is also reflected in the relationship to one’s own body and its parts, as if it were more of an external presentation than a part of human being.

Sociological findings draw attention to the building dissatisfaction with the supply of multitude of products and services complicating orientation and arousing the want to get and exploit all of these to make oneself happy. As a result of this pressure, the decline in self-esteem is not accidental, including impaired relationship to one’s own body, reflected in the increase in psychosomatic and mental problems, precursors to psychic disorders and illnesses. Low self-esteem is associated with a greater risk of mental health problems. The research results show that self-esteem is generally most strongly linked to the perceived competence in areas which people consider to be important.”(Lindwall et al., 2011). This book deals with the studies about relationship between self-esteem, physical self-concept and physical activity. The first part includes chapters about theoretical background of physical self-concept and in the second part we can find studies about practical exercises and their efficacy.

We hope this book can be for readers good inspiration in the field of psychomotor therapy and physical self-concept.

Editors Tereza Louková, Běla Hátlová a Milena Adámková Ségard

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PHYSICAL SELF-CONCEPT IN THE CONTEXT OF MOVEMENT THERAPY

Běla Hátlová, Tereza Louková, Iva Wedlichová & Milena Adámková Ségard

A good overall appearance and physique are valued in Western culture and are largely taken as necessary in order to assert oneself. However, this is a relatively recent phenomenon and is linked with good self perception (self-esteem) of an individual.

Character development, personal growth, and development of self-constructs are commonly valued goals in Western society, and are largely taken for granted as desirable. However, this is a relatively recent phenomenon, linked with a healthy self perception (self-esteem) of an individual.

This mindset and evaluation of a human being has its historical roots. Western culture was built on the philosophy of the ancient pre-Christian Greece, where the philosophy of the East was well-known. The Orient proceeds from the idea of interconnection between the natural order and human life. Knowing oneself is only possible in complex physical, psychical and spiritual coexistence with the outside world, including the universe. Self-knowledge stipulates the care of one's body, whose health is a prerequisite for further overall development. Experiencing one's own body and its functions as a basic degree of self-awareness in Hatha Yoga serves as an example. Body control allows conscious correction, focusing on the essential and renunciation of the non-essential desires.

The philosophers of ancient Greece, in accordance with the philosophies of the East demonstrate the need for self-awareness as a constituent of this world and the whole of universe. Kalokagathia stems from the culture of seeking harmony, perfection and beauty of the body and movement. The shift from the calocagathia ideal is already evident in the ancient Greek athletics, which made men combat ready and focused on performance and competition. Its objective was the development of the necessary combat capabilities regardless of the integrity of a man in his physical, mental, social and spiritual unity.

The first mention of the self in the form of thinking about the mental self dates back to the 17th century. The term is occurs in Western philosophical schools. Descartes, Locke and Hume dealt with it in their works, considering self concept an essential part of consciousness. In the 17th century, Descartes set

apart the physical body of a human being with its shape and dimensions (*res extensa*) in space. Its actions are governed by thinking (*res cogitans*), which is not a physical entity and therefore does not have a specific physical shape. Thinking forms a functional unit with the body, where material and immaterial entities are dependent on each other, making this dualism of body and mind, which is still used today, inconsistent, producing many conflicts in theory and practice (Véle, 2012). In practice, due to the long tradition coming from the knowledge of Newton's physical laws of motion, the physical element of movement is preferred.

The control, intellectual processes of movement were scientifically developed only in the 20th century by Wiener (Wiener, 1948). The basic, genetically fixed archetypes of movement inherited from ancestors are stored in the brain already before birth. The brain is, in its early stages of development, under the influence of cerebrospinal structures. Their influence is, in the course of development, being reduced by the mounting effect of cortical structures. Moreover, it has been verified that in a dilemma, problem solving goes back to the previous, by an individual proven ways of dealing with the problem (Véle, 1997). Exchange and processing of information between the body and mind constitutes a psychophysical correlate that cannot be separated. Movement control is usually described as the activation of neural circuits, without the master influence of thinking. It is described as a two-way exchange between the brain and the functional apparatus (Pribram, 1991). Anyone who works on influencing the psyche through movement (movement instructor, somatic therapist, psychomotor therapist) has to work with the physical body and thinking at the same time. Furthermore, it is necessary to work with the developmental shifts in the self-control organization of an individual (Véle, 2006).

Our civilization has been growing up on the principles of individualism since the Middle Ages. Its basic ethics is the ethics of individual autonomy. In the 20th century, the culture of Western democratic countries cast aside the ethics of religion, which was the dominant organizational culture in medieval society. The most valued virtues such as honor, good reputation, sense of duty and obligation took a back seat (Možný, 2014). The present puts emphasis on personal independence, way of life on one's own terms, satisfying personal goals and experiencing. This allows a high degree of independence, but also brings about the loss of mainstays guaranteed by the norms of society in the past. Such "freedom" can only be handled by an individual with a high level of self-confidence and self-esteem.

It turns out that for people with higher confidence, self-construction is positively associated with a better quality of life and better performance. In people with lower self-esteem, we observe the uncertainty due to the perceived lack of behavioral boundaries. These can be the cause of failure and aggression. Pharmacotherapy can be a means for the preservation of healthy mental life offered to failing individuals. Biochemical changes help clients to overlay the worst attacks, but the problems remain. The solution lies within, patients must do the job for themselves (Véle, 2006), ideally given professional guidance. Psychotherapy combined with activity-therapies and pharmacotherapy, which can accelerate the healing process, seems to be the most effective. Despite the fact that from the beginning the development of psychotherapy was focused on mental states, we can bodily perception was considered a part of mental life. In his work “The Ego and the Id” Sigmund Freud (Freud, 1923 by Smith, 1999), claims that the experience of the ego develops through the experience of the body. According to Smith (Smith, 1999) it was this Freud’s assumption that laid the foundations of psychotherapy aimed at the body. Smith (Smith, 1999) argues: “The developmental and theoretical implications of Freud’s view of the ego as a physical ego provide theoretical justification for working with the body in psychotherapy”. However, psychoanalysis hardly ever worked with the body.

PHYSICAL SELF CONCEPT IN THE CONTEXT OF PSYCHOLOGY

Self-concept, self-esteem and will controlled self-actualization show how individuals evaluate their strength, potential and capabilities. Self-concept captures the essence, the core of the personality that heads toward psychosocial maturity through development. The subject of physical self perception is one of the central themes of Exercise Psychology.

The development of the body schema perspectives was significantly influenced by William James (1842–1910), a representative of classical behaviorism. In his “Principles of Psychology” (Harter, 1996), he distinguished the two basic aspects, “I self” as an entity that has a consciousness of the unique personal experience distinguishing the individual from others, and “Me-self” which is an entirety of all what one deems himself. “Me-self” has three equal parts – constituents: physical, social and spiritual. James placed the perception of one’s own body in the physical self, which is the basis of the hierarchical structure.

The body is the main means of self-perception, self-understanding and interaction with the environment. The body provides us with information about

ourselves. It constitutes the first signal about the state of our inner self. We perceive changes through the movement of the body. The movement of a living organism is a fundamental expression of its life. It is an active process coming from within. The motorics translates into the ability to perceive, evaluate and use spatial relationships. Physical self-perception is a part of the overall structure of self concept, it is a conscious self- reflection structure containing the attainment of knowledge in memory. The experience of the physical self is known as the body schema.

Rogers's theory (Rogers & Dymond, 1954) is very close to James's distinction between self- perception (how an individual perceives his current self) and the ideal self (what they would wish to be like). The central concept of Rogers' approach to personality is Self. He perceives it as a structured whole, based on the perception of the features of the self and the perception of the relationships of the self to other people and different aspects of life. It emphasizes the need for a positive self-acceptance, for which it is important to fulfill the need of positive feedback from others. The conscious perception and evaluation of the self forms the self-concept. It means the people's concept of who they are and what they are. In addition to what we are, it includes what we would want to be like - the ideal self. The closer the real self and the ideal self become, the more mature the individual is (Rogers & Dymond, 1954).

According to Rogers, everyone strives to reach an "ideal self". Rogers also hypothesized that psychologically healthy people actively move away from roles created by others' expectations, and instead look within themselves for validation. On the other hand, neurotic people have "self-concepts that do not match their experiences... They are afraid to accept their own experiences as valid, so they distort them, either to protect themselves or to win approval from others" (Aronson et al. 2007).

Self Concept Includes:

1. Your social character or abilities
2. Your physical appearance and body image
3. Your thinking

Today, modern "self" theory says each person is expected to decide what is right and to know him/herself well enough to determine what courses of action "feel right." In short, we must know ourselves, so we can set our life goals and self-actualize (Aronson et al. 2007).

Rogers doesn't formulate the critical stages of development, as it is done in other psychological theories of personality, but focuses on the occasions when, through evaluation by others, the development of a positive or negative self-image is supported. Rogers (1951, 1952) emphasizes the importance of motivation in learning, including movement learning. Learning does not mean knowing the answers, but our willingness to explore. Behavior can be significantly affected only when individuals learn on the basis of their own experience. Movement also constitutes experience. Movement involves feeling through and self-realization. The extent to which one gets involved in movement mainly depends on his or her inner motivation. Sørensen (Sørensen, 2006) explored the motivation of psychiatric patients in Gaustad psychiatric clinic, Norway, and, currently, Sørensen and Farholm preoccupy themselves with this subject matter (Farholm, Sørensen 2015).

In human life there are situations that undermine self-esteem and may lead to the disruption of self-concept and devaluation of the self. People resist the self-concept disruption using self defense strategies, known as defense mechanisms. These help to maintain internal stability and self-esteem. Psychotherapy is concerned with understanding the regulating components and determinants of personality, personal identity, self-esteem and other dispositions which influence an individual's self concept.

Anglo-Saxon literature has brought new insights to understanding the importance of self-confidence and self-concept, which is currently regarded as the essence of creating resistance of an individual to stress. The proportion of self-confidence and resilience is viewed primarily from the perspective of resilience in the sense of coherence, the awareness of one's own active participating in events in the inner and outer world and the „hardiness” type of resilience – the potential to fight hard, cope with and overcome difficulties which one encounters. The “Sense of Coherence” concept is associated with the work of Professor **Antonovsky** (Antonovsky, 1993). A balanced world view and the concept of one's participation in the events around or inside himself or herself are regarded as essential. Antonovsky argues that the overall orientation of each of us is determined by three factors: comprehensibility, manageability and the meaningfulness of the world and the events in it. Concurrently with Antonovsky, psychologists **Kobasa**, **Maddi** and **Khan** worked out a different theoretical concept of resilience, the so-called “hardiness”, and the method of its measurement. The “hardiness” type of resilience is characterized by the potential to fight hard, cope with and overcome difficulties which one encounters. Gentry

and Kobasa claim that this is determined by the integration of three personality traits: control, commitment and the perception of stressful situations such as challenges. These personality traits come into play when coping with stress as well as an illness (Kobasa, 1979).

Integrated Psychotherapy uses the term self-schema (and occasionally the sub-term body schema), whenever there is a need to emphasize the spatial distribution of responses to oneself. Karl **Jaspers**, a philosopher, psychologist and psychiatrist, is an important figure here. His friendship with Heidegger can be explained by their mutual understanding and common philosophical disposition. Jaspers argued that mental life can not be objectified, which is what psychoanalysis attempts to do. The psyche is about becoming, revealing and differentiating, it is never final or fully settled. Life of a free and genuine person is about finding oneself. Experience is elemental for perception, so is the cognition of space and time. The body and its awareness of its own existence are intrinsically linked. It is unquestionable that the perception of the physical body is individually specific, depending on the posture and movements of the body, the ease with which a person moves, their strength.

According to Jaspers (Jaspers, 1997), the following general features are characteristic for self-awareness:

- a) *Spatial identity awareness*: Delimitation against the outside world. I am one with spatial areas occupied by my body. *The perception of space may change as related to psychopathology. Space may seem infinite or cramped to patients, compared to reality they perceive objects smaller, larger or skewed.*
- b) *Identity awareness*: I know that I still remain the same person, right now, in the past and in the future
- c) *Unity awareness*: I am a whole.
- d) *Activity awareness*: Interaction with our environment is important for self-awareness. When I perceive, think, feel, move, I experience activity.

Distortion or absence of these qualities suggests a change in self-awareness. There are different manifestations of abnormal body perception, inexhaustible in the abundance of forms and dynamics of exhibition.

Schilder considers the possibilities of internal body concept development. Through feeling, we perceive our body parts, the possibility of movement in space and time. Gradually, the body is seen as a functional unit. When moving, an individual receives kinesthetic, rhythmic and social stimuli and responds to them. If the movement is carried out satisfactorily and if the repetition of

movement is viewed positively, the result is a boost in the self-confidence of the individual. The change in attitude, self-understanding and self-concept can only occur when working with the biological and emotional aspect simultaneously. Movement and emotion are inseparable. We are the way we move (Schilder, 1923, 1933).

Gendlin believes that a change in the behavior of the body can be supported by a newly learned movement. Movement in itself is not enough, it must be combined with the experiential aspect. The change must take place on an emotional level (Gendlin, 1962). We use “embodied embedded cognition” to capture the experienced meaning. Embodiment is a process that relates something strange and disturbing to our system of categories. It means the classifying and identifying the actuality, thus making it less threatening and more manageable for us. Physically embodied experience means a mere resting of the mind in a physically anchored feeling which carries the experienced meaning (Moscovici, 1984).

Focusing is about the development of new skills rather than the acquisition of knowledge. The technique involves a conscious fixation on the spontaneous physical focus manifestation, subsequent observation of its changes, physical focus based cognition and switching back and forth to semantically equivalent contents of the mind. It is important to go from the experience of the body and its changes, and only then record the corresponding changes in the contents of the mind.

The process of mental exercise can be divided into 6 stages:

1. assuming the position
Finding a place, assuming a comfortable position and “anchoring” (body experience awareness).
2. experiencing physical reality
Awareness of the specific emotions which arise in certain areas of the body (focus) and differ from others.
3. grasping the importance of physical sensation
When the participant “grasps” the focus of their bodily sensations, he or she focuses their attention without voluntary effort, observing the changes. A verbal description of the experience follows, a catchword is created, a word capturing the meaning of a specific physical sensation. After the catchword has been remembered, it is important to give up all other associations and only flow between physical experience and its mental designation.

4. awareness of the transitions of consciousness between the physical sensations and the contents of the mind
5. feeling actualization
Expand the actualized physical sensation with more mental descriptions using the memorized catchword.
6. thought processing
An inventory of all the meanings experienced.

Focusing is about practicing the skills to distinguish mental processes from their content. It's about creating conditions for the meanings carried by the contents of the mind to be tested and refined in relation to the perceived pre-verbal meanings of physical sensations.

In the area of sports, **Fox and Corbin** dealt with the physical concept structure. Within physical self-concept, they found the closest relationship between the overall self-esteem and the perceived appearance. Changing self-esteem is not automatic, it occurs in some people participating in certain locomotor programs (Fox and Corbin, 1989)

They divided physical self-concept into five parts:

- sports competence – the perception of sports skills, the ability to learn sports skills and a sense of security in the sports environment
- physical fitness – the perception of the level of physical fitness, stamina and endurance under strain
- physical attractiveness – the perceived attractiveness of the figure/physique, the ability to maintain an attractive body
- physical strength – the perceived strength and certainty in situations requiring physical strength
- physical self-esteem – the feelings of happiness, satisfaction, pride, respect and confidence regarding the physical self

According to Smith (Smith, 1999), the regarding and interpretation of the body are based on the concept that structure is a fixed function. The physique is therefore an expression of the psychobiological history and current status. The regarding of the body is primarily a phenomenological observation of a patient's body. Alternatively, intuitive imagery or dimensions of excitement and other somatic dimensions which, according to Keleman (Keleman, 1985), relate to boundaries and contact, can be used.

Another system of looking at the body is the Lowen model, largely based on Reich. Reich focused on the discovery of the character and muscular armor. He

described the fundamental types of character structure: ocular, oral, anal, phallic and genital. Lowen, in his approach, seeks to examine the overall physique and deduce the character style from it. Lowen then defined five character types constituting the developmental series of: the Schizoid, Oral, Psychopathic, Masochistic and Rigid type (Lowen, 2009). Reading the body using typology comes from the constitutional views and systems. Probably the best known typology is based on the works of Kretschmer and Sheldon.

The following psychiatrists worked with movement in the self-concept context: Wilhelm Reich (1897–1957) first brought a true focus on the body into psychotherapeutic theory and practice. The concept of so-called “muscular armor” forms the basis of Reich’s approach. According to Reich, the armor is the result of a neurotic solution to a child’s conflict between the inner needs and urges and the demands of the social world, which crystallizes into a neurotic “character”. Reich perceived character as an organismic phenomenon manifesting itself as chronic muscular tension. This tension works toward the denial and blocking of the urge to act in a way incompatible with the neurotic character. The basic feature of Reich’s typology of characters is the idea that character traits are a way to harness emotions, especially anxiety. In describing character types, Reich proceeded from the assumption that each character type represents a form of defense – armor against stimuli from the outside world and suppressed inner urges. The exterior of this armor is always formed by earlier experience, mainly from early childhood. Gradually, muscular armor binds any kind of free flowing anxiety. Character defenses are thus manifested in the physical body structure (Reich, 1927). As a disciple of Sigmund Freud, Reich adopted Freud’s concept of libido. His experience with chronic patients led him to the idea that psychic experience may provoke a physical response, which can lead to a permanent organ change. He later called this phenomenon the physiological anchoring of psychic experience.

Reich observed that most patients’ difficulties are related to their inability to indulge and experience most of their excitement in a natural sexual act. If psychic experience is anchored in the body structure, most commonly in the locomotor apparatus, it gradually creates a kind of armor, a defense against the repetition of feelings of discomfort physiologically associated with emotions (Reich, 1949; 1990). He developed physical exercise helping to release oneself from this armor. This work gave rise to different trends in body therapy, for example the bioenergetic analysis by Alexander Lowen, which uses special positions and exercise to release blocked energy. Frederick Pearls, the founder

of Gestalt therapy, attended Reich's lectures and studied his therapy. Reich's work "The Function of the Orgasm" (Reich, 1927), is considered the foundation of European psychosomatic medicine. In the 1940s, Reich reformulated the Libido theory to become the Orgone theory – universal energy present in all living things, and in all matter in the universe. A patient's life energy is often inhibited by internal barriers – chronic muscle tension reduces physical mobility, prevents sound, free breathing and limits spontaneous experiencing and expressing of feelings and emotions (Reich, 1990). Bioenergetics is based on Reich's idea of life energy.

NEUROLOGY IN THE CONTEXT OF PSYCHOTHERAPY

In medical education in the early 20th century, the knowledge of neurology was elemental for the exploration of mental processes. The nervous system controls all processes in a living organism. It is divided into the system of vegetative control organ functions and the cerebrospinal system, controlling motion behavior and voluntary activity. Complicated locomotor programs are controlled on the cortical level. Above this level, there is the psychic level, with no typical localization as with the previous levels, but providing the motor expression with its teleological content, giving meaning to movement, which may become transcendent ie. metaphysical in character. The control function of the CNS is associated with the perception of experiences in both cortical (rational) and corticosubcortical (emotional) areas (Véle 1999).

Breathing is an important form of movement. Generally, when inhaling, the excitability of the nervous system and muscles increases, and, is reduced when exhaling. If we want to facilitate movement, we perform it when inhaling, on the contrary, if we want to relax, we do it when exhaling. The psyche as an integration mechanism of the entire system depends on postural function, breathing, on the internal environment and the external influences. All this affects our actions and movement behavior. The more the psyche is detached from its surroundings and the needs of one's own body, the more one can concentrate on a specific problem that may relate to one's own body, or is able to focus on the mental and psychical problems and acquire knowledge in these areas (Vele 1999). The concentration of the mind on a single problem allows its deeper analysis, concentration on the motor output and enables one to achieve maximum motor performance in both accuracy and intensity as evidenced in Karate or Zen (Véle 2006; Véle 2012).

Therapeutic use of breathing exercises to influence functional disorders is in its character a more preventative method, working with a long-term objective of reorientation of motor behavior to prevent disorders (Vêle 2006).

The restriction of breathing in **Gestalt therapy** is one of the major mechanisms of self-interruption. It offers psychopathological and therapeutic contexts. It is the main means of calming the growing excitement of the body. There are certain breathing patterns which are linked with emotions (fear, anger, sadness, hope, joy, desire). The emergence of gestalt therapy is associated with the work of Fritz **Perls**. Reich stimulated Pearl's interest in nonverbal motor expression and the importance of muscular armor. Pearls attended Reich's lectures and he later used the knowledge in Gestalt therapy. Gestalt therapy emphasizes awareness of bodily sensations, but does not use contact directly (Pearls, 1969). The core process of Gestalt therapy is a better understanding of the perception of physical sensations, emotions and behavior at the present moment (Perls, 1951). The new generation of Pearl's disciples, Erving and Miriam Polster and Joseph Zinker began to formulate new solutions and principles in gestalt therapy.

The Alexander Technique was developed by the Australian actor Frederick Matthias **Alexander**. The essence of the method is the reeducation of habitual motor stereotypes that may be manifested as both physical and psychological health problems. The basis of the technique stems from Alexander's personal knowledge, coming from a detailed introspection and dealing with his voice problem. A person is predisposed to a constant repetition of habitual stereotyped responses. A habit can be defined as our usual way of carrying out all activities. It becomes our norm. Habitual reaction affects the functionality which is reflected in all the constituents of an individual – physical, mental and social (Alexander, 1985). The principle of the Alexander technique is based on the development of the ability to realize and control one's own body. An important aspect of the technique is assuming full responsibility for oneself and one's actions. The technique initially deals with the suppression of automatic stereotype - habit, and then the ability to consciously choose which way will be the activities determined in advance carried out. (Barlow, 1973, Maisel, 1974). There are still supporters of the method today. The Society of Teachers of the Alexander Technique was founded in London in 1948.

A student of Wilhelm Reich, Alexander **Lowen** (1910–2008) was an American physician and psychotherapist. He developed bioenergetic analysis, a form of mind-body psychotherapy. According to Lowen (Lowen, 1975), one is embed-

ded in one's body. People see their body as a life process. Lowen builds on Reich's concept of muscular armor, which prevents the flow of life energy. Lowen claims that the rigidity in mental functioning corresponds with the stiffness of metabolic functions of the body. The objective of the therapy is to increase energy levels and to "liberate" people from the rooted traumatic experiences of their past life which are manifested in spasticity and chronic tension in the body (Lowen, 1975). The therapist informs his patients about their character structure, as revealed by the analysis of the blocks in their muscular armor. The patient is conscious of the tension, stiffness and blocks to which the therapist draws attention. Compared to the approaches of Reich, patients are in a more active role. Lowen proceeded from the assumption that if we can not show emotion, our bottled up emotions are reflected in our posture and movement, e.g. a person suppressing anger displays high muscle tension in the neck and arms, as if they were trying to contain the impulse to hit someone and their movement is stiff (Lowen, 1975). Lowen and his collaborators developed a series of physical exercises (bioenergetic exercise), and stress positions which can elicit strong emotions. These exercises aim to release chronic muscle tension - armor, through the activation of energy processes in the body and bringing these to "surface". This process should lead to the restoration of experience and a deeper understanding of the self.

Rudolf **Laban** (1879–1958) was a dancer, a choreographer and a dance / movement theoretician. One of the founders of European Modern Dance. In Paris 1908–1914, Rudolf Laban witnessed the response to cultural changes by visual artists such as Klimt, Kokoschka, Schiele, Cezanne, Matisse, Picasso and Kandinsky. Laban became interested in the relationship between the moving human form and the space which surrounds it. Laban's was a big dream: to elevate dance to become equal to other art forms, he knew that this could only happen if dance can be recorded and analyzed. He developed the theory of dynamic space based on factors that can be seen separately, but are, in fact, inseparable.

- 1) Kinesphere – real space allowing to record physical movement from one direction to another.
- 2) Dynamosphere – psychological space which facilitates recording the movement between moods.

Laban devised movement scales, which enable a dancer to express in movement his or her emotions and intention in space. Movement scales were systematically and logically compiled, based on the knowledge of eastern martial

art techniques and procedures, and aligned with the geometry of platonic crystals (composed of equilateral polytopes -tetrahedron, octahedron, dodecahedron, icosahedron). Movement – dance scales use geometry as a tool for the orientation of the body in space, enabling the deliberate shaping of the body in motion and allowing creation and mood. Visualization of shapes and directions through geometry, helps the dancer to realize their spatial plan, which helps to efficiently organize human movement. The greater the range of the body movement, the greater the opportunity for the body to express emotions (Dörr, 2008). Laban movement analysis and categorization contributed to the study of nonverbal communication. The movement description is used as a diagnostic aspect. In therapy, dance is seen as movement, it is not evaluated in terms of aesthetics and performance, but its essence is interpreted from the psychological, sociological and historical perspective. The core principle is the interconnection of movement and emotion Laban (Laban, 1975 in Karina and Kant, 2003).

Moshé Pinchas **Feldenkrais** (1904–1984) was an Israeli physicist and the founder of the Feldenkrais Method, designed to improve human functioning by increasing self-awareness through movement. During his time in Palestine he began his studies of self-defense, including Ju-Jitsu. In 1936, he earned a black belt in judo. He was a co-founding member of the Ju-Jitsu Club de France. From his position on the international Judo committee he began to study judo scientifically, incorporating the knowledge he gained through his self-rehabilitation. In 1949, he published the first book on the Feldenkrais method, *Body and Mature Behavior: A Study of Anxiety, Sex, Gravitation and Learning* (Feldenkrais, 1978). During this period he studied the work of G. I. Gurdjieff, F. Matthias Alexander, Elsa Gindler and William Bates.

In his book “Bewusstheit durch bewegen” Feldenkrais proceeds from the belief that people act in accordance with the image they have created about themselves. According to Feldenkrais, self perception consists of four components: movement, sensory perception, feelings (emotions), thinking. Self perception is constantly evolving in relation to our actions. It is necessary to adapt to this changing image. The failure to adapt means behavioral rigidity and schematism. Should a person change, they have to change their self-perception as well. Changing the dynamics in behavior is identical to changing the self; it brings about changes in movement and activates all parts of the body (Feldenkrais, 1978). Throughout the 1960s, 1970s, and into the 1980s he presented the Feldenkrais method throughout Europe and in North America.

Movement improvement is a way of correcting the self (Feldenkrais, 1978):

- a) The nervous system is heavily involved in movement execution.
- b) When alert, we can identify anything that is related to the movement of the body more easily than other factors.
- c) We have more experience with movement than with thoughts and feelings. Movement is easier for us.
- d) Movement is important for self-perception.
- e) For the perception of self, the physique and mobility are probably the most important elements.
- f) Every action starts with muscle activity.
- g) The state of the nervous system is reflected in movement.
- h) Movement forms the basis of self-awareness.
- i) Breathing is movement.
- j) The sensory perception and thinking lies in motion.

Stanley **Keleman** has been practicing and developing somatic therapy. Claims that the body structure is formed by life experience. It is a continuous process in which the body structure is constantly evolving according to how the experience gained from interactions with the physical and social world work upon it. Each emotion is associated with movement. Even breathing and speaking are a kind of movement because they are executed by muscle function. Psychology works with nonverbal communication, which is again nothing more than movement. While the content of verbal communication is under control, nonverbal communication is our real initial expression (Keleman, 1981).

Ernst Jonny **Kiphard** (1923–2010), originally an artist, promoted psychomotrics in Germany in the 1950s. In his work, he reflected his findings about the connection between mental experience and motor behavior (Kiphard, 1995; Kiphard, 1996; Kiphard, 2001). The current state of knowledge and practice is presented in the work of Hölter (Hölter, 2011).

PHYSICAL SELF-PERCEPTION IN THE PSYCHOMOTOR CONTEXT

The foundations of psychomotricity developed upon scientific knowledge stem from the needs of psychosomatic rehabilitation. The term gradually came to be used for movement therapies: Psychomotorische therapie, Körperzentrierte Mindfulness Psychotherapie, which are defined as a way of treatment that uses body awareness and physical activity as a key method.

In different systems of healing therapies, psychomotor therapy is most often seen as psychotherapy or as a specific component of rehabilitation. Through sensory evaluation of the situation and process of thought, it deals with a situation on the basis of physical and motor experience and assumptions of suitable locomotive solutions. Actively conducted, deliberate and conscious movement is an instrument of change (Hátlová. 2003). In this sense, psychotherapy utilizes biological mechanisms for the treatment of mental illnesses (LeDeux, 2002, p. 299, as in Grave, 2004). Based on the premise: The body provides us with information about ourselves. It is the first signal about the state of our inner self. Physical self-perception is a part of the overall self concept structure, it is a conscious self-reflection structure containing the attainment of knowledge in memory.

PHYSICAL SELF IN THE CONTEXT OF PSYCHOSOMATICS

Daniela Stackeová

THE DEFINITION OF BODY SCHEMA, PHYSICAL SELF AND THEIR FORMATION DURING ONTOGENESIS

The terminology used in the context of body perception seems quite inconsistent, possibly because this issue is topical for psychology and sociology, psychosomatic medicine, physiotherapy and neurophysiology.

In the psychological context, when physical self-perception relates to self-representation, the “most general” definition seems to be the perception of body schema as mental representation of one’s own body, consisting of three components: cognitive, emotional and behavioral. The cognitive component includes an idea of the dimensions of the body as a whole, the dimensions of each of its parts and their mutual relationship. The emotional component includes the relationship to one’s own body as a whole, the relationship with each of its parts, which can vary, and the relationship to one’s physicality in general. The behavioral component includes activities aimed at influencing the appearance of our body, like going on a diet, exercising, undergoing aesthetic medicine surgeries etc. Physical self and the relationship thereto, also acts as an important motivational factor for the performing of all activities or obtaining medical help of this kind. In the Czech professional environment, this issue is addressed in detail by Fialová, in whose work the terminology also stems from the aforementioned basic definition (other authors are not quoted here, it would not be possible to quote them all because of their large number worldwide – each of them uses a slightly different terminology in the context of their work; for the purpose of this study we strive to define ours, in our opinion, the most universally valid bases). (Fialová, 2006; Fialová, 2001)

The cognitive component of the body schema is the result of synthesis of a number of information coming via afferent nerve pathways into the central nervous system and evaluated here (it is the body schema component which is biologically determined to the greatest extent), the most important being proprioception. The type and form of physical activity which, when muscles are employed, involves perception via proprioceptors, plays a very important role

in the physical self-perception process, as well as it does in the evaluation of one's own body, the perception of its efficiency, fitness and attractiveness as a result of performing sports activities (Sonström, 1997; Fox, 2000).

Body schema and physical self-perception are synonymous; body schema is a term more often used in neurophysiology, kinesiology and physiotherapy, though it also directly involves important psychological aspects of this phenomenon, while physical self-perception is a term used in a purely psychological context, with emphasis on its importance in relation to self perception and identity, in the broader psychological and sociological context the term "body image" is also used, with no precise equivalent of this in Czech the borrowed English term is commonly used. Its definition is far from unified, often reduced to express only satisfaction or dissatisfaction with one's own body – i.e. negative self-perception.

Issues related to one's own body or the emotional component of Physical Self is then a far more complicated phenomenon, shaped by a number of factors entering into interactions. In childhood, there is a dominant influence of the family, i.e. the relationship of parents to their own physicality, in which the child finds a model. Psychoanalysts deem early childhood a crucial period, particularly the relationship between the mother and child in the first years of life, also known as the symbiotic union phase. In this period, the child experiences itself as unseparated. As a part of healthy development the mother is available to the child as long as needed, supports and welcomes its advances, allows separation and first independent endeavors as part of the play thereby encouraging a slow, adequate separation and internal autonomy of the child that is only being mentally born by this and is gradually receiving its independent self from the mother. For many psychosomatic patients, two relatively similar behavioral stereotypes were observed during this period, the overprotective and the implicitly rejecting behavior. These behaviors are caused by unresolved, particularly narcissistic conflicts of mothers, who then transmit these to the child, process them on the child and its body, which is in this early, symbiotic stage particularly vulnerable. These mothers are then in need of their child as in need of a "drug", anxiously watching it, being present all the time, they develop an intensive monitoring of the child, as if it were a part of their own body. These children can not develop good self-representation, which is, at an early developmental stage, inextricably linked to bodily sensations and perceptions. Their mothers respond with a high degree of attention to the physical signals and disorders of their children, control and manipulate so that the child's body could

not become its self-representation, remaining alien, not belonging to the self and under the control of the key person - the mother. This forms the basis for the Physical Self disorder. Body functions then become a direct expression of the existence of contact with the person in relationship and it may later be manifested by a complete disregard for one's own body, lack of care for the body, or erroneous perceptions of physical symptoms and disorders. This pathological Physical Self can, in turn, lead to a careful treatment and control of physical symptoms, both behavioral models may also be mixed. (Krueger, 2002; Mahler, Pine, & Bergman, 2006)

In the course of ontogenetic development, cultural and social influences also become important. In adolescence, dynamic changes occur in the psyche and the evaluation of one's own physical attractiveness becomes a very sensitive issue. The so-called ideal of beauty is perceived differently by different social groups, but the influence of the media plays an important role here. In recent years, there has been a dynamic development in this area, especially for women, where from the extremely thin and almost unhealthy-looking body the beauty ideal has shifted toward a healthier physique with a higher percentage of muscle mass, nevertheless, with a very small, for most women elusive body fat ratio, and, on the other hand, highlighted attributes of womanhood such as breasts, which are often the result of interventions of aesthetic medicine. The body has, far more than in the past, become a subject of trade over the last decades, an object which must be invested in and is often publicly presented as a symbol of success, this being one of the reasons why Physical Self plays an important role in the lives of contemporary people, obviously more important than ever before. In the media, we can often encounter the exaggeration of social influence in the context of a possible pathology in the perception of the body, typically in cases of women suffering from anorexia nervosa. Although adolescence is characterized by an increased sensitivity toward the evaluation of physical attractiveness coming from outside, the emergence of such serious psychopathologies as psychogenic eating disorders cannot be attributed to the influence of advertising (Kocourková, 1997).

Personality factors also interact with external influences, (e.g. introversion is a predisposition for an increased perception of one's own feelings, including physical feelings) resulting in a specific physical self-perception and relationship to one's own body (Fialová, 2001; Fox, 1997, Grogan, 2000).

The issue of physical self-perception and its role in the development of various health problems, typically functional disorders of the musculoskeletal system and various psychosomatic illnesses, is dealt with by a number of experts who also designed the therapeutic methods or procedures to treat these disorders (Stackeová, 2007; Stackeová, 2007).

THE DIAGNOSTICS OF BODY SCHEMA/PHYSICAL SELF

We can use standardized tests for the diagnostics of physical self, (eg. Physical Self-Perception Profile by Corbin and Fox, 1989). The disadvantage of the tests being, based on our own experience, the fact that they fail to capture the pathology in the tested subject's attitude to physical activity, on the contrary, this may be evaluated positively.

For clinical practice, the test of drawing the outline of one's own body is considered more appropriate (the instruction given is: "draw the outline of your own body"). The interpretation of this test requires some experience in this area. The analysis is carried out in an interview with the tested person, this is of diagnostic value as well. Group analysis is also possible.

Note: We are not referring to the psychodiagnostic projective method at this point where the test of drawing of a human body has been used for a long time by various researchers to examine a variety of phenomena, especially personality characteristics. This subject matter was well-arranged and treated by Bardošek (2011). Our method is targeted on physical self-perception and is sensitive to short-term changes; it can also be used as a method of capturing the effect of therapy aimed at improving physical self-perception – see Fig.1. Based on our experience, concerning the body drawing as related to physical self-perception, we propose to evaluate the following:

1. Line stability – a continuous line reflects a clear idea of one's own body, should some parts be retraced several times, in most cases this would indicate dissatisfaction with them (we do not mean the style of the drawing as a whole, which then requires psychological interpretation);
2. Realistic interpretation of the dimensions and shape of individual parts and their proportions – the most commonly encountered are exaggerated dimensions of problem body parts in women (hips, thighs), unrealistic length of limbs and their proportions with respect to the rest of the body; the body parts affected by nociception are more pronounced as well;

3. Drawing differentiation – the precision of body shapes/curves is evaluated (whether the shapes of particular parts are depicted, ie. the shapes of muscles, joints, etc.).
4. Right-left symmetry of the drawing – the breaking of lateral symmetry in a drawing suggests right-left asymmetry of the musculoskeletal system, even clinically insignificant scoliosis will be reflected in the the drawing.

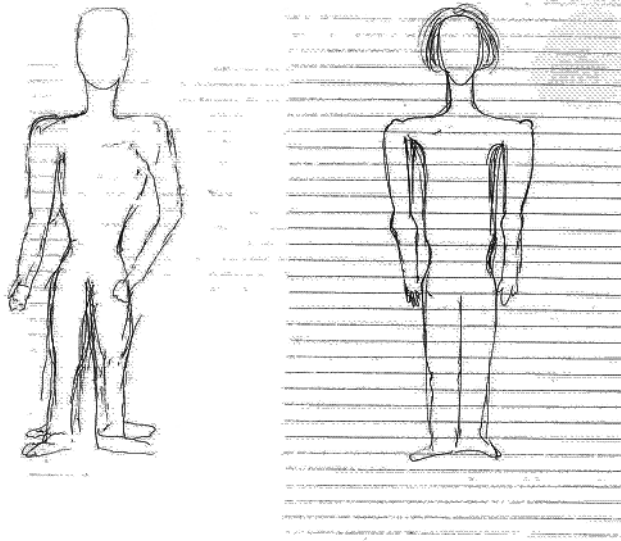


Fig. 1: An example of a body schema drawing of a 15-year-old anorexia nervosa patient immediately before (left) and after (right) the therapeutic session focused on body schema (source: own medical practice)

THE BODY SCHEMA DISORDERS/PHYSICAL SELF PATHOLOGY

The body schema disorder is typically encountered in psychosomatic patients (pathophysiology see above). The differentially diagnostic marker is the body schema disorder in patients with anorexia nervosa. Alexithymia is an often discussed diagnosis, also characterized by a body schema disorder. It is defined as a cognitive-affective deviation with attention focused on external events rather than internal experiences. In essence, this is one of the defense mechanisms of personality, as some attenuation of the expression of emotions can be diagnosed in healthy people as well. The concept of alexithymia has proved highly beneficial for clinical practice, especially in those patients consulting a num-

ber of experts with many of their atypical difficulties but without significant somatic findings. These are called “persistent somatizers” and their inability to recognize, communicate and regulate emotional movement and the resulting psychical, difficult to define moods are described; their only clear perception lies in the somatic area. With these patients, the only signal of psychological moods is pain. For them, the body is always partly perceived as something alien and becomes a projection surface for intrapsychic conflicts. (Uher, Bob & Ptacek, 2010)

The failure of body schema occurs in many mental diseases (the total disintegration of body schema is typical for schizophrenia, there are body schema changes in alcoholics, drug addicts, etc.), in somatic disorders (long-term immobilisation trauma, diabetes mellitus, in various joint diseases), but also in specific stages of life (the elderly, women during pregnancy, menopause, etc.) (Vágnerová 1999)

PHYSICAL SELF FROM THE PERSPECTIVE OF THE PSYCHOLOGY OF SPORT AND PHYSICAL ACTIVITY – OPPORTUNITIES FOR INFLUENCING, POSSIBLE NEGATIVE ASPECTS

When comparing physically active and inactive population, people doing sports are, in general, characterized by a more differentiated bodily schema. Aesthetic sports such as gymnastics contribute to extremely differentiated body schemata. In this sense, it is necessary to underscore the positive effect of modern systems, such as fitness exercise, where individual muscle groups are employed separately and there's highly concentrated attention to muscular sensations. A better differentiation between different body parts and sensations in them is possible, resulting in a positive change of body schema.

In the body drawings of men as compared with women, we encounter a frequent schematization caused by a weak perception of one's own body, often combined with the related desire to avoid a given task. Women pay much more attention to the body and tend to be ultracritical in the assessment of their body which often has to do with the beauty ideal as presented by the media. This dissatisfaction with one's body is reflected in lifestyle, it drives the motivation for physical activity and dietary compliance regimes (Fialová, 2001).

The work with body scheme is used in the treatment of a variety of disorders (see above). These techniques seek to change the perception of the body, taking

advantage of various controlled physical activities coupled with mental exercise, or body perception training. Yoga elements, relaxation techniques, breathing exercises, rotational movements of the joints, dance elements and many others are used (Smith, 2007). General kinesiotherapy issues were elaborated on by Hátlová (2003).

One of the primary negative aspects associated with the aforementioned effect of physical activity on mental health is a kind of “addiction” to physical activity. Křivohlavý (2001) calls it “positive addiction” (with runners, climbers and gym goers). Upon discontinuation of physical activity, withdrawal symptoms are found in these individuals, especially in the psychological area - feelings of anxiety, guilt, disturbance and unrest. He uses the term negative addiction to refer to a continuous increasing of the limits of sports performance, where there are both hazards associated with the specific type of activity performed to an excessive degree, and of neglecting other areas of life (Křivohlavý, 2001).

In various pathological conditions such as the psychogenic eating disorders, physical activity of various kinds can become a part of the obsessive-compulsive symptomatology (Kocourková, 1997). Adams and Kirkby (1999) describe exercise addiction as a primary disorder that can occur independently of the psychogenic eating disorder or develop as a part of its symptomatology. The mechanisms of the development of this disorder are both psychological and biochemical, where the greatest importance is attached to the influence of endogenous opioids.

These issues are very closely related to the topic of abuse of various doping substances occurring lately to a large extent not only in elite athletes, but also those doing sports for recreation. A disorder known as muscle dysmorphia or bigorexia is diagnosed in boys – a morbid desire for increasing muscle mass at the expense of health, similar to anorexia nervosa in girls (Martykánová & Piskáčková, 2010).

MOVEMENT, SPORT AND ANIMALITY AND SELF-CONCEPT

I often hear the phrase that movement is a basic human need, which can be found in every book today dealing with the health benefits of movement and in every thesis on the subject. This begs the question if movement is a need or rather a manifestation of self-expression – every emotion is associated with movement. Breathing and voice are a kind of movement as well because they are made by muscle function. Psychology deals with nonverbal communica-

tion, which is, again, nothing more than movement. While the content of verbal communication is under control, nonverbal communication is our real initial expression (Keleman, 1981).

If we can not express them, the withheld emotions may be reflected in our posture and movement, e.g. people trying to suppress anger show high muscle tension in the neck and arms, as if to hold back the impulse to hit someone, and their movement is stiff (Lowen, 2009).

Sport is an interesting phenomenon, not only from the point of view of physics and medicine, but also of sociology and psychology. Competitive sports are usually presented in a positive light. The desire to win, always closely connected with the desire to beat the opponent in physical performance, can, however, be also understood as a manifestation of animality. Analyzing various sporting disciplines is also interesting. Collective games involve team cooperation and team victory and their symbolic meaning is thus totally different than in individual sports. Psychologist Csikszentmihalyi, the author of the FLOW concept of experience, describes the absorption of man through performing an activity with an organizing influence on the psyche, often containing meditation charge (Csikszentmihalyi, 1996a, b).

One could dare say that the predominance of rationality, self-control demands and lack of spontaneity can be compensated by just such experiences. The importance of soothing rhythm relieving stress and anxiety must not be forgotten. Physical activities with a certain rhythm always have this kind of charge and the participants can perceive it; the importance of rhythm perception (as in running) is described by some as pivotal. Some sports like boxing involve direct manifestation of aggression. We can find a parallel in the long historical tradition of contact sports, which have always been very popular with audiences although there's hardly any other sport containing more animality. This prompts the issue of genders: are there are typically male and typically female sports? If the "male animality" manifests itself in aggression and fighting, then the "feminine animality" can be found in sports such as rhythmic gymnastics, figure skating and like, involving the demonstration of the female body in movement.

The answer to the question about the significance of sport, can thus be expanded; in addition to the health benefits of movement, relaxation and social networks building, we can also conclude that sport is one of the ways to express our animality, an integral part of our personal identity.

THE INFLUENCE OF PHYSICAL ACTIVITY ON THE STATE OF MIND

The relationship of movement and physical self-perception is closely related to the impact of physical activity on mental health. Movement can serve as a means of influencing the psyche and the perception of this competence significantly alters the relationship to one's own body and can act preventively and therapeutically in the field of psychosomatic medicine. In addition, a number of psychosomatic disorders are primarily associated with anxiety and depression whose levels can be potentially reduced by movement.

The fact that movement has a positive effect on the psyche is generally well known. A number of studies (Weyerer, Kupfer, 1994; Taylor, Needle & Sallis, 1985; Brunet & Sabiston, 2011; Allender, Cowburn & Foster, 2006) were dedicated to the importance of the psychological benefits of physical activity to motivate fitness exercisers, which suggests that these motives are of equal if not greater importance than performance or aesthetic motives.

When talking about the impact of physical activity on mental health, it can generally be described as an abreactive impact (in terms of realignment and stress relief), anxiolytic and antidepressant (Weinberg & Gould, 1995; Folkins & Sime, 1981; Buckworth & Dishman, 2002; Penedo & Dahn, 2005; Saxena, Van Ommeren, Tang & Armstrong, 2005).

The extent of this effect and its duration is determined by a number of factors, both internal (personality factors, the default mental and physical condition, experience with the physical activity and the attitude to it) and external (the type of physical activity, its intensity, duration etc.). Likewise, these effects can not be completely separated, as they are interdependent (e.g. the anxiolytic effect is associated with stress abreaction etc.), and may potentiate one another.

The first studies on the impact of deliberate physical activity on mood (Weinberg & Gould, 1995) were, in most cases, conducted on runners. The so-called "runner's high" is described as a feeling of well-being, relaxation and euphoria subsequent to running. Initially, this effect was primarily attributed to the production of endorphins, but its mechanisms are more complex. In later research the effect of aerobic and anaerobic physical activity on mood was often compared. The results of these studies, however, have not been uniform, both because of the methodological complexity of organizing this kind of monitoring, and because of the influence of other factors affecting the final psychological condition of the probands monitored. Nevertheless, jogging and other forms

of aerobic physical activity are more often used in the treatment of depressive patients (Greist Klein, Eischens & al., 1979; Holmes & McCann, 1984; Hughes, 1984; Martinsen, Medhus & Sandvik, 1985; Harris, 1987).

Raglin wrote on the subject (2001), highlighting the diverse effects of physical activity as to its nature and the individuality of participants. According to him, aerobic activity has a significant effect on reducing anxiety and depression which lasts several hours and is not directly dependent on the intensity of the activity. He claims that strength training makes a significant impact on the reduction of anxiety for people with high trait anxiety as their personality characteristics. He also describes the difference in the effect of physical activity on the current psychological state in mentally healthy individuals and patients suffering from anxiety or depressive disorders, where physical activity exhibits a high therapeutic effect (Raglin, 2001, Tkachuk, Martin, 1999). A positive effect of physical activity was also detected in the treatment of other mental disorders, contributing to the reduction of the menopausal symptoms as well (Slaven & Lee, 1997). Hátlová (2003) worked out the concept of using movement in psychiatric patient therapy (kinesiotherapy). Any given physical activity may entail negative aspects when it becomes a compensation, or hypercompensation for other problem areas of life (Brewer & Petrie, 2002). Even though one may experience a temporary positive change in their current state of mind due to physical activity, the ultimate impact may be quite negative. Cases of movement addiction which led to serious self-harm have been recorded.

Better mental health is described in performance athletes due to their pursuit of sporting activities. This was demonstrated in an extensive study using the POMS test for mental condition diagnostics. It was found that athletes exhibit lower values in points T, D, A, F and C, and higher values in point V. This phenomenon is called the “iceberg” profile (Morgan, 1980; Berger, B. G., & Owen, D. R., 1988).

Csickszentmihalyi's concept of experience FLOW (Csickszentmihalyi, 1996) greatly contributed to the understanding of the effect of physical activity on mental health. It is the experience of immersion in the activity undertaken, in which we feel inner harmony and orderliness, satisfaction through merely carrying out the activity without ties to its outcome, we cease to perceive time and experience the ability of perfect concentration and inner peace. Such experience can be conveyed by physical activity, which is different for every individual as it depends on one's motivation, specific predispositions, experience and

attitudes. The FLOW experience during physical activity can be very intense with a meditation charge. Hošek (Hošek, 2007) emphasizes its importance for the quality of life.

THE ANXIOLYTIC EFFECT OF PHYSICAL ACTIVITY ON MENTAL HEALTH

While the antidepressant effect of physical activity is attributed more to the production of substances such as endorphins, the anxiolytic effect is most likely mediated by a change in the state of the muscular system. Other factors may play a role as well, e.g. repetition of certain moves in rhythm has an anxiolytic effect.

Muscle tension and its distribution are significantly affected by our psyche. Generally, under stress, which is always accompanied by increased tension bordering on anxiety, the muscle tone rises, but this happens unevenly -the tension paradoxically decreases in some muscle groups – this redistribution of muscle tension is caused by the stress experienced. The result is a breach of the dynamic muscle balance between phasic and postural muscles, resulting in the development or intensification of muscle imbalance. The psyche is thus one of the factors playing a role in the emergence or exacerbation of muscle imbalance. Emotional factors also influence stability and the function of postural muscle system. Anxiety leads to degradation in the muscle system function and in postural stability. This relationship led to the conducting of a study in which balancing exercises were applied in the treatment of individuals with anxiety disorders and positive changes in mental health were achieved due to this practice (Stins & al., 2009). Stins (2009) also found anomalies in the postural system function in children with elevated levels of anxiety. In a study examining postural sensitivity, Redfern & al. (2007) found that persons suffering from generalized anxiety disorder and agoraphobia panic attacks responded differently than the control group, the patients suffering from the aforementioned disorders were more dependent on the visual stimuli.

The postural reaction pattern in individuals suffering from anxiety (may contain all the elements given or just one of them) (Bunkan, 2008):

- Contraction of all flexors, especially abdominal muscles
- Elevation and protraction of shoulders
- Elbow flexion, forearm pronation, clenching of fists
- Flexion of the spine, hips and knees
- Contraction of mimic muscles.

Feldenkreis (<http://www.feldenkrais.com/download/senseability/sense24.pdf>) describes this pattern as a defensive reaction occurring in danger or related to long-term stress. Similarly, in Lowen's bioenergetic analysis (Lowen, 2009), the change in muscle tension is described as a specific defense reaction.

The mechanisms of anxiety effect on the musculoskeletal system were most commonly, as already described above, observed in patients suffering from one of the anxiety disorders. Many of these patients are diagnosed with myalgia (Goodman et al., 2007). The most frequent common finding is the increased muscle tension (Hoehn-Saric & al., 2004), in clinical practice also known as the limbic hypertonus. For anxiety disorders, the findings of vegetative changes are by far not as consistent as those of spasticity (Hoehn-Saric & al., 2004).

The emotional state directly affects not only the muscular system, but also the process of respiration, which has a significant effect on the distribution of muscular tension and other bodily functions as well. Anxiety accelerates breathing, which is shallow with prevalent upper lobar breathing. There is both an immediate change, and, with a long term emotional tuning, a permanent change of the breathing stereotype occurs (Véle, 1997).

Due to this close relationship between breathing and feeling, we can also use breathing exercises to regulate mental condition. When individuals suffering from anxiety change their breathing stereotype, the muscles in the throat, shoulders and neck are activated which leads to the elevation and protraction of shoulders and the cranial shift of the diaphragm. The active expiration is extended into repose, with a typical inspiratory position of thorax. Active expiration prevents the natural relaxation pause between breaths. There is also a decrease in lung ventilation, especially in certain areas, and an increased risk of bronchitis, pneumonia and other similar disorders (Bunkan, 2008).

Research has shown that 80% of those who suffer from chronic respiratory diseases, also meet the diagnostic criteria for anxiety and depressive disorders (Kunik & al., 2005). The impaired function of the diaphragm has an impact on the function of internal organs and may contribute to the emergence of health problems. With the limited range of motion of the diaphragm, the perfusion of the pelvic floor and the whole pelvic area is reduced, which affects the function of organs located therein (Møller & al., 2001; Bunkan, 2008). This can lead to sexual disorders, menstrual disorders, formation of hemorrhoids and urination disorders. It can also cause the painful pelvic syndrome in women (Kirste & al., 2002). Patients with panic attacks had a lower resting levels of CO₂, as com-

pared with patients with generalized anxiety disorder and healthy individuals (Hegel & al., 1997).

The diaphragm insertion is located in the 10th-12th thoracic vertebra, i.e. in the same place as the transversus abdominis muscle. Quadratus lumborum and psoas major muscles are based in the same area, and both of these muscles are often tense. The fibres of the quadratus lumborum and iliopsoas muscles are activated in synergy with the multifidi muscles, and are important for the stability of the lumbar spine. For people suffering from anxiety, increased muscle tension is often related to the insertion of the diaphragm. Increased muscle tension leads to muscle contraction. This probably leads to the compression of joints and potentiates the development of degenerative joint changes. It is also likely that this may lead to neuropathy due to a reduced microcirculation of the nerves around the spine (Bunkan, 2008).

In general, we can argue that the changes in respiratory functions caused by the change in breathing stereotype affect muscle tension in the muscles involved in the respiration process. This can promote the occurrence of painful conditions of the musculoskeletal system, which acts on the psyche as a stress factor, inter alia, again affecting the function of the locomotor system and possibly creating “a vicious circle” of continuous exacerbation of problems. Physical activity may be just one of the ways to break that circle.

CONCLUSION

Physical self-perception has become a widely discussed topic in recent years, and, due to its broad context, it can be defined as an “interdisciplinary” subject. For its complete and comprehensive understanding, a synthesis of views of different disciplines, both academic and medical, is necessary. For psychosomatics, this is one of the crucial topics, both for understanding the causes of psychosomatic disorders and for their treatment. Many therapeutic methods and techniques base their very success on influencing the body schema/physical self-perception. The extent to which such a change is possible is subject to discussion. Traditional psychotherapeutic and modern methods like bodytherapy are both used, as well as the mediated influence of physical self-perception, for example through the aforementioned targeted physical activity. The aim of this paper is to outline the current trends in this field, which is being increasingly and better supported by scientific research necessary for the proper application of these therapeutic methods into clinical practice.

BODY REPRESENTATIONS AND BODY AWARENESS. THE CONTRIBUTION OF COGNITIVE NEUROSCIENCE

Valentina Moro

INTRODUCTION

Since the discipline known as Psychomotricity came into being, researchers have been deeply interested in understanding how humans perceive, represent and “experience” their bodies. The body is both something that people “have” and something that people “are”. Each individual has a body. *We listen to our body, pay attention to it, take care of it* and so on.

Each individual person is also “his or her own body”. The self is completely embodied. We have feelings, we move around within the environment and we have bodily relationships. Moreover, we express our thoughts, our emotions and affections, our stress and our fatigue with our bodies.

For this reason we might say that our body is a type of psycho-engine, or “psycho-motor”. However our bodies also exist in our brains. All the actions, feelings, perceptions and emotions that our bodies are involved in also involve our brains. So, the brain, which is a part of our body, is also the site of body representations.

This paradoxical, strange, very complex relationship between the body and the brain is an important issue and is currently a topic for debate in the fields of Philosophy, Psychology and Neuroscience (Gallagher, 2006; 2011). Nevertheless, for neuroscientists it represents a relatively recent subject and it has received particular attention due to three factors: 1. the existence of disorders in body representation, identified by neuropsychological studies and correlated to specific cerebral damage; 2. the fact that as of very recently it is possible to study brain activity by means of neuro-imaging techniques and 3. the strong relationship which exists between a person’s body and their self-awareness (in terms of bodily awareness).

In this chapter, we will try to provide a summary of the studies which have been carried out, in particular with reference to body representation and body awareness.

THE DEVELOPMENT OF ONE (OR MORE) CONCEPT(S)

The idea of the existence of some types of body representation in the brain was first suggested at the end of 19th century by a German physician named Munk (1890). He proposed the existence of a neural substrate in the parietal cortex where the memories and images of body parts were collected. A few years after this, Wernicke adopted this idea in his description of psychiatric disorders. He identified two kinds of representations. The first was the “somatopsyché”, that involved bodily images coming from exteroceptive afference (i.e. tactile, visual and auditory stimuli) and interoceptive afference (from muscles and internal organs). The latter (the “allopsyché”) included body images generated by the external world and offered a social representation of the body (Poek and Orgass, 1971).

The earliest detailed cases regarding patients affected by disorders in body representation were described by Pierre Bonnier, a French neurologist who introduced the notion of “schema” to indicate an internal representation of the body and its disorders: “hyperschematia”, where subjects perceive certain body parts as being excessively large with respect to their mental representation; “hyposchematia” where perceived dimensions are unreasonably small; “paraschematia”, where some body parts feel as if they are in the wrong position on the body and “aschematia”, where subjects are unable to reproduce the correct topography of their body parts (Bonnier, 1905).

However, the study of body representation probably really started in the years 1911–1912 when two authors, Head and Holmes, made a distinction between “body schema” and “body image”, or, respectively, “postural schema” and “superficial schema”(Head & Holmes, 1911–1912). In their opinion, the postural schema is built moment-by-moment and then rebuilt by individuals by means of their constant changes in posture. As a result of this, it is dynamic in nature and is thus in continual transformation. All changes in positions and movements are recorded in this plastic schema, i.e. the body schema. This schema is the result of the integration of the multiple perceptions originating from each of these postural changes. Conversely, recognition, denomination and indication of body parts are an expression of a “superficial schema” or “body image”.

Only 20 years later, Paul Schilder (1935) wrote a monograph entitled “*The image and appearance of the human body*”. He demonstrated that the two concepts in reality intersect each other and are difficult to separate: “*There are sensations which are given to us. We see parts of the body-surface. We have tactile, thermal, pain*

impressions. There are sensations which come from the muscles and their sheaths – sensations coming from the innervation of the muscles – and sensations from the viscera. Beyond that there is the immediate experience that there is a unity of the body. This unity is perceived, yet it is more than a perception. We call it a schema of our body or bodily schema following Head, who emphasizes the importance of the knowledge of the position of the body, a postural model of the body. The body schema is the tri-dimensional image everybody has about himself.. We may call it “body image”. The term indicates that we are not dealing with a mere sensation or imagination. There is a self- appearance of the body. It indicates also that, although it has come through the senses, it is not a mere perception. There are mental pictures and representations involved in it, but it is not mere representation.” (1978, p. 11)

It became more and more evident that there was some confusion about the terminology being used. A British neurologist, Macdonald Critchley (1979) complained that the language used by Head and Holmes was not very clear, so that terms like “body image”, “body schema”, “corporeal schema”, “image de soi” ended up being used as synonyms. Realizing that this “chaotic state of affairs” and the confusion regarding terms had by no means been resolved, Berlucchi and Aglioti (1997) suggested adopting Critchley’s all-embracing term of “corporeal or body awareness”, with the addition of emotional and affective components to the more obvious perceptual and conceptual components.

The hypothesis that there is a neuromatrix for the body was suggested by Melzack (2005). This neuromatrix indicates a distributed but functionally integrated brain system that acts as a whole and produces a feeling of the body as a unity, though with different qualities at different times.

The results of certain studies on children support this theory. It is known that during their development, infants build their own body representations and the relations between their body and the physical environment by integrating multisensory information (Neisser, 1993). Nevertheless, even before experiencing contact with the environment, humans might be equipped with rudimentary “knowledge” of their own body and its relationship with other bodies. Evidence of the existence of an innate body schema can be seen in neonatal imitations of face movements, for example tongue protrusions or head rotations, that infants are able to do a few minutes after birth (Meltzoff and Moore, 1977). Indeed, this performance indicates that neonates are able to visually identify the movements of at least some specific parts of the adult body and can produce a similar movement in the corresponding parts of their own anatomy.

In addition, three month old infants, with relatively little experience of seeing their own legs, seem to be sensitive to a left-right reversal of their legs shown on a screen and to differences in the relative movements and features of the legs on the screen (Morgan & Rochat, 1997). Nevertheless, experimental results show a slower build-up of non-facial body knowledge as compared to knowledge of the face (Slaughter and Heron, 2004).

Coming back to the discussion on the nature of body representation, a multi-component organization of body knowledge has recently been proposed (Sirigu et al. 1991; Coslett et al., 2002; Giummarra et al., 2007, 2008; Berlucchi & Aglioti, 2010).

The model that Sirigu and colleagues present suggests the existence of four components in body representations. These components are relatively independent but can also interact with each other (Sirigu et al., 1991). The first component concerns semantic and lexical information related to body parts (e.g. names, functional relations between body parts and their functional purpose) and is strongly linked to verbal systems. The second contains category-specific visuo-spatial representations of an individual's own body and also of bodies in general. This determines the position of each body part on the surface of the body, the proximity relationships that exist between body parts and the boundaries that define each body part. The third level is conceptualized as a dynamic, actual body image, resulting from somatosensory, vestibular and visual afferences. It gives information about the position and changes in position of body parts in relation to external space. Finally, motor representations contribute to this representation of the body, not only in the construction and maintenance of an emergent body-reference system, but also, on a more symbolic level, involving categorial knowledge of the functional and contextual use of body parts.

With reference to the various different disorders in body representation, Schwoebel and Coslett (2005) proposed a multiple system of representation which in some way recalls the Head & Holmes classification but also expands on it. This distinguishes between: a "body schema", namely the dynamic internal representation of bodily parts based on proprioception as well as on information based on motor commands; a "body structural description" that derives primarily from vision and defines the boundaries of the body and the spatial relationship between its parts and lastly a "body image" representing semantic and lexical information about the human body.

This classification, just as in the previous dichotomy between body schema and body image, is supported by evidence of dissociations in patients with neurological lesions. While body image and body structural representations seem to rely on the left hemisphere, specifically the temporal lobe (Buxbaum & Coslett, 2001; Schwoebel & Coslett, 2005), body schema seems to be linked to the right hemisphere, in particular the dorso-lateral frontal cortex and the parietal areas (Schwoebel & Coslett, 2005). Indeed, disorders in body image such as Gerstmann's Syndrome (Gerstmann, 1930), specific deficits in the denomination of body categories (Suzuki et al., 1997) and autotopagnosia (Pick, 1908; Semenza & Delazer, 2003) are normally described after left hemisphere damage. In contrast, anosognosia for hemiplegia, disownership of body parts and somatoparaphrenia are normally classified as deficits of body schema and are due to left hemisphere damage (Pernigo & Moro, 2008).

Nevertheless, there is growing evidence that this dichotomy is not always the rule. Reports of patients affected by "crossed" somatoparaphrenia (Perren et al., 2014) and anosognosia (Moro et al., 2011, the patient FG) have described these disorders in right-handed subjects after "dominant" left-hemisphere lesions.

Similarly, deficits concerning body image as well as body schema have been described in a patient affected by Gerstmann's Syndrome (Moro et al., 2008). This syndrome is characterized by the association of finger agnosia, left-right confusion, agraphia and dyscalculia (Gerstmann, 1924; Mayer et al., 1999), and typically occurs as a consequence of vascular lesions involving the angular gyrus of the dominant hemisphere (but a developmental form of this syndrome does also exist). Due to its characteristics, Gerstmann's Syndrome is usually considered to be a deficit in semantic knowledge of the body and relates to body image. Nevertheless, the coexistence of disorders in finger recognition and finger movement imitation suggests that both static and dynamic aspects of finger representations may be impaired in the syndrome.

Taken as a whole, the most recent evidence and in depth assessments of patients affected by schema and body image which are normally connected with left or right hemispheric lesions may be inadequate in terms of explaining the subtle links between body representation and actions (Moro et al., 2008).

“Among autotopagnosia, finger agnosia, phantom and supernumerary limbs, anosognosia for hemiplegia, somatoparaphrenia, allesthesia, dismorphic body disorders, eating disorders, and body integrity disorders, (we might ask) which are disorders of the body schema and which (are disorders) of body images?... Indeed, the body related

brain areas already known and those which assuredly will be discovered in the near future argue for the existence of many bodies in the brain... Understanding the brain processes of corporeal awareness will require knowing the contributions of each of these bodies in the brain as well as their interactions” (Berlucchi & Aglioti, 2010 p. 33).

THE MULTIPLE AREAS IN THE BRAIN INVOLVED IN BODY AWARENESS

Early neuropsychological studies suggested that the *parietal lobes* play a crucial role in body representations. Indeed, lesions in the left parietal areas (in particular in the angular gyrus and the intraparietal sulcus) are correlated to autotopagnosia (Corradi-Dell’Acqua et al., 2008), a syndrome where patients are unable to point to parts of their own body on verbal commands or to describe the spatial relations between body parts. Conversely, they are normally able to point to objects (or their parts) which are unrelated to the body. The left parietal lobe is also involved in Gerstmann’s Syndrome (Russellet al., 2005).

The right parietal lobe, on the other hand, has been found to be lesioned in patients presenting with somatoparaphrenic phenomena. In these conditions, patients manifest delusions concerning the contralesional body parts which are paralyzed. They express feelings of non-belonging and display a tendency to attribute their contralesional upper or lower limbs to someone else (Gerstmann, 1942). In reality, recent lesion mapping studies indicate that in these phenomena a crucial role is probably played by the basal ganglia and the long interhemispheric tracts of white matter that connect these structures to many cortical parieto-frontal areas (Gandola et al., 2012).

The right temporo-parietal cortex and the posterior insula have also been found to be involved in the bizarre experiences of disembodiment induced experimentally by visual illusions (Blanke & Metzinger, 2009). These phenomena consist of feelings that the center of self-awareness is outside the physical body (out-of-body experiences, OBE) or the sensation that there is a double of the person concerned which is seen in the extrapersonal space, but without them having an experience of leaving their body (autoscopical hallucinations). A disturbance regarding multisensory integration in the right temporo-parietal cortex and in the vestibular representation in the posterior insula are considered to be responsible for these illusions.

The *insula* is crucial to the integration of all subjective feelings related to the body (and especially to its homeostatic conditions) transforming them into emotional experiences and conscious awareness of the self (Craig 2009). It is organized in a hierarchical fashion, in a caudal-rostral direction whereby primary sensory inputs projecting to the posterior insula (including gustatory, somatosensory, vestibular and visceral inputs) are progressively elaborated and integrated across modalities in the middle and anterior insula. The highest integrative level in the anterior insula is tightly interconnected with the anterior cingulate cortex to form an emotional network in which the limbic insular component is involved in sensory reception and conscious feelings, and the cingulate cortex is the motivational and motor component for the behavioural expression of the feelings (Craig 2009).

In addition to this, the insula has moreover been found to be involved in Anosognosia for Hemiplegia (Karnath et al., 2005). This is a clinical condition in which patients deny that they suffer from paralysis and declare that they are able to move their paralyzed limbs normally. Sometimes they behave as if they really are able to walk, stand up or do things with both hands. As a result of this they are frequently at risk of being in danger. Thus, anosognosia for hemiplegia is a deficit in awareness of motor deficits and is considered to be the best-known and most frequent disorder in body representation (and body awareness) after strokes (Vocat et al., 2010).

Various different types of anosognosia for hemiplegia exist and it is useful to analyze these in order to focus on the large, complex network involved in bodily awareness, in which the insula, although crucial, is only part of the system. The case of double dissociation between implicit and explicit anosognosia is particularly interesting. Indeed, when this dissociation is present and implicit (but not explicit) awareness is spared, anosognosic patients verbally deny their paralysis but act as if they know they cannot move their paralyzed body parts, e.g. they plan and execute bimanual actions by replacing a paralyzed arm with another part of their body. In contrast, in the case of explicit (but not implicit) awareness, patients declare that they are not able to move their body parts but try to perform actions as if these parts moved normally (e.g. trying to stand up or clap their hands) (Nardone et al., 2007; Fotopoulou et al., 2010). The insula is involved in deficits of explicit awareness while lack of implicit awareness is associated with lesions encompassing the middle-temporal cortex and the white subcortical frontal matter anterior and around the basal ganglia (Moro et al., 2011).

Another dissociation in the syndrome concerns self- and other- referred perspectives. It has been shown that a lack of awareness may specifically relate to a patient's own deficits (1st person deficit) or also concern other people's impairments (1st and 3rd person deficit). While in the first case patients deny their own paralysis but recognize deficits in other patients, in the second they fail to recognize motor impairment both in themselves and in other subjects (Marcel et al., 2004). Lack of first-person awareness seems to be linked to damage to a large cerebral network (frontal inferior, rolandic operculum, superior temporal cortices, insula, putamen and caudate), largely overlapping that which is associated with typical body awareness disorders such as somatoparaphrenia. Third-person awareness disorders seem to be linked to the regions involved in the perception and planning of actions, such as motor and premotor areas (Moro et al., 2011).

Finally, a specific residual form of awareness in AHP has been identified as 'emergent awareness' (Moro et al., 2011; Moro, 2013). This refers to the instance in which patients deny their motor deficits but become aware of them when asked to actually perform an action using the affected body part. Lack of emergent awareness involves the antero-posterior tracts of white matter connecting the parietal cortex and the precuneus bi-directionally (Moro et al., 2011).

When spared, these residual forms of awareness may be very useful for inducing or facilitating the recovery of explicit aspects of awareness. Indeed, transient improvement of awareness has in the past been demonstrated as an effect of vestibular stimulation (Cappa et al., 1987; Ramachandran, 1995) and, more recently, as a result of a combination of various techniques, e.g. optokinetic stimulation, adaptation to the prismatic shift of the visual field to the right and transcutaneous electrical nerve stimulation (Beschin, Cocchini, Allen & Della Sala, 2012). Nevertheless, to date, only two clinical approaches have been shown to be effective in terms of inducing a lasting remission of anosognosia.

The first involves video-training which makes use of self-observation in a third person perspective (first/third person perspective dissociation, Fotopoulou et al., 2009; Besharati et al, 2014). When judgment involving 3rd person and off-line self-observation are spared, this experimental manipulation can facilitate the recovery of 1st person awareness.

The second is an approach which focuses on emergent awareness. Patients are asked to attempt actions and discuss their errors with a therapist. This experience is useful in terms of improving a patient's awareness of his/her deficit, in

particular when the episodic memory is preserved and the patient is able to learn from his/her errors (Moro et al., 2014).

In conclusion, for anosognosic patients, these in depth assessments and interventions have shown that a large cortico-subcortical network in the right hemisphere is involved in the syndrome and more in general in body awareness. This certainly involves the insula, the ventral frontal motor cortex, the temporo-parietal areas, the basal ganglia and the superior longitudinal tract of white matter. Although different parts of this network are damaged in the various forms of anosognosia (Moro et al., 2011), this confirms that there cannot be only one specific network for the body and that the perceived unity of our body is in reality the result of the integration of multiple, diffused systems.

SPECIFICITY IN BODY PERCEPTION

In front of this diffused, integrated network involved in body representation and awareness, category specific cortical regions for body perception have been found. These areas respond in a selective manner to images showing the face, the body or body parts.

The fusiform face area (FFA; Barton, 2003) and the occipital face area (OFA; Rossion et al., 2003; Sorger et al., 2007) are two occipito-temporal regions selectively activated by visual presentations of human faces (Kanwisher et al., 1997; Gauthier et al., 2000; Haxby et al., 2000). Lesions in these areas cause “prosopagnosia” (Barton, 2003), a category-specific deficit in the visual processing and recognition of human faces.

Studies of functional magnetic resonance imaging (fMRI) carried out on healthy individuals have shown that the visual processing of non-facial body parts also selectively engenders bilateral activation of specific areas, in particular a lateral occipito-temporal region known as the extrastriate body area (EBA; Downing et al., 2001). The EBA responds when an observer looks at static and dynamic displays of the human body and its single parts, but not faces and non human objects (Peelen and Downing, 2007). More recent fMRI studies have demonstrated the existence of another body selective area that is anatomically distinct from the EBA. This area, located in the fusiform gyrus and known as the fusiform body area (FBA), responds selectively to whole bodies and body parts and is adjacent to and partly overlaps the FFA (Peelen and Downing, 2005; Schwarzlose et al., 2005). The FFA is activated more by the visual presentation of whole faces but also responds to face parts (Benuzzi et al., 2007; Rossion et al., 2000;

Tong et al., 2000). In a similar vein, the FBA responds more to whole bodies than to single body parts (Taylor et al., 2007). In contrast, the EBA seems to be involved in the processing of details of non-facial body parts (Taylor et al., 2007; Urgesi et al., 2007b). Lesions involving the EBA and FBA cause specific deficits in the visual discrimination of body parts (Moro et al., 2008b).

An fMRI study (Kitada et al., 2008) found that recognition by touching human faces and other body parts such as hands and feet also activated the FFA and EBA, independent of visual stimulation. A previous study by Astefiev et al (2004) showed that the EBA responded to **goal directed** body movements even in the absence of visual feedback. Although to date these results are not conclusive (Berlucchi & Aglioti, 2010), they indicate that the EBA plays a general role in the processing of static configurations of the human body by means of non-visual as well as visual inputs.

Finally, an interesting dissociation has been described between body form (or identity) and body action discrimination. Urgesi and colleagues (2007) reported that interference by means of Transcranial Magnetic Stimulation to the EBA impairs the visual distinction between slightly different configurations of the same body part in the same posture. In contrast, the same interference in the ventral premotor cortex (vPMC) impairs the ability to distinguish between pictures representing slightly different actions performed by the same body part. This double dissociation in healthy people between body form (involving the EBA and FBA) and body action (involving the vPMC) has been supported by neuropsychological evidence in brain damaged patients (Moro et al., 2008b).

In any case the EBA and FBA appear to be sensitive to body actions expressing emotions (e.g. anger, disgust, happiness or fear). This seems to be explained by the positive correlation between amygdala activation and modulation of the EBA and FBA suggesting that emotional signals are transmitted to body-selective areas from the amygdala (Peelen et al., 2007).

Again, beyond the specificity of these areas, the fact that we are able to perceive our own and other people's bodies as unities is the result of unimodal and inter-modal integration processes.

CONCLUSION

Although these notes only partially represent the huge amount of information that neuroscientific research is producing in the field of body representations, there is clearly a very important take-home message. The body is a very com-

plex and multifaceted object for our brain to manage and multiple cerebral representations are necessary in order for people to reach an integrated and harmonious perception of their own body. The various different components are so tightly integrated that all classifications and categorizations are artificial and incomplete.

Only a multidisciplinary effort will enable a better understanding of the mystery of the body in the brain and the relationship between the body and awareness.

PERSONAL SATISFACTION, PHYSIOCAL SELF AND HEALTH RELATED BEHAVIOR FROM THE ASPECT OF INVOLVEMENT IN SPORTS IN ADULT POPULATION

Ludmila Fialová

INTRODUCTION QUALITY OF LIFE AND SPORT

Statistics, assessing the quality of life, considerate objective indications (status of health, access to health treatment, length of working hours, amount of salary) as well as subjective indicators (physical, psychological, spiritual, social, demographical, practical and leisure areas). An important part of quality of human life concerns include perceptions of self, personal health, and values (constructs, answering questions like “Who I am as a human being?”). Significance is on the place where I am living, the environmental surroundings, inter-human relations, access to public services and education (constructs answering questions like “What is my relation to my environment, to people in the community?”). The most significant aspects involving the quality of life include daily duties, leisure and sport activities, well-being, life challenges and ways of coping (constructs answering questions like “What kind of activities are defining myself, what I am dealing with and where I am developing?”).

Quality of life has relation to objective and subjective factors of mental satisfaction, common self image, one’s relation to one’s own body, age, gender, environment, social status, activity of lifestyle... Social components influenced nearly 5% of the variability of measured feelings of subjective wellbeing. This claim is valid for relatively wealthy cultures in western civilisations. In less economically affluent or poor countries a lower subjective wellbeing is related to challenges in satisfying the basic needs of people. There is a correspondence between positive social relations, mental wellbeing and physical health. Hosek (1999) discovered the relation between sport activity and higher self-assurance, self-confidence and satisfaction. Mrazek, Fialová, Bychovskaja (1998) found relationships between active lifestyle and self-perception and body image.

The psychology of mental well-being related the actual subjects as best represented through positive psychology. This is reflected through attitudes toward

life, labelled as optimism and a common life style supporting mental and physical health. Subjective feelings of well being are built from three basic components:

- Satisfaction in different areas of life
- Emotional answers
- Common valuation of life satisfaction

Concerning life quality movement is one of the most important factors; it enriches and mediates. For most people a linking inclination is obvious from a shortage of physical activity via reduced physical condition and limited capacities of adaptation to frustration with life and is recognized and realized. Human lethargy is having negative power. In their assurance an immense proportion of people physical activity has reached a satisfactory level, while on the other hand many persons in our civilization have a weak condition as a consequence of hypo kinesis. The modern juvenile generation is rising as inactive TV-viewers and computer players in the face of an increasing and alarming quantity of developmental and kinetic disorders. No other scientific indication is more ignored than the results on the necessity of physical activity for prevention of degenerative consequences in older age (Hošek, 1999).

Investigations on contribution of sport for the life of man have so far not introduced unambiguous arguments both in the field of bio-medicine and in the psychosocial sphere. The reason of that state is in the difficulties of methods in epidemiological studies, multitudes of not controllable influences, and in problems of participation as far as level and frequency of sporting is concerned... (Hošek, 2000). Researches are directed very often on ascertainment of health state, but much less they are dealing with analyses of behaviors for health, with subjective evaluation of physical condition and psychic well being. Those fields cannot be studied objectively and normatively, but they should always be grasped as internal experience, i.e. in the relation to the individual and his (her) life satisfaction.

The development of problems of psychological well-being has brought further attention to the role of exercise and sport participation in the improvement of the quality of life in the population. The medical definition of the quality of life points out maintenance of normal functioning and absence of enfeeblement. However, there is a greater acceptance of the importance of the subjective ground of the quality of life characterized by WHO. This definition includes constructs like satisfaction, subjective well-being, emotional adjustment, stress

and anxiety levels, coping with life problems, social functioning as well as absence of mental illnesses and disorders (Fox, 1999).

Vocational literature refers to the role of sport in alleviating mental illnesses and improving mental well being (Fox, 1999). General spheres addressed in that literature are as follows: depression, anxiety and stress, emotions and affectations, self-esteem and self-perceptions, quality of sleep, and negative effects of exercise. Sport is now being considered in the context of: treatment as well as prevention of mental illnesses and disorders, improvement of quality of life and mental well-being.

SELF AND PHYSICAL SELF

Many characteristics comprise a person's personality: achievement orientation, interest to be sociable, aggressiveness, need for order, disposition, and so on. One of the most important personality characteristics in every person's life is self-esteem, which can be defined in terms of cognitive generalizations derived from past experiences. Since people are not isolated from their environment, a person's practical knowledge/experiences impact his or her self-esteem. Since a person's physical attractiveness is known to be a major factor in his or her experiences, it is logical (as well as empirically documented) to be a substantial influence on self-esteem. The research shows that improving a physical trait improves attitude, personality, and self-esteem. Likewise, improving physical attractiveness improves interpersonal interactions. These more positive interactions are internalized intrapersonally (within a person), with direct, corresponding impact on the person's self-esteem (Patzer, G. L., 1997).

Sociometer theory proposes that self-esteem is an adaptation which evolved to monitor and regulate interpersonal relationships. It is therefore sensitive to self-assessments in domains relevant to relational desirability. Positive relationships between self-perceived physical attractiveness and self-esteem found in previous studies Bale, Ch. (2013).

The topic of self-respect seems to capture universal interest. Not only has it attracted more attention than any other psychological construct, it has attended significance at the institutional level in educational, corporate, and government policy and it has also captured meaning among the public. Self-satisfaction is widely accepted as a key indicator of emotional stability and adjustment to life demands and therefore a critical contributor to subjective well-being. High self-esteem has been related to a range of positive qualities such as life satisfaction,

positive social adjustment, independence, adaptability, leadership, resilience of stress, and high level of achievement in education and work (Fox, 1999).

Low self-esteem is closely related to elements of mental illness and to absence of mental well-being. It frequently accompanies depression, trait anxiety, neuroses, suicidal inclination, sense of hopelessness, lack of assertiveness, and low perceived personal control. Improved self-esteem has therefore been frequently used as a target for change and success creator for psychotherapy (Wylie, 1979). Self-perceptions are closely implicated in choice and persistence in a range of achievement and health behaviors and many contemporary theories of human motivation feature elements of the self (Biddle, 1997).

In today's modern society the interest in one's own person, the appearance and also the awareness in the functionality of one's own body is growing. The body image as an important part of the general self-concept gets this way into the interest of the public.

The body image is understood as a complex of all imaginations that are related to the human body. Therefore it is characterised by cognitive (knowledge, convictions), affective (evaluation, self-confidence) and behavioural (related to behaviour) components. Appearance and functionality of our body influence basically our physical and psychological condition and also our behaviour. The relation to the body develops and changes during the whole human life. It is influenced by gender; age, sometimes by education, standard values or physical activities (Fialová, 2001).

We observed and analysed the relation to the body not as independent aspects of individual lifestyles but as the components of the basic body concept. Physical satisfaction is the result of individual experience linked to one's own body. In many dimensions the social environment also determines it. There is a large amount of information about sport activities and their influence on one's own health, but little is known about the area of intentional, planned behaviour, which contributes to one's own health. The subjective mental representations about one's body are very important for a positive change in the health behaviour - changes in physical activity, nutrition and health habits.

Physical activity contributes to the quality of life through the development of motor efficacy, which is essential for locomotion and functioning of human. The relation between physical activity and quality of life is not only concerned to mechanical motor efficacy, movement and health; it is also an instrument of self-realization. The effects of physical activities may be summarized as follows:

a group of enriching effects (heuristic, socializing, cultivating, creative and integrating), a group of coordinating effects (regulating, stimulating, adaptive, corrective and protective), a group of vitalizing effects (conditioning, health supporting, contra-involitional), a group of compensating effects (relaxation and regeneration). It is especially sport psychology that may contribute to clarification of all those effects-especially the hedonistic and aesthetic effects – as it is demanded in the post-modern society (Hošek, 1999).

RESEARCH RESULTS

The adults (n 400, 200 men and 200 women) in age 30 to 60 years (sporting people 272, not sporting 128) were asked (Questionnaire “Health, Sport and Physical Self in west-, middle- and east Europe”) for some objective data concerning their health (number of days of illness during the last year, number of diseases ...) as well as for some subjective data (satisfaction with the own health, body, self ...). The concluding part presents comparison results of Czechs (n 400), Germans (n 400) and Russians (n 400) - whole 1 200 persons. The differences in results were tested using t-test. Statistical significance was accepted at 5% alpha error. Statistical analysis was done by program SPSS.

Table 1 presents differences in behaviors for health between the sporting and non-sporting individuals, table 2 and 3 evaluation of their own satisfaction.

Table 1. Behavior (sporting people 272, no sporting 128)

	Sport	No sport	F	p
Smoking	1.2	1.4	.032	.006 *
Number of cigarettes	12.7	13.7	62.923	.000 *
Drugs	1.2	1.1	.210	.594
Anticonception	1.3	1.2	25.858	.018 *
Healthy nourishment	3.1	2.9	.574	.000 *
Control of weight	3.0	3.1	.299	.247
Acceptance of medicine	1.9	2.0	.065	.647
Regular visits at a physician	2.3	2.2	.003	.070
Reduction of stress	2.4	2.2	1.059	.213
Lowered acceptance of alcohol	3.1	2.9	4.467	.000 *
Keeping a regular day regimen	2.9	2.9	.313	.254
Staying in open air	3.7	3.5	.149	.765
Spa	1.3	1.2	.102	.086

The values are arithmetic means of 5 point scales (1 = never, 5 = very often)

** marks groups significantly differing from other*

The sporting persons care more of a healthy way of living, they visit more regularly the physician, smoke less (and if then a lower number of cigarettes), they make efforts to limit alcohol drinking, the sporting women make pains to be on guard against unintentional gravidity applying anticonception. The sporting population evaluates higher their nourishment. In both groups it is the habit that is introduced as the most frequent reason for consumption of unhealthy meals, with lack of time as the second reason.

Table 2. Personal satisfaction

	Sport	No sport	F	p
Appearance	3.0	2.6	5.984	.015 *
Figure	2.9	2.3	3.986	.047 *
Height	3.6	3.5	.412	.521
Weight	2.8	2.3	1.252	.264
Health	3.4	3.1	.068	.003 *
Self	3.1	2.8	1.744	.187

The values are arithmetic means of 5 point scales (1 = not at all, 5 = wholly)

** marks groups significantly differing from other*

Table 3. Satisfaction with self and body in men and women

	Women	Men	F	T test
Appearance	2.8	3.0	2.353	.126
Figure	2.5	2.9	9.839	.002*
Height	3.5	3.6	.729	.394
Weight	2.4	2.8	.050	.823
Own person	2.9	3.1	.528	.468

The values are arithmetic means of 5 point scales (1 = not at all, 5 = wholly)

* marks groups significantly differing from other

The sporting individuals introduced a higher rate of satisfaction in all followed aspects. The significant differences were found in the evaluation of appearance and figure. Higher satisfactions were ascertained with sporting individuals also in weight, health and evaluation of self in general. Men evaluated their figure significantly higher than women.

Table 4. Health troubles

	Sport	No sport	F	T test	Difference
Long- term health troubles	1.2	1.3	10.178	.095	-
Restless sleep	1.1	1.2	15.809	.041	***
Easy fatigue	1.1	1.3	20.166	.021	***
Headaches	1.2	1.3	19.680	.020	***
Back aches	1.4	1.5	2.104	.021	***
Digestive problems	1.1	1.2	27.962	.007	***
General weakness	1.1	1.1	6.038	.214	-
Gastric discomfort	1.1	1.1	7.531	.167	-
Heart trouble	1.0	1.1	6.450	.204	-

Point scale 1 = no, 2 = yes

Only a slight percentage of the followed persons admitted long-term health troubles. Backaches were among the most frequently introduced difficulties whereas heart troubles were mentioned in the least. On the whole the sporting population was found to be better in all ascertained parameters; they especially suffer not so often from sleep disorders, easily subjecting to weariness, digestive problems and head-and backaches.

The sporting adults declared a higher satisfaction with their own health and they also realized more own responsibility for their health. All these results

show the clear tendency towards control of behavior in sporting population. To sum up we can conclude that the general health status of the sporting adults is better than of unsporting people.

In conclusion we present also a short comparison of the Czech, German and Russian adult population (Mrazek, Fialová, Bychovskaja, 1998).

Table 5. Behavior and personal satisfaction in European context

	C	G	R	Duncan test
Sport %	68	71	28	C, G- R
Smoking %	24	29	39	C, G- R
Drugs %	14	17	5	C, G- R
Anticonception	13	17	7	C, G- R
Healthy nourishment	3.0	3.4	3.0	C, R- G
Control of weight	3.0	3.3	2.6	R- C- G
Acceptance of medicine	1.9	2.0	2.4	C, G- R
Regular visits at a physician	2.3	2.6	2.0	R- C- G
Reduction of stress	2.3	2.7	2.4	C, R- G
Satisfaction with self	3.0	3.6	3.4	G, R- C
Satisfaction with health	3.3	3.7	3.1	C, R- G
Satisfaction with appearance	3.3	3.7	3.8	R, G- C

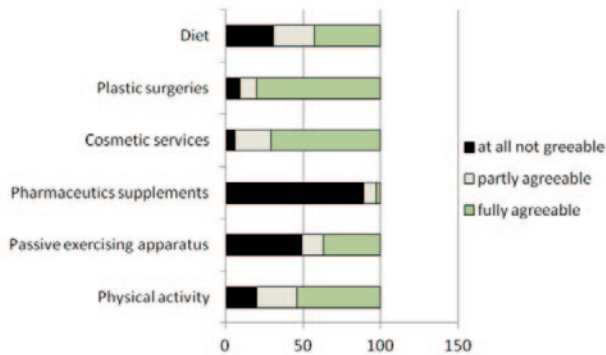
*The values are in % or arithmetic means of 5 pointscales (1 = never, not at all, 5 = very often, wholly)
C- Czech Republic, G- Germany, R- Russia*

In Germany most mature behaviors for health were ascertained. The adults in Cologne and Prague go in for sport more often than those in Moscow. The German adults also visit physicians more regularly; they care of their healthy nourishment, and check their weight. From the three investigated nationalities they are the individuals that care of health and its insurance at the most.

The Prague adults evaluated themselves lower than the others, especially ntheir appearance and general self. However satisfaction with own health was highest in Cologne and lowest in Moscow. The adults from Moscow introduced the highest satisfaction with their own appearance, figure, weight and own person on the whole. Adults in Prague were mostly in between the ascertained values in Moscow and Cologne.

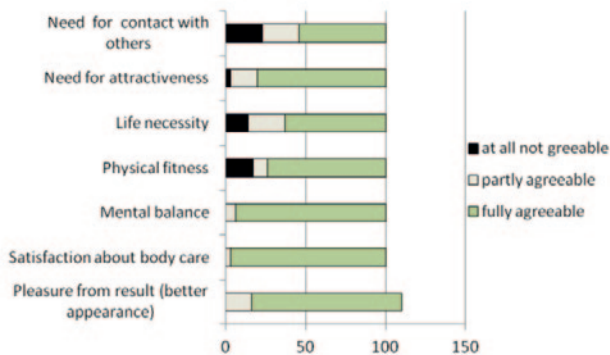
We were also interested in preconceptions for overweight people and their evaluation. In the view of the sample slim people have the better choice of partners

(men and women too), they are believed as penetrating and successful. Slimmer women used to be more fruitful, slimness is related to the admiration rate. No preconceptions were founded at relationship in overweight and advancement and in attractiveness and character.



Graph 1. Preferred activities in body care

To preferred activities for women belong using of plastic chirurgie apparatus (80%), cosmetic services (71%) and physical activity (54%). Physical activity could be walking with the dog, not intensive sport activity. The sample women quite reject pharmaceutics supplements (89%).



Graph 2. Motivation to body care activities

Motives for use of some beauty tools show that women wish to look well (80%), and get a feeling of satisfaction about correct body care (97%) and pleasure of good appearance (94%). 63% women are moderate using of all tools as a life necessity. Less important motive is contact with other people (54%).

CONCLUSIONS

We found differences in health related behavior between sporting and unsporting people. Involvement in sports influences behavior and personal satisfaction positive.

In sporting individuals more mature behaviors for their own health were ascertained, which manifested itself in caring-in contrast to the non-sporting persons-more of healthy way of living, more regularly visiting the physician, also smoking less and paying more attention to their body with respect to its functioning, health and appearance. The above presented results support ideas on the importance of sport for health of contemporary citizens, especially for their psychic well-being and feeling of satisfaction, and in that way also positive impact on the quality of life.

It was found out that adult persons, who do not go in for sporting in their free time, were less ill in the last year, but as a rule they suffered more from psychosomatic difficulties, above all restless sleep, easily coming weariness, digestive problems and head-and backaches. That part of population is less satisfied with their health and in comparison with the sporting individuals they evaluate their health as worse. Also the other results concerning the relation to own body and rates of satisfaction with their body (appearance, functioning and fitness) as well as with own person on the whole discloses that the sporting population is more satisfied, disposes of a more mature approach to own person and is able to cope better with different difficulties. In adults sporting in their free time the psychic health and feeling of well-being is evaluated higher than in adults with passive programs of free time.

In comparison Prague-Cologne-Moscow the greatest morbidity was found in Russians and the least in Czech adults. Czechs introduced significantly more often backaches than the others, Germans complained more often about restless sleep and easy weariness, Russians pointed out especially digestive problems and difficulties in the heart region. Germans evaluated all followed health aspects as better, Russians on the contrary as worse than others. The greatest fear of getting ill-which is certainly connected with social situation of the questioned persons-was ascertained in Moscow, and the least in Cologne. Also the other parts of the questionnaire confirmed a greater orientation of adults from Cologne on internally motivated behavior (sport first of all as entertainment, greater interest in their own health, mature behavior as prevention against illness...). Unlike those findings in Moscow adult's motivation was more fre-

quently directed to external effect (pointing out nice appearance, but neglecting health oriented behavior, sport for performance...). The Prague adults were rated between the people from Cologne and Moscow in the greatest part of followed aspects.

Sociocultural factors, as well as genetics, are implicated in the prevalence, etiology, and phenomenology of eating disorders (Becker, Keel, Anderson-Fye & Thomas, 2004). The processes of Westernization, modernization, industrialization, urbanization and social transition have been offered as reasons for the cross-cultural spread of eating disorders, but none of these processes fully explain emerging patterns (Anderson-Fye & Becker, 2003).

The cross-cultural knowledge of body image and eating concerns among children and adolescents comes from several sources. Individual school-based surveys are most common. Increasingly, larger multisite and community-based epidemiological studies are being conducted to try to catalogue prevalence and incidence rates around the world. Common problems with adolescents are obesity on the one hand and eating disorders on the other hand. Life style and body ideal influence our physical self.

Social developmental goals of adolescence may also vary significantly cross-culturally. For example, individuation and identity formation are considered key goals among U. S. adolescents, and weakness in these areas has been linked with disordered eating (Strong & Huon, 1998). In societies that are more collectivistic and communally focused, assumption of full adult roles may lead to different sorts of adolescent's achievements. It is not known how such variable developmental goals would relate to the development of body image and eating disorders. For example, among adolescent females, it were the upwardly mobile girls who had lived outside of the country and had personal goals conflicting with those considered „traditional“ who reported eating-disorder symptoms in Curaçao (Katzman, Hermans, Van Hoeken & Hoek, 2004). In contrast, immigrant Asian girls who were less acculturated (Jennings et al., 2005) and classified as more traditional (Mumford, Whitehouse & Platts, 1991) in Australia and Great Britain, respectively, reported more disordered eating attitudes. Even subcultural context can affect eating disorder risk as was found by type of school in Israel, with those on a kibbutz reporting the least amount of eating pathology and those in a secular boarding school the most (Latzer & Tzischinsky, 2003). The actual mechanisms and pathways by which such variables take effect are still relatively unknown around the world and would benefit from more in-depth ethnographic and ethnopsychological study.

The cross-cultural data are not only important for understanding global mental health issues, but also raise many interesting questions about nature, etiology, variation, and measurement of eating disorders. Because sociocultural factors are well-established contributors to the individual development and societal expansion of eating disorders (Anderson-Fye & Becker, 2003), the cross-cultural data provide a unique lens through which to examine these factors in particular, although genetic, psychological and other factors may also eventually benefit by cross-cultural comparisons.

THE PHYSICAL SELF-PERCEPTION PROFILE AS AN EFFICIENCY MEASUREMENT TOOL OF PSYCHOMOTOR THERAPY

Eva Chalupová

INTRODUCTION

Despite the fact how widely we see ourselves as spiritual entities, we are primarily physical beings, inevitably tied to our physical bodies.

We start to perceive the appearance and abilities of our body relatively early in our development and we shape a kind of mental abstraction – our physical self - in interactions with the outside world.

Our body is the main means of social communication; it expresses our status, sexuality, health and emotions. It reflects our thoughts and behavior, exposes us to the attention of others. Sometimes we take advantage of this and use the body language to communicate what we want others to know about us. We too, are looking for personality traits and interests of others in their physical appearance. Our physical self is, therefore, regarded as our public self.

Moreover, if we take into account how much attention in today's society is paid to health, fitness, sports, attractiveness, healthy diets and fashion, it is not surprising that physical self-concept proves to be one of the most important predictors of self-esteem, especially among adolescents and young people.

The research of the self has gone through a long historical development, and multidimensional nature of overall self-concept is now recognized. This allows us to focus on physical self-concept particularly as related to other constructs.

The influence of physical self on the overall self-esteem is largely explained by evaluating one's own physical appearance. The development of new measurement tools enables us to also capture the perceived sports abilities, strength, stamina and overall fitness and health. Physical self is not just a one-dimensional concept for us – physical appearance – which can hardly be controlled through sport or regular exercise. Improving of the multidimensional physical self becomes one of the main objectives of various physical activity programs. Increased physical self-esteem is related to changes in overall self-esteem,

which is generally considered to be an index of mental health and life satisfaction, but it may in itself also be the cause of psychological well-being improvement (Fox, KR, 2000).

The mechanisms of change in physical self and self-esteem are not yet fully understood. The advance made in current research is that we are able to measure physical self and possess the tools for the evaluation of its change and testing its relations in the nomological network of self-concept, self-esteem, sport and exercise.

Physical self was conceptualized in different questionnaires. One of the latest is the Physical Self-Perception Profile (Fox, KR & Corbin, CB, previously 1989), originally validated for the student population in the USA.

QUESTIONNAIRE DESCRIPTION

The Physical Self-Perception Profile (PSPP) by Fox and Corbin (Fox, KR & Corbin, CB, Fox, KR, 1989) was originally validated by the authors on samples of American students, Sonstroem, Speliotis and Favo (1992) did the same for the adult population. The tool was validated and its reliability (with a slight modifications of words) also confirmed for the population of high school students (Whitehead, R. J. & Corbin, C. B., 1988). It was adapted for children as the Children and Youth Physical Self-Perception Profile (Whitehead, JR, 1995), and as the PSPP-A for the ageing population (Chase 1991), with the subscales of physical self-esteem, appearance, functional capacity, sports competence and health status. The main advantage of the tool is that it was created on a strong theoretical basis and qualitative research of the domain content.

In the design of the questionnaire, the authors utilized Harter's methodology (1985b) which identifies the main domains or subdomains of the self-using a questionnaire with open-ended questions and interviews, and then it constructs short subscales for independent evaluation.

In an effort to capture the full-scale of perceptions, there are entries in the profile that produce responses focused on the process (some people, it seems, learn sports skills very slowly), the product – the result (some people are good at most sports) and the degree of confidence (some people feel very confident when it comes to sport) in each subdomain.

5 subdomains of physical self were identified when designing the PSPP: sports competence (the perception of sports skills, ability to learn sports skills and confidence in the sports environment)

physical fitness (the perception of the level of physical fitness, stamina and prowess, of the ability to withstand exercise and of the feeling of security in the gym and workout environment in general)

physical attractiveness (the perceived attractiveness of the body and physique, the ability to maintain an attractive body and the security related to appearance)

physical strength (the perceived strength, muscle development and security in situations requiring strength)

physical (bodily) self-esteem (represents the overall physical self-esteem; the items contained therein avoid references to the content of any of the subdomains, but they reflect the general feelings of happiness, satisfaction, pride, respect and confidence in the physical self; this subscale is created for capturing the gestalt of physical self following the same principles used to ascertain (Rosenberg, 1979) and conceptualize (Harter, Marsh and Shavelson, 1985) the overall self-esteem.

This is a multiple choice (4), structured alternative format in order to avoid socially desirable answers (Harter, S., 1985b). Using an example unrelated to the content of the questionnaire, the subjects are initially asked to classify themselves as for the kind of person which best describes them, and then they decide to what extent they constitute that type of person. Each subscale consists of 6 questions scoring 1–4, the maximum number of points is 24.

The Perceived Importance Profile (PIP) is a complementary part of the PSPP. Its design is based on the definition of self-esteem using the discrepancy between the current self-concept and importance (Harter, S., 1985, 1986, 1989). In this eight-item questionnaire, the subjects are asked to describe the perceived importance of competence in each of the four subscales (except the physical self-esteem subscale) for their overall self-esteem. Thus, the PIP enables us to see the discrepancy between the perceived competence and the importance of this competence. Each PIP scale contains 2 items scoring 1–4, the maximum number of points is 8. According to Harter (1986) the scale in which the subject scores 5 points or more is “important”. Marsh’s study did not confirm this hypothesis (Marsh, HW, 1994), but the works of Marsh and Sonstroem (1995) showed that the scores of the perceived importance made the prediction of participation in the exercise more accurate.

The PSPP has been converted into many languages and cultures, data on the Korean (Seong, C.-H., Kim, BJ, & Yu, T., 2000), Turkish (ASCII FH, ASCII, A.,

& Zorba, E., 1999), Flemish (Van de Vliet, P. et al., 2002), and British releases (Page, A., Ashford, B., Fox, K. R., & Biddle, S. J. H., 1993) has been published.

THE PSPP UTILIZATION

The PSPP is useful for mapping physical self-levels in various population groups, as part of the EXSEM model for research on the relationship between physical self-concept, self-esteem and exercise behavior, for the determination of attitudes towards physical activity and for determining the relations between physical self and other constructs, such as life adjustment (measured as depression, perception of physical and mental health etc.) or quality of life.

The PSPP is used as a tool for the retrospective examination of factors affecting individual or gender differences in the current self-concept level of the population studied, such as the somatotype, appearance, level of physical education at school, sports experiences from childhood, parent's participation in sports etc.

Finally, it is also a useful tool for the assessment of the psychological effect of various locomotor and exercise programs, like weight reduction programs using movement or a psychomotor therapy. It could be used as a clinical screening instrument for physical self disorders (anorexia, addiction) as well.

THE CZECH VERSION OF THE QUESTIONNAIRE AND ITS USE FOR MEASURING THE EFFECT OF KINESIOTHERAPEUTIC LOCOMOTOR PROGRAMS

The transcultural rendering of the questionnaire was done by the author of this paper (Tomešová, 2005, Tomešová and Štochl, 2006). The questionnaire was translated and the reliability and content, factor and predictive (criterion) validity of the Czech version were verified. The Czech version of the Physical Self-Perception Profile for children and youth (Whitehead, JR, 1995) was compiled by Šmídová and TOMEŠOVÁ (2008).

The set of data in Tables 1 and 2 can be considered a basic "standard". There are the following three sets of data:

Group A consisted of 194 second year full-time and first year distance learning students at FPES, Charles University, Prague, attending mandatory courses of psychology, and third and fourth year students attending optional anthropometry classes. The sample consisted of 112 females (mean age 22.85, SD = 4.19) and 82 men (mean age 23.43, SD = 4.97).

Group B consisted of 70 students of the Faculty of Electrical Engineering, Czech Technical University and the Faculty of Humanities, Charles University in Prague, attending psychology seminars. There were 40 males (mean age = 22.39, SD = 2.39) and 30 females (mean age = 21.1, SD = 1.6).

Group S consisted of 28 females commencing a STOB (stop obesity) course in Prague (mean age = 43.3, SD = 14.48, mean BMI = 32.3, SD = 6.8).

The data obtained in the group of FPES students is considered an ideal comparative standard. Here, we expect very good physical self perception and well expressed self-schemata relating to the body and other physical self components (Marcus H., 1980). According to Linville (1985), Spencer et al. (1993), Blatný and Osecká (1997) physical subdomains should therefore be more differentiated in content, they should contain more parts which should be more complex, and should be built on the more diversified foundations. This enabled us to obtain the “ideal” physical self perception content for the population in this country. Considering that the PSPP questionnaire is designed to evaluate the efficacy of a locomotor program, it should, through its content, be able to capture a more significant improvement of physical self-perception where an individual no longer bases his or her self-esteem only on physical appearance, but also on their perceived bodily fitness, on the fact that they are able to learn a sports skill, can lift a heavier object single-handed etc.

For the nonpracticing population, group B data could constitute the ideal standard; with university students, no particular pathology or deviations from the general population of young people is expected.

With regard to the planned use of the PSPP for psychiatric patients we provide the data from the group of obese women with low physical self-perception.

When using the PSPP to measure the effectiveness of psychomotor therapy the following should be considered:

1. It takes approximately 15 minutes to complete the questionnaire so it is advisable to motivate patients appropriately, for example by offering the interpretation of the results. The results, especially if patients also fill in the PIP, could be motive for a separate therapeutic topic – the relationship to one's own body.
2. A discrete completion of the questionnaire with a therapist may prove to be more appropriate.

3. With elderly patients, using the PSPP-A version (older people) is worth considering.
4. It will be necessary to obtain the pilot data set from psychiatric patients and verify the validity and reliability of the PSPP.

Table 1. Comparative standards in different PSPP scales – Males

SCALE	group A (N = 83)		group B (N = 40)	
	average	standard deviation	average	standard deviation
SPORT	19.30	3.08	14.28	4.60
FITNESS	18.81	3.01	14.98	3.65
BODY	16.16	3.02	15.65	2.93
STRENGTH	15.90	3.16	14.20	4.06
PSP	17.90	3.04	15.70	3.14

Table 2. Comparative standards in different PSPP scales – Females

SCALE	group A (N = 112)		group B (N = 30)		group S (N = 28)	
	average	standard deviation	average	standard deviation	average	standard deviation
SPORT	17.83	2.85	15.07	4.00	13.75	4.57
FITNESS	17.97	2.64	15.10	4.16	12.96	3.65
BODY	15.06	3.80	16.57	3.36	9.82	3.2
STRENGTH	15.90	2.95	14.83	3.65	12.1	3.47
PSP	16.30	3.14	15.23	3.42	11.57	3.23

PSYCHOMOTOR THERAPISTS SHOULD TAKE INTO ACCOUNT THE PHYSICAL SELF-PERCEPTION OF PEOPLE WITH SCHIZOPHRENIA WHEN PRESCRIBING PHYSICAL ACTIVITY

Davy Vancampfort, Michel Probst

INTRODUCTION

The potential for recovery from schizophrenia, and reintegration into the community, is considered multi-factorial and extends beyond symptomatic remission (Law & Morrison, 2014). Good physical health should, for example, be an important goal in the multidisciplinary treatment of people with schizophrenia as well (De Hert et al., 2011). Psychomotor therapy programs that consider physical activity are therefore essential (Probst, 2012; Stubbs et al., 2014). Physical activity does not only improve quality of life in this population (Rosenbaum et al., 2014), but also reduces cardiovascular disease risk (Vancampfort et al., 2009, 2010). However, participation in physical activity and exercise is significantly lower among people with schizophrenia compared to the general population (Vancampfort et al., 2012). Research is therefore urgently required in developing evidence-based cognitive-behavioural interventions for increasing physical activity that are tailored to this population. Within the general population, researchers have identified modifiable, theory-based predictors of physical activity that have formed the basis for cognitive-behavioural interventions aimed at changing physical behaviour (Prochaska & Marcus, 1994; Ryan et al., 2011). Several cross-sectional studies (Gorczynski et al., 2010; Beebe et al., 2012; Vancampfort et al., 2013) in people with schizophrenia incorporated these theories and demonstrated that social support, perceived benefits and intentions, but also the physical self-perception are consistent, modifiable theory-based physical activity correlates among persons with schizophrenia. In this chapter we will focus in particular on the physical self-perception as an important correlate for physical activity participation in people with schizophrenia. We will first give a brief overview of the scientific literature on the physical self-concept and will relate the physical self-concept with motivational aspects towards physical activity. Afterwards, we will go more into detail on the assessment and current scientific evidence of the physical self-perception in people

with schizophrenia. Finally, we will, based on the current scientific evidence, present some general clinical recommendations for psychomotor therapists.

THE PHYSICAL SELF-PERCEPTION: A BRIEF HISTORICAL OVERVIEW

Since the original work of James (1890), one of the first who highlighted the importance of the self and introduced the term self-esteem, researchers have published a significant number of articles regarding the nature of self-concept and its relation to other constructs. A great deal of research has been conducted over the past decades examining the nature and the development of self-concept. While some researchers (e.g., Rosenberg, 1979) suggested that the self-concept was an unidimensional entity reflecting a general view of the self, there is a general agreement now among researchers that the self-concept is a multifaceted, hierarchical, and dynamic construct (e.g., Shavelson et al., 1976; Harter, 1988; Marsh & Redmayne, 1993). Specifically, Shavelson and his colleagues (1976) have proposed a model (see Figure 1) where general self-concept is at the top of the hierarchy with the academic self-concept, social self-concept, emotional self-concept, and physical self-concept being considered as second order factors. Academic is further subdivided into subject-specific subdomains (English, history, math, and science). Social self-concept is subdivided into peer and family self-concepts, while physical self-concept is subdivided into physical ability and physical appearance self-concepts. Shavelson and his colleagues (1976) proposed that the facets of self-concept at higher levels of the hierarchy are more stable than the facets found in lower levels of the hierarchy.

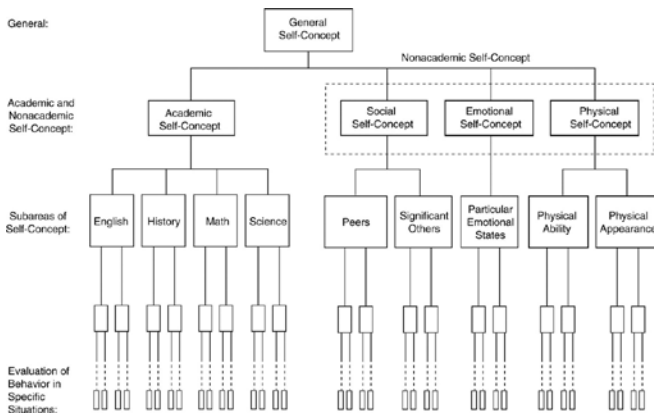


Figure 1. The self-concept model of Shavelson (1976)

Marsh (1987) has provided the best empirical support to date for the multidimensionality of the self-concept, as proposed by Shavelson et al. (1976). The advantage of this model is that it enables the examination of the separate domains of self-perceptions within the hierarchical framework and provides the means for explaining how each domain is structured and contributes to global self-concept.

In more recent years, researchers in the area of sport and exercise psychology have incorporated Shavelson's multidimensional, hierarchical self-concept model into their research. Fox and Corbin (1989) proposed a multidimensional and hierarchical model of physical self-concept which is consistent with Shavelson's approach. The model posits that global self-esteem is at the top of a hierarchy, followed by the physical self-worth at the domain level, and sport competence, attractive body, physical strength, and physical condition at the sub-domain levels.

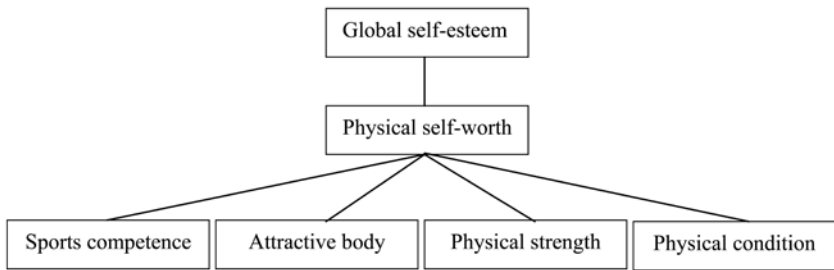


Figure 2. The physical self-concept model of Fox and Corbin (1989)

THE PHYSICAL SELF-CONCEPT AND MOTIVATION TOWARDS PHYSICAL ACTIVITY

The self-concept has also been considered as an important factor influencing the motivation level of a person. For example, the self-determination theory (SDT) discusses the relationship between global self-esteem and motivated behaviour. SDT is uniquely placed among theories of human motivation to examine the differential effects of qualitatively different types of motivation that can underlie behavior (Deci & Ryan, 1985, 2000). Originating from a humanistic perspective, hence fundamentally centered on the fulfillment of needs, self-actualisation, and the realisation of human potential, SDT is a comprehensive and evolving macro-theory of human personality and motivated

behavior (Deci & Ryan, 1985, 2000). SDT may provide insight into reasons why patients with schizophrenia adopt and maintain certain health behaviors. Specifically, SDT proposes motivation to be multidimensional and residing along a continuum of increasing self-determination. The regulation towards physical activity can be amotivated, extrinsically motivated or intrinsically motivated. At the lowest end of the continuum is amotivation, in which case patients lack the motivation to act, either because they don't feel they achieve recommended targets or don't see the value of being active. Extrinsic motivation implies that a patient engages in the behavior to achieve outcomes that are separable from the behavior itself. Within extrinsic motivation there is a continuum of behavioral regulations, reflecting the degree of autonomy or self-integration. External regulation refers to exercising to avoid punishment and other-disappointment or to obtain promised rewards or other-appreciation. While external regulation is associated with external pressures to engage in physical activity, introjected regulation refers to the imposition of pressures onto one's own functioning, for instance, by buttressing one's activity engagement with feelings of guilt, self-criticism, or contingent self-worth. Both external and introjected regulation represent controlled types of motivation as individuals will likely feel pressured to perform the behavior. For identified regulation on the contrary, the behavior is performed more willingly even though the activity is not enjoyable. A person will participate in physical activity, because the behavioral outcomes are personally important, for example to improve mental health or physical fitness. The most self-determined form of the extrinsic motivation continuum is integrated regulation, in which case the physical activity level is consistent with other prevailing values and has become prioritized within one's lifestyle. Although these types of extrinsic motivation attain a separable outcome than the activity itself, identified and integrated regulation involve personal endorsement of the reason to engage in the activity and, as a result, are more likely to be accompanied with feelings of choice and psychological freedom. Finally, intrinsic motivation represents the most self-determined type of motivation and involves engaging in physical activity for its own sake, that is, because patients find them challenging or enjoyable. In conclusion, SDT highlights the importance of both quantity and type of motivation. More specifically, physical activity can be regulated by autonomous or volition (i.e. identified and intrinsic regulations) relative to more controlled or pressured reasons (i.e. external and introjected regulations). In relation to the self-concept, previous research in the general population (Wilson & Rodgers, 2002; Thøgersen-Ntoumani & Ntou-

manis, 2006) demonstrated that becoming autonomously motivated might be an important process by which individuals improve physical self-perceptions in physical activity settings. Individuals with low physical self-worth are likely to be concerned with the adequacy of their physique as judged by some socially defined standards. Research findings (Thøgersen-Ntoumani & Ntoumanis, 2006) suggests that being motivated to physical activity due to internal pressure or guilt is linked with feelings of apprehension about one's social physique. In contrast, being physically active due to the enjoyment of a particular activity or because one values the benefits of exercise are not likely to be related to concerns about one's body appearance. It is therefore plausible to state that autonomous motivation downplays social evaluations and alleviate concerns about one's physique. In conjunction, it might be suggested that people who feel compelled to physical activity by conforming to social pressures or constraints are unlikely to develop motivational patterns that either sustain physical activity involvement or promote overall physical self-worth.

HOW TO MEASURE THE PHYSICAL SELF-PERCEPTION IN PEOPLE WITH SCHIZOPHRENIA?

In association with the physical self-concept model, Fox (1990) developed the Physical Self-Perception Profile (PSPP), which assesses the four specific facets of physical self-concept as well as a more global physical self-worth. Each sub-domain therefore consists of six items presented on a four-point structured-alternative format. More in detail, for each item respondents must first decide which of two self-related statements they identify with and then decide whether that statement is "really true for me" or "sort of true for me." Some examples are presented below (from Fox, 1990).

Examples of Physical Self-Perception Profile (PSPP) items (adapted from: Fox, 1990)

	Really true for me	Sort of true for me			Really true for me	Sort of true for me
1.	<input type="checkbox"/>	<input type="checkbox"/>	Some people tend to feel a little uneasy in fitness and exercise settings	BUT	Others feel confident and at ease at all times in fitness and exercise settings.	<input type="checkbox"/> <input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel extremely confident about their ability to maintain regular exercise and physical condition	BUT	Others don't feel quite so confident about their ability to maintain regular exercise and physical condition	<input type="checkbox"/> <input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that compared to most, their bodies do not look in the best shape	BUT	Others feel that compared to most their bodies always look in excellent physical shape	<input type="checkbox"/> <input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that they are physically stronger than most people of their sex	BUT	Others feel that they lack physical strength compared to most others of their sex	<input type="checkbox"/> <input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel extremely proud of who they are and what they can do physically	BUT	Others are not quite so proud of who they are physically	<input type="checkbox"/> <input type="checkbox"/>

The result is a response spread from one to four per item and from six to 24 per sub-domain, with higher scores representing more positive perceptions. The PSPP has been used previously in patients with schizophrenia (Vancampfort et al., 2011a, 2011b). We advise psychomotor therapists to complete the PSPP as a semi-structured interview.

CURRENT STATE-OF-THE ART RELATED TO THE PHYSICAL SELF-PERCEPTION IN PEOPLE WITH SCHIZOPHRENIA

Bleuler (1911) and later Kraepelin (1913) emphasised the clinical importance of heterogeneous disturbances of body experience and the various bodily sensations in people with schizophrenia. The disturbed body experience of persons with schizophrenia became a topic of wide phenomenological interest (Priebe & Röhrlich, 2001; Röhrlich et al., 2009; De Haan & Fuchs, 2010). Different disturbances in body experience have been observed in this population, including bodily hallucinations, somatic delusions, coenaesthesia (i.e. the general feeling of bodily existence arising from the sum of bodily sensations as distinct from the particular sensations themselves), disturbances in pain perception, out-of-body experiences, dysmorphophobia, and self-injury or self-mutilation (Koide & Tamaoka, 2006). In clinical practice, individuals with schizophrenia also report symptoms of disembodiment like not feeling at home in one's body and more disintegrated feelings as if their body was being torn apart. They present abnormal thoughts about and attitudes towards the body as well as various pathological sensations. These symptoms are mostly seen as more specifically related to delusions and hallucinations (McGlichrist & Cutting, 1995). Apart from the specific clinical features, there might be a possible influence of somatic co-morbidity associated with increase in weight. Pharmacotherapy and its association with weight gain and related metabolic abnormalities, may lead to negative body image and self-esteem features (De Hert et al., 2006; Loh et al., 2008). Also the physical self-concept model of Fox and Corbin (1989) has been tested in people with schizophrenia (Vancampfort et al., 2011a, 2011b). First of all, the literature shows that patients with schizophrenia are less confident in their physical abilities and personal appearance (Vancampfort et al., 2011b). They perceive themselves as less capable to keep active and maintain an attractive body. The reduced perceived physical self-worth compared with healthy controls also indicates that they have a decreased general feeling of pride, satisfaction, happiness and confidence in their physical self. When comparing patients with schizophrenia with a higher body mass index with those with a lower body mass index, it was demonstrated that those with a lower body mass index are having an even more negative physical self-perception (Vancampfort et al., 2011b). It has been demonstrated as well that people with schizophrenia with lower levels of physical-self perception are, irrespective of the body mass index, less physically active and less physically fit than those with higher levels of physical-self perception (Vancampfort et al., 2011a).

TEN CLINICAL RECOMMENDATIONS FOR PSYCHOMOTOR THERAPISTS

The current literature indicates that psychomotor therapy programmes aiming at improving the physical and mental health related quality of life in people with schizophrenia will benefit from taking into account a reduced physical self-perception as a potential barrier (Vancampfort et al., 2011a, 2011b). In order to promote positive self-perceptions and based on the SDT-framework, psychomotor therapists should consider the reasons regulating physical activity when implementing interventions. In this regard, Deci and Ryan (1985) presented a cogent argument suggesting that autonomy can be developed by altering facets of the social context. More in detail, autonomous types of motivation stem from environments that support three psychological needs, that is the need for autonomy (i.e., experiencing a sense of psychological freedom when engaging in an activity), competence (i.e., feeling effective to attain desired outcomes) and relatedness (i.e., being socially connected) (Deci & Ryan, 1985, 2000). Psychomotor therapists should support patients' autonomy by offering clear choices, supporting the patients' initiatives, avoiding the use of external rewards, offering relevant information for changing physical activity behaviour and using autonomy supportive language (e.g. "could" and "choose" rather than "should" and "have to") (Ryan et al., 2011). Feelings of competence are also attained when patients with schizophrenia experience success while participating in physical activity. Physical activities need to be tailored to the capabilities of the patient and sufficient instructions, practice and positive feedback are needed. Also relatedness with the psychomotor therapist and other peers is important. Psychomotor therapists need to show enthusiasm and interest in their patients. Offering group sessions could increase the feeling of relatedness and decrease the feeling of being isolated (Ryan et al., 2011). Considering the current evidence in people with schizophrenia (Vancampfort et al., 2011a, 2011b, 2013), the following recommendations might be useful in stimulating autonomous motivation and consequently physical self-perceptions in persons with schizophrenia:

1. Give information about mental and physical health benefits of physical activity.
2. Help people with schizophrenia to find a form of physical activity that they really like to do.

3. Draw up an individual action plan with the patient taking into account emotional, cognitive and physical barriers.
4. Assess the baseline aerobic fitness and physical activity level in order to be able to measure progress.
5. Formulate together with the patient specific, measurable, acceptable, realistic and time-bound goals.
6. Adapt a physical activity programme to the individual's expectations.
7. Praise the patient with constructive and visual feedback.
8. Focus on enjoyment, perceived mental and physical health gains, reductions in physical discomfort, achievement of personal goals, mastery experiences and sense of control over the body and it's functioning.
9. Show enthusiasm and be interested in your patients.
10. Involve significant others and family members in the psychomotor therapy programmes.

In conclusion, the current literature clearly demonstrates that in people with schizophrenia not only obesity, associated medical conditions, and physical complaints interfere with their physical activity behaviour, but also physical self-perception variables. Psychomotor therapists should take into account these barriers when designing psychomotor therapy programmes for these patients. Grounded in SDT, such psychomotor therapy programmes should strive to foster perceptions of choice, competence, and enjoyment.

THE EFFECT OF PHYSICAL ACTIVITY AND AN INTEGRATIVE PSYCHOMOTOR PROGRAM ON PHYSICAL FITNESS AND MENTAL SATISFACTION

Martin Dlabal

DEFINING THE PROBLEM

The current understanding of the term psychomotorics is based on a holistic approach, which emphasizes the wholeness and integrity of an individual. A human being can be viewed as a whole, including the integration of organic systems, of the organism as a whole, the environment, and all their functions and relationships.

The psychomotor approach, unlike Cartesian dualism, defines the mind and body as two aspects of a functional system where one component affects and regulates the other. This effect is circular and is constantly evolving during the ontogenetic development of an individual. Psychomotorics can be defined as a process of interaction of psychic and somatic structures or systems and their functions as they develop in time.

This survey is based on the work of EL Rossi (1986), which, on the basis of an extensive psychobiological research, concludes that mind and body are connected components of a single information system. These two components are connected in the hypothalamus where the nerve impulses of the “mind” are transformed onto the hormonal messenger molecules affecting hormone production in the pituitary. Stimuli (stress, emotions, experiential knowledge) experienced on a mental level are, in this way, transformed into physical reactions that circularly affect the state of mind. This connection between the mental and the physical can be, according to Rossi, used in influencing the mental and physical condition of the individual. One option is opening up internal resources (experiential knowledge) of an individual on the psychomotor level and utilizing them in the development of another level. Physical fitness, for example, can facilitate adaptation to the outside world and thus influence the feeling of mental satisfaction.

This survey, based on the assumption of interconnectedness of the psyche and the body, strives to understand the relationship between physical activity and

the short-term integrative psychomotor program, and between physical fitness and mental satisfaction. It can be assumed that regular physical activity positively affects satisfaction with both physical fitness and the state of mind. It is also possible to believe that linking the feeling of satisfaction with physical fitness within the integrative psychomotor program positively affects mental-ity, and, vice versa, the satisfaction with the state of mind positively affects the reflected satisfaction with physical fitness.

The objectives of this research are focused on two areas. First, the research examines whether and how closely the performing of physical activity relates to the satisfaction with the physical fitness and the state of mind. Second, the research determines whether the physical and mental satisfaction can be affected by an integrative psychomotor program. The following basic hypotheses were formulated for the purpose of verification of these assertions.

H1: There is a significant correlation between the amount of physical activity undertaken and the physical fitness reflected.

H2: There is a significant correlation between the amount of physical activity undertaken and the mental satisfaction expressed.

H3: The reflected physical fitness of students after the completion of the integrative psychomotor program differs significantly from the physical fitness they reflected prior to participating in this program.

H4: The expressed mental satisfaction of students after the completion of the integrative psychomotor program differs significantly from the mental satisfaction they expressed prior to participating in this program.

METHOD

The research is carried out as a quantitative survey to verify the relationship between physical activity and the reflected physical fitness and the expressed mental satisfaction. Furthermore, the possible difference between the reflected physical fitness and the expressed mental satisfaction is examined among students before and after the completion of the short integrative psychomotor program.

THE RESEARCH SAMPLE

The research sample included the College of Education students in their first year attending the “Introduction to Psychology” course. Overall, there were 20 students in the sample, with 18 females and 2 males in it.

THE METHODOLOGY AND VARIABLES APPLIED

Values indicative of the level of physical fitness and mental satisfaction of the students surveyed were obtained through application of a ten-digit scale, where 0 marked the lowest and 10 the highest possible level of physical fitness and/or mental satisfaction. The students filled in the scale form before and after the completion of the psychomotor program. Furthermore, the students indicated on a five-digit scale (1–5), to what extent they were engaged in physical activity in their leisure time.

The data thus obtained was processed using the Pearson correlation coefficient, examining whether and how closely the two phenomena studied were related. A paired t-test was used for the verification of the effects of the psychomotor program.

PROCEDURE

A week before the opening psychomotor session, a research assistant asked the students to rate their satisfaction with their current physical fitness and state of mind on a ten-digit scale. In addition, students indicated on a five-digit scale, to what extent they were engaged in physical activity in their leisure time. The filling in of the scale forms was anonymous, nevertheless, in the end, the students were asked to mark their page with a special symbol, just in case they would want to verify the result in the future. Subsequently, the students engaged in a six-week long integration psychomotor program, incorporated within their “Introduction to Psychology” course. The psychomotor program involved a projection of one’s physical abilities and skills into one arm and the mental abilities and skills into the other. The students were then instructed to slowly direct their arms towards each other. After their hands touched, the students were instructed to allow their arms some time in order to exchange their respective abilities and skills.

A week after the completion of the program, all the students were given the scale forms on their current physical fitness and mental satisfaction.

RESULTS AND INTERPRETATION

- 1) The relationship between the amount of physical activity performed and the reflected physical fitness and the expressed mental satisfaction was verified using the Pearson correlation coefficient.

The relationship between the amount of physical activity performed and the reflected physical fitness.

$$r = 0.7478; p = 0.002$$

95% confidence interval: 0.4562–0.8944

The relationship between the amount of physical activity performed and the expressed mental satisfaction.

$$r = 0.3823; p = 0.0963$$

95% confidence interval: -0.07265–0.7055

2) The influence of the psychomotor program on the levels of physical fitness and mental satisfaction was tested by a paired t-test.

Tab. 1 Average values of the reflected physical fitness before and after the completion of the psychomotor program

Psychomotor program	Average	Stat. discrepancy	No. of students
First measurement	6.10	1.832	20
Second measurement	6.30	2.055	20

$$t = 0.6571; p = 0.5190$$

Tab. 2 Average values of the expressed mental satisfaction before and after the completion of the psychomotor program.

Psychomotor program	Average	Stat. discrepancy	No. of students
First measurement	5.80	1.508	20
Second measurement	6.30	2.296	20

$$t = 1.522; p = 0.1444$$

Tab. 3 Average values of the reflected physical fitness before and after the completion of the psychomotor program for students who primarily expressed a higher degree of mental satisfaction.

Psychomotor program	Average	Stat. discrepancy	No. of students
First measurement	6.75	1.982	8
Second measurement	8.00	1.690	8

$$t = 1.784; p = 0.1176$$

Tab. 4 Average values of the expressed mental satisfaction before and after the completion of the psychomotor program for students who primarily reflected a higher degree of physical fitness.

Psychomotor program	Average	Stat.discrepancy	No.of students
First measurement	6.80	1.304	5
Second measurement	8.80	1.095	5

$t = 3.651$; $p = 0.0217$

DISCUSSION

This exploratory study examined the relationship between the physical activity performed and the level of physical fitness and mental satisfaction. Further, the impact of the integrative psychomotor program on the reflected physical fitness and the expressed mental satisfaction was tested.

The acquired results confirmed a significant association between the amount of physical activity undertaken and the reflected physical fitness. The more an individual engaged in physical activity in their leisure time, the more satisfaction with their physical fitness they reflected. Physical activity also had a certain influence on the expressed mental satisfaction. This effect, however, was not statistically significant.

The obtained data did not confirm the beneficial effect of the short integrative psychomotor program regarding a significantly increased physical fitness and mental satisfaction. The psychomotor program, however, had a significant effect on a higher degree of mental satisfaction of students who primarily reflected a higher satisfaction with their physical fitness. The psychomotor program also had an impact on a higher physical fitness satisfaction of students who primarily expressed a higher degree of mental satisfaction. This effect, however, was not statistically significant.

The result of this study indicates that physical activity has a positive effect on physical fitness and, under certain conditions, also on mental satisfaction. These conditions include a higher degree of physical fitness satisfaction and the integrating of the experience of physical fitness satisfaction within the human psyche during psychomotor therapy. Thus, the research confirms the old Latin proverb "A healthy mind in a healthy body".

CONCLUSION

The study examined the relationship between physical activity, the reflected physical fitness and the expressed mental satisfaction. The impact of the integrative psychomotor program on the level of physical fitness and mental satisfaction was also tested.

The results obtained confirmed a significant correlation between the amount of physical activity performed and the reflected physical fitness satisfaction. In the case of mental satisfaction, such a relationship was not statistically documented.

The data obtained did not confirm the effect of the short-term integrative psychomotor program on physical fitness and mental satisfaction. The psychomotor program, however, had a significant positive impact on a higher degree of mental satisfaction of students who primarily reflected a higher degree of physical fitness.

PSYCHOMOTOR THERAPY AS A SUPPORTIVE FORM OF SELF-CONCEPT CREATION

Běla Hátlová, Milena Adámková Ségard, Hana Kynštová

PSYCHOTHERAPEUTIC APPROACHES TO WORKING WITH THE BODY

With psychotherapeutic approaches involving working with the body, the relationship of an individual to the self, their mind and body is at the forefront of attention. What we perceive and experience as our own identity is a result of interacting, relatively stable emotional and cognitive substructures of the dynamic system of personality.

- The body provides us with basic information about ourselves. It generates first signals about the condition of our inner self.
- The way we perceive and evaluate ourselves fundamentally affects our behavior and experience.
- Physical self-perception is a part of the overall self concept, it is a structure of conscious self-reflexion containing the attainment of knowledge in memory.
- The experience of the physical self is referred to as the body scheme.

The psychomotor approach perspective prompts the following question: What is the status of physical self-perception within the framework of the overall self-concept?

The development of the self-concept perspectives within the body schema is examined in the works of: Schilder (Schilder, 1923), Gendlin (Gendlin, 1962.), Feldenkrais (Feldenkrais, 1978), Fox (Fox, 1990), Jaspers (Jaspers 1997) Smith (Smith, 1999), Lowen (Lowen, 1975), Hölter (Hölter, 2011) and others. Historically, William James's (James, 1890) theory is fundamental for physical self-perception within the perception of the self. The way we perceive and evaluate ourselves fundamentally affects our behavior and experience.

The body is the innermost part of the material Self in each of us; and certain parts of the body seem more intimately ours than the rest (James, 1890)

For physical self-perception within the perception of the self, William James's theory is considered to be fundamental. James assumes that physical self-per-

ception is a part of the overall framework of the perception of our own self concept, and a structure of the conscious self-reflection containing the attainment of knowledge in memory.

In “Principles of Psychology” (1890) James distinguished two basic aspects of the self, “I-self” as an entity that has a consciousness of the unique personal experience which enables to distinguish the individual from others, and “Me-self”, which is a summary of all what one deems himself/herself. There are equal elements-constituents: material, social and spiritual. James classified body perception into the material self, which forms the basis of the hierarchical structure.

The body is the innermost part of the material Self in each of us; and certain parts of the body seem more intimately ours than the rest (Bernet et al., 1993). Physical self-perception is influenced by the development of the individual, their bodily experience, personality structure, appreciation by others and physical attributes. It is a way of an individual to perceive and contemplate his or her own body.

BODILY PERCEPTION AS PART OF SELF-ESTEEM AND OVERALL SELF-CONCEPT

Bodily experience enables us to understand not only ourselves, but also the meaning of our existence. It provides space for the creation of “I” and the boundaries of “I”. Hátlová assumes that the changes induced by conscious movement have an immediate impact on mental fiction (Hátlová 2003). The perception of the body and its needs stipulates the structural transformation of the mind and the state of consciousness.

Physical exercise enhances the perception of oneself through one’s own body. It evokes situations for expressing one’s feelings and experiencing through one’s body. It teaches individuals to stay in touch with one’s body in resolving intellectual processes. Emotion and experience – the perception of information through one’s body becomes a real object against which people can weigh their activity. Based on the changes in experiencing, new ways of conduct are developed. The understanding of our own experience enables us to intensify purposeful conduct and actively create our own world.

In the paper presented, the effect of psychomotor therapy in creating self-concept is affected by integrative psychotherapy approaches. Psychomotor therapy is a psycho-somatic therapeutic activity which helps patients to re-discover:

Mobility consciousness. It is an awareness of one's own body, its capabilities and consequently the ability of controlling one's own body. It deepens the positive experience of active perception of body parts in positions and movement, the perception of one's contribution to change.

Psychosomatic unity (unity of the physical and psychical). Movement is one of the connecting links of the inner and outer world. Deliberate, active movement execution is a physical and mental activity at the same time. It is a means expressing both the body and the psyche.

Positive self-acceptance recovery. The objective body image and its expression is often different from the subjective body image. The later is created on the basis of one's own experience with internal and external environment, including interpersonal relationships that may not be real in cases of mental disorders. In order to reestablish self-perception in terms of a more positive acceptance, it is necessary to opt for exercise with an adequate level of difficulty, which allows the patient to experience bodily changes brought about by their own will. Excessively difficult exercise could activate defense mechanisms.

Self-acceptance and integrity. In the course of physical exercise, each individual is guided towards awareness of his or her body, its positions, the process of movement, the working of his or her locomotor expression and its semantic aspect. At the same time, the participants are aware of the movements of others and the perception thereof. The perception of their own movements and the movements of others not only allows confrontation, but encourages a deliberate self-regulation of one's own movements. (The process of creating autonomy is particularly important in psychotic patients.)

Physical symbolism. Movement and body positions have a symbolic meaning. Therefore, we can express ourselves through movement (primarily used in dance therapy).

Emotional spontaneity. Given their life circumstances, patients are often made to suppress emotions related to the urge of expressing their needs and wishes. In the course of locomotor activity, emotional expression is not restricted, and, in many programs, it is initiated and seen as an adequate kind of self-expression.

Creativity. In the course of locomotor activities, spontaneity and creativity are deliberately encouraged.

Social acceptance. We assume that nonverbal communication facilitates making contact more easily. Our focus is on developing the perception of participation and cooperation, on the initiation of cognitive and communicative processes.

DANCE LESSONS AND THEIR IMPACT ON SOCIAL PHOBIA CLIENTS

Miroslava Papajiková

In this paper, I would like to describe my own experience with the use of dance movement in creating a more positive self-perception of a client, focusing on clients with social phobia. In this study, I draw from my own experience of an instructor of dance and movement improvisation. These courses are open to public, with no primary therapeutic objective. However, given the course syllabus and the conscious work with one's body, it is necessary to bear a therapeutic effect in mind.

My work with clients is based on the development of body awareness, ie. thinking about the body and movement patterns, chaining of muscle reactions and, in general about physiological relationships and processes in the body, in space and time. The client can easily understand the function of movement, integrate a new movement in his "expressive repertoire" and thus undermine their own movement patterns and release any physical blocks (often of psychosomatic origin). The client can naturally develop their movement skills, creativity, and thereby increase the feeling of security and "comfort" in their own (not only) dance expression.

In this paper, I am describing my own experience. In my practice, I use both classical and modern dance, yoga techniques and the principles of Laban Movement Analysis which is based on detailed research of movement structures from which it derives specific movement patterns and identifies the client stereotypes and physical (and potentially mental) blocks. This analytical method is followed by Bartenieff Fundamentals, a somatic system working with motion maps and conscious movement. This concept extends to verbal/linguistic, logical/mathematical, visual/spatial, bodily/kinesthetic, musical/rhythmic, interpersonal and intrapersonal intelligence, with the potential to cultivate all these spheres. Using analytical instruments and categorization, this concept makes physical and mental manifestations and processes conscious and puts them in relation to space and time, itself and the surroundings (Milgrom, R., September 22, 2013, "Conscious Body I. " seminar).

I approach movement from the point of view of motoric therapy, which considers movement an elementary manifestation of life, a symptom of change and activity, and a natural manifestation of all living organisms, which is, or used to be, a part of all important rituals as a way of communication and a means of connection with the natural cycles. (Matousek, O. 1999, p. 107). Movement facilitates tension and stiffness release, which are often an epiphenomenon of neuroses and stress (Matousek, 1999, p. 109). "Movement plays an important role in the overall fulfillment of the meaning of human life. Movement as an art form and conscious human movement cultivates and enriches people in everything they do. It extends our senses and consciousness ... Only with a better self-knowledge can we gain a better understanding of others and improve our interpersonal relationships. Relationships are, reversely, necessary for us to utilize our abilities..." (Milgrom, R. <http://www.tanec-terapie-vedometelo.cz/labarov-analyza-pohybu/>). Movement which the client integrates with the consciousness thus becomes a complex somatopsychic activity with the potential to increase the ability to find internal resources for its further development.

My clients are mostly mentally and physically healthy people with occasional psychosomatic problems of a common nature. Bohnice hospital patients - Bohnice Theatre Company members and the staff of Sphinx, a nonprofit organization (self-help association of people with social phobia or social anxiety), take part in my classes on an irregular basis. For many of them, my classes are therapeutical, although this is neither the primary focus nor the nature of my work. Even though I primarily try to develop the physical predispositions, I do realize that I (in a more or less pronounced way) also touch upon the psyche of the patients.

In my courses, I often face a situation where natural movement, which used to be an integral form of human expression, proves to be quite difficult for most clients. It seems that natural movement is being displaced from today's lifestyle; its lack causes many civilization difficulties associated with physical or mental harm (Matousek, O. 1999, p. 107). This deficiency is effected by changes in human activity, roles, functions and values. Technological progress is much faster than the biological capabilities of our body to adapt, and, in the context of modern times, renders our bodies almost faulty in design (Schwalbe B., Schwalbe, H. 1995, p. 92). These deficiencies can be redressed through exercise and a higher level of involvement of physicality, focused not only on performance, but on holistic perception as well. (B. Schwalbe, Schwalbe, H. 1995,

p. 93). In this respect, I consider conscious movement one of the most effective tools nowadays to achieve the harmony of body and soul.

In my work, I also cover the principles of dance therapy. Implementation of dance and movement in a process that strengthens the emotional, cognitive, social and physical integration of an individual is a means for achieving change. This method belongs among the psychotherapeutic body-oriented approaches (body-oriented psychotherapies) and the creative arts therapies. Dance movement therapy is based on continuous reciprocal interaction of body and mind, where dance and movement serve as a communication channel that reflects the personality (www.arttherapies.cz). Linking the physical and psychical, which naturally happens during exercise, is mainly caused by activating the nervous system, the state of which is then reflected in the quality of movement. The mobility and physical constitution of an individual greatly affects his or her self-perception and self-esteem, physical expression allows an easier and a more straightforward expression of emotions rather than their verbalization, finally, our sensory perception and thinking are embedded in movement (Hátlová, B. 2003, pp. 13–14). By changing and cultivation of movement, it is possible to develop our personality and positively transform self-perception of oneself (due to, among others, purely physical aspects such as weight loss, body shaping and motor skills or coordination (grace) improvement, as a result of movement exercise or dance).

Almost all kinds of movement yield these last-mentioned aspects, ie. any non-straining physical activity can be seen from this point of view as beneficial. However, for a holistic approach toward psychosomatic patients, some movements can be seen as more suitable than others. From my own experience I can derive that developing awareness works very well. My motor therapy sessions are based on the client's momentary physical condition and the awareness opportunities are used here for the mediation of clients and for building their own body awareness. The actual performance is not important, the patient is supported in finding their peak, not in trying to reach a particular extent or quality of movement. The perception of differences between individual clients is supported, as influenced by their different experience and predispositions that enable them to differ in movement expression.

The basic premise of my work is to establish good, pleasant communication for both sides. This requires the ability of active listening, not only during the motor experience reflection scheduled after each session, but also during the movement therapy, when it is a more active perception. The aim is to create

a safe environment in which I maintain individual approach (usually, there are about 6 participants) with respect to and focus on a healthy and safe execution of movement. In some cases (with new clients or moves of a different nature), it is necessary to predict the willingness of clients to open to expressiveness and adjust the movement difficulty level to their motor potential and current state of mind, this is why I always ask my patients about their momentary mood and physical condition at the start of each session so that I could adapt the session content if necessary.

I implement physical touch in my sessions, especially when I want to show the client what part of the body is involved, or where they can feel the tension, or should be relaxed. Nevertheless, I am very careful using the touch and with each client we set specific “rules” to make them feel comfortable and make sure this is not a stressful experience for them. The quiet and undisturbed environment of a small ballroom is conducive to smooth going of the sessions. There is a mirror wall on one side which can be covered with curtains, but experience has confirmed that although it was initially hard to look at themselves in the mirror for some clients, this resentment gradually subsides after the second or third session. Clients with this problem usually prefer to go to the back row. The greater part of the session takes place in a space where patients can find a place that currently suits their movement expression best, and I often dim lights over the open, improvisational space, creating a pleasant shadow in which patients are usually more relaxed (rid of the feeling of being judged).

Theoretical groundwork of the study:

- accredited therapeutic training Conscious Body I (160 hrs) – LABAN MOVEMENT ANALYSIS (LMA)/BATERNIEFF FUNDAMENTALS
- accredited course by Veronika Rinovsky supported by Czech Point Art – The Principles of Contemporary Dance Techniques
- 2nd, 3rd and 4th year Psychomotor Therapy
- Courses at the Department of Adult Education and Psychology FF UK (Philosophical Faculty – Charles University Prague):
 - Psychological Counseling for Adults
 - The Body Focused Therapy
 - The Psychology of Art
 - Developmental Psychology

In order to shed more light on the subject matter, here's a letter of one of my clients after three months of attending my regular sessions once a week (for this patient's casuistry, refer to the end of the excerpt):

„DANCING FOR NONDANCERS“

I am intrigued by the name of the course. I decide in a few seconds and sign up. At the first session, I feel embarrassed, everybody around me is in full swing and ripple and I can hardly invent a dance move. I am wondering what this course is about, what are we supposed to learn here? I am ashamed to ask the instructor, so I carry on trying to come up with some dance moves by copycatting others. The first session finishes, I'm leaving, trying to figure out where all this is going, what am I to do here.

I know, I realized after a while, I'm shy, afraid to talk, to ask. Using "Dancing for Non-dancers" I can get rid of my shyness. All I can see during the following sessions is this objective. I do not care what we do, I only watch if it makes me feel ashamed. I notice that even though there are more of us here now, no one is watching me. We discuss our feelings with the instructor at the end of each session. Listening to others, I find that all of us share the same or similar feelings. It makes me feel relaxed.

Just four sessions and my shyness is gone. I communicate, dance and I am not ashamed. It dawns on me that this is a great therapy for getting rid of social phobia. I'd definitely rename it: "Dancing for Non-dancers, or No More Shy". I set it as my second objective to invent my own dance moves, to improvise. Soon, these efforts bear fruit when I go dancing. Until now I've only danced a slow-dance but now I can dance to any music.

I've been doing the course for three months now and I set my third objective. Do stretching exercises. We are working on strengthening the muscles. We are using yoga elements. It's awesome. After each session, I feel more relaxed, free, more confident and happier. No one is pressing anything on me. "Dancing for Non-dancers" teaches us to be independent. All objectives and dance moves are our own. At the beginning, I lacked aim and direction but I found it through "Dancing for Non-dancers" (Mr. X – trainee, April 16, 2012).

CASE REPORT – MR. X

Then thirty-nine-year-old man started attending my courses in February 2012 along with three other members of the Bohnice Theater Company. He was the only one without previous movement training experience and came across as a little more insecure and shy than the others, but otherwise he was indistinguishable from them in any way. At the end of each session, during our group sharing, initially, he used to begin by questioning his “performance” in the session, but after repeated assurances that the training was not about performance or a particular way of movement execution, he left this track over time and focused more on describing the specific sensations generated by the execution of the moves. Gradually, his nervousness and uncertainty began to disappear after the first three sessions. Explaining movements suited Mr. X well – it seemed that he was discovering something new and it caught his attention to such an extent that he was increasingly “forgetting about” his shyness, being able to delve more into improvisation, seeking his own free expression and self-confidence.

During the five months in which he attended my courses I observed a change in the fluency of his expression. While initially his speech was stuttered and blocked by excessive wondering if what he was saying was appropriate or not (the same applied to his expression in movement), later, at the end of the semester, there was considerably more fluency, continuity and confidence in his speech and movement.

Naturally, during such a short-term non-therapeutic work aspects like posture, which would greatly assist in supporting the patient’s mental condition, could not be changed, nevertheless, it is my belief that his participation in this program was of great importance to him. Given his social phobia, which is just one of the disorders in his diagnosis, it seems to be entirely appropriate that the course was open to the public or commercial in its nature. This made him better cope with his anxiety, as other “healthy” clients were coming up with nearly identical experiences in their reflections, which encouraged a feeling of normality in him and that his reactions and experiences were ordinary and typical and not being considered as odd or even inappropriate.

According to the subjective reports of the client, Mr. X managed to improve and dulcify his own movement expression to such an extent that he found courage to go dancing with his friends outside the course, he further described the improvement in his dramatic expression in Bohnice Theatre Company and

also mentioned that ever since 1992, when he became ill (and was registered as a mental patient) he gradually, owing to this improvement, got into a position where he could more easily seek employment and even start traveling again. I don't accredit this progress to a few motor sessions held once a week, but I believe that natural movement and its integration into his daily life could be significantly conducive to this process.

Should I compare this case of the impact of movement on the social phobia client's self-concept with the cases of subjectively healthy clients, I would arrive at the conclusion that the impact is actually very similar, only less noticeable. It is a significant achievement for social phobia patients when they are able to relax and improvise among others and take the floor in the subsequent reflection – most of the healthy clients don't have a problem with that, but in them too, one can observe that the cultivation of movement stimulates and develops their verbal expression too, as well as boosting their positive self image.

Here are a few images of the elements of Laban Movement Analysis and Bartenieff Fundamentals system used in my sessions, gathered as supportive material for my dissertation in the therapeutic training "Conscious Body":



Periodicals:

Kramer, S., Akhtar, S. (1998). *When the body speaks: psychological meanings in kinetic clues*. Psychoanalytic Review (New York: 1963), Issue: 85:3, s.463–467.
ISSN 0033-2836

Electronic resources:

Česká asociace pro psychoterapii zaměřenou na tělo – dostupné z www
(vid. 5. 6. 2013): <http://capzt.cz/vycvik/obsah-vycviku-zrizovatel> ČAPZT 2013

Historie tanečně – pohybové terapie v ČR: Moravská asociace uměleckých terapií – dostupné z www (vid. 5. 6. 2013): <http://www.maut.cz/cz/clanek-12-2/main-top-zrizovatel> MAUT 2010

Mezinárodní konference expresivních terapií – dostupné z www (vid. 4. 3. 2013): www.arttherapies.cz – zřizovatel Mezinárodní konference expresivních terapií Space For Art Therapies 2010

Milgrom, R., Program Vědomé tělo – dostupné z www (vid 10. 11. 2014): Milgrom, R. <http://www.tanec-terapie-vedome-telo.cz/labanova-analyza-pohybu/> – zřizovatel Rena Milgrom 2010

Tanečně-pohybová terapie – dostupné z www (vid 5. 6. 2013): <http://www.arttherapies.cz/ceska-asociace-tanecni-a-pohybove-terapie.html> – zřizovatel Mezinárodní konference expresivních terapií Space For Art Therapies 2010

Other sources:

Zápisky a přímá zkušenost ze semináře a ročního terapeutického výcviku Vědomé tělo (Labanova analýza pohybu a somatický systém Bartenieff Fundamentals)

Sebezkušenost v semináři TRANS-SPECIES MOVEMENT PROJECT 2012
– Janet Kaylo

PHYSICAL SELF-PERCEPTION OF MENTALLY ILL PERSONS

Běla Hátlová, Kateřina Fárová Gilová

Self-concept captures the essence of personality. The formation of body schema, which manifests itself in the body image, starts at birth. Phenomenologically oriented psychology emphasizes the influence of subjective perception and assessment of the situation. The same situation may be perceived differently by different individuals based on their self-concept. Self-concept is widely accepted as an important mediator between exercise and self-esteem (Sonstrom, 1997; Fox, 2000).

Psychopathology can be observed in the body image of mentally ill people. It is linked with the use of space and movement involving different body parts or the whole body.

We assumed that the relationship with physical self will be different for the mentally ill than it is for the general population, and used the Physical Self-Perception Profile – PSPP questionnaire (Fox, K. R. & Corbin, C. B, 1890; Czech standardization Tomešová, 2005a) to verify this assumption.

Fox and Corbin studied the development of the self, laid the theoretical foundations of the physical self-perception structure and compiled the Physical Self-Perception Profile (PSPP) questionnaire. The questionnaire is used for mapping the physical self-perception levels of different population groups, examining the relationship between physical self-perception, self-esteem and exercise behavior, the determination of attitudes towards physical activity, and finding the relationships between physical self-perception and other constructs (Tomešová & Štochl, 2006).

When designing the PSPP, 5 physical self-perception subdomains were identified:

- A): sports competence – the perception of sports skills, the ability to learn sports skills and a sense of security in the sports environment
- B): physical fitness – the perception of the level of physical fitness, stamina and endurance under strain
- C): physical attractiveness – the perceived attractiveness of the figure/physique, the ability to maintain an attractive body

D): physical strength – the perceived strength and certainty in situations requiring physical strength

E): physical self-esteem – feelings of happiness, satisfaction, pride, respect and confidence regarding physical self

In our study, we focused, using the Physical Self-Perception Profile questionnaire (Fox, KR & Corbin, C. B., Fox, K. R., C. B., 1890; Czech standardization Tomešová, 2003a, b), on determining the physical self-perception in mentally ill patients diagnosed with schizophrenia and the addiction of women who, as part of their treatment, regularly attend two motor therapy sessions per week. Under the guidance of a therapist, the sessions took place in the department of rehabilitation, Bohnice psychiatric hospital in 2014.

SCHIZOPHRENIA IN THE CONTEXT OF BODY SCHEMA

Schizophrenia is a dynamic process, usually started at a young age, initially manifested by multiple difficulties, neurotic in character, anxiety and numerous fragmentary physical complaints and moods. Voluntary expression weakens or becomes incomprehensible, feelings are flattened, patients lose the ability to cope with the demands of everyday life, the relationship to the family and surroundings changes, patients lose themselves in their autistic world. After the outbreak of the disorder, a number of symptoms known as pseudoneurotic appear. The patient's personality changes, but a break with reality is not yet fully apparent. The patients are withdrawn, edgy, uncertain, changing their habits and attitudes, their emotional reactions are unfitting and therefore poorly predictable. Often, manifestations of physical discomfort and generic, non-specific psychical responses to stress (insomnia, headaches, attempts to escape from and hypersensitivity to rather trivial burdens) are at the forefront. If there is no major disruption to thinking and patients can maintain contact with their surroundings, this form of schizophrenia may be seen as pseudoneurotic, coenesthetic or latent schizophrenia (Libiger in Höschl et al., 2004). With different individuals, there are no two disorders developing in the same way. The speed and diversity of change, its depth, permanence and consequences for the patient are highly individual.

From the body schema perspective, the schizophrenic disease is characterized by the loss of boundaries of the self and disorganization of mental functions, which is often associated with a restricted physical self-perception and loss of confidence in automatic execution of movement. (Hátlová, 2003).

The study worked with 40 patients diagnosed with schizophrenia (M = 20, F = 20). 17 patients remained in the experiment till the research was concluded (M = 14, F = 3).

Table1. The Physical Self-Perception Profile (Fox, K. R. & Corbin, C. B., 1989, Czech standardization Tomešová, 2003a), for schizophrenia patients.
Source: Hátlová & Fárová Gilová 2015

Probandi	Mean Age	s	PSPP Rough Score	s	Factor A	s	Factor B	s	Factor C	s	Factor D	s	Factor E	s
F. sch. n - 3	39,33	1,8	58,00	9	11,33	2	10,67	1	12,33	2	12,33	2,2	11,33	2
M. sch. n - 14	34,57	7,9	77,93	12	17,00	3	15,93	3	14,57	3	15,00	3,3	15,5	3

DISCUSSION

The acquisition of data for the Physical Self-Perception Profile questionnaire was conducted individually. The patients were not able to concentrate on the questions and understand their meaning. It can be said that the motivation to complete the questionnaire was significantly higher in men. The difference in scores is more likely due to different motivation regarding locomotor activity, which is lower in women in the general adult population as well.

The data obtained from women who were able to complete the questionnaire with the help of a therapist (3 out of 20 patients) showed a very low level of self perception, both for the total score and the individual factors. Due to the low number of probands, no generally true conclusions could be drawn.

A high motivation to participate in the locomotor program was observed in men in the stabilization phase of schizophrenia, often in spite of the difficulties they experienced. Assisted by a therapist, they attempted to cope with the obstacles in the questionnaire with similar effort. The values retrieved here are comparable with those found in the adult male population. The data dispersion in the individual factors is as high for men suffering from schizophrenia as it is in the cross-section of the whole population of adult men.

ADDICTIVE BEHAVIOR IN THE CONTEXT OF BODY SCHEMA

Every human activity ultimately leads to the satisfaction of personal needs. Performing an activity involves not only external behavior, but also the inner experience of the activity. Any activity which is done excessively can become addictive, regardless of the purpose. Those who fail to satisfy their basic needs are constantly weakened until they become completely exhausted.

There is a long history of drug use and drug addiction. The original use of drugs was related to rituals in which the drug's effects facilitated ecstatic states leading the participants to believe they had the ability of foreseeing the future, healing the sick etc. Today, the mythical aspect disappeared and drugs have become an everyday thing. The differences in the working of addictive behavior lie in the speed of the onset of pathological addiction.

ADDICTIVE BEHAVIOR IN THE CONTEXT OF PHYSICAL PERCEPTION

The body of an addict is ill and therefore generates unpleasant, sometimes exasperating and unbearable perception of bodily functions, own helplessness, negative body image and body schema. The body may be perceived as something dysfunctional, alien, a sort of a nuisance. We often heard utterances of patients about their own body like *"it doesn't listen to me, it does whatever it wants, I don't like it, it's not the way I would like it to be, my body is weak, it can't do anything, I'm a wreck."* Most addicted women have experienced situations where they faced violence, abuse and/or sexual abuse. Any experience with sexual or other kind of violence or abuse very significantly influence the attitude of women towards their body. The body is then seen as something dirty and alien, a source of pain and suffering. Abused women are characterized by a reduced dynamics of responses, a complete withdrawal, passivity and unwillingness or inability to express their feelings. Initially, there is a strong reluctance to venture out of their personal space, fear of contact. Presumably, addictions are very often associated with a lack of self-esteem and self-perception problems.

Movement characteristics of the addicted are manifested in relation to space and time. Within space, movement lacks direction and aim. There is uneasiness in exercising the right to space as well as avoiding eye contact. Emotions are accompanied by physical changes, including body movement. The movement of addicts seems withdrawn and restricted. Their own emotions are often unbearable for the addicted, threatening their disturbed, fragile self-perception; withdrawal works as a defense mechanism. The physical response to the insecurities and threats experienced is exhibited as generalized muscle tension, preventing spontaneous movement and expression of emotions. The aim is to maintain personal space and distance from others. The collapse of the self-defense mechanism is subsequently reflected in impulsive outbursts with rich emotional and motor accompaniment.

The fear of the presence of others is closely related to the rejection of oneself, one's own emotions and body. The mere awareness of the fact that they can be seen in movement by others may be hurting. The movement of the addicted tends to be "depressed in tempo". Rapid, sharp, quick movements may appear - but these start and end without gradual transitions and they, again, can help to avoid or escape emotions. There's a motion pattern of unregulated excitement and sudden collapse. On the other hand, the addicted (esp. women) make use of placid, rocking and swinging motion by which they can bring about numbing, drug intoxication-like condition. A shallow and held breath is another symptom. In moments of heightened anxiety, the survival instinct is abandoned when sliding into depression and the innate self-preservation reflex becomes significantly restricted. There are frequent manifestations of self-destruction. This might be why Nešpor (2000) emphasizes the need to pay attention to the diagnosing of depressive symptoms during treatment (Hátlová, 2003).

ADDICTIVE BEHAVIOR IN THE CONTEXT OF EXPERIENCE

Experience is understood as a visceral act, as a psychic process naturally capturing personal life processes, states, ideas and feelings as a singular differentiated unity of the subjective experience of the outer and inner world. "We consider experiencing an internal dimension of the psyche." It turns out that the need of experience and its intensity is different for each individual and is probably encoded in the genetic material of each individual. The possibility of influencing this need is low. When a person is unable to satisfy this need in everyday life he or she is looking for the experience elsewhere (Zuckerman, 1994; Kuban, 2003a, b). By bottling up their emotions, the modern people are pushed to emotional implosion, a suppression of their emotional expression. Emotional implosion is characteristic of Western society. The need for an exceptional experience is a part of life of an ever growing population sample. An increasing number of people crave for emotional release, for an emotional experience. Occasionally, they need to behave irrationally and experience something extraordinary (Hosek 2000). Repeated studies have shown that there are individuals with a greater need of extraordinary experience among drug addicts, gamblers and criminals (Kuban, 2003b).

ADDICTIVE BEHAVIOR IN THE SOCIAL CONTEXT

The problems in the social area are gradually mounting. The network of close personal relationships is affected first; this is accompanied on both sides by frustration and anger leading to disappointment, regret, guilt, hopelessness and helplessness. Social isolation – seclusion in the family combined with the feeling of not having anyone to share one’s inner feelings with. Escape into addictive behavior is a learned strategy of problem solving. There is a growing unwillingness and inability to adequately address relationship problems, handle situations and maintain intimate relationships.

ADDICTIVE BEHAVIOR IN THE SPIRITUAL CONTEXT

The spiritual life of the addicted crumbles, moral values are changed into pseudo-moral values, justifying the behavior of the addict. A sense of alienation, emptiness, isolation, the loss of the meaning and purpose of life follow (Nešpor, 2000).

60 probands participated in the pilot project. The psychomotor therapy was a regular (twice a week, 50min.in duration) session, taking place in Bohnice Psychiatric Hospital (Prague), department of rehabilitation in 2014. There were 40 female patients in the project. 20 patients were diagnosed with drug addiction (methamphetamine, hashish), 20 patients were addicted to alcohol. There was one therapy instructor for all the patients. In the control group, there were 20 female probands – university students (Social and Educational Assistance UJEP PF Usti Labem). 29 patients concluded the project (F.drugs = 12; F.alcohol = 17). 18 probands completed the questionnaire in the control group.

Table1: The Physical Self-Perception Profile (Fox, K. R. & Corbin, C. B., 1989 Czech standardization Tomešová, 2003) for patients with drug and alcohol addiction. Source: Hátlová & Fárová Gilová 2015

Probandi	Mean Age	s	PSPP Rough Score	s	Factor A	s	Factor B	s	Factor C	s	Factor D	s	Factor E	s
F. UJEP n - 18	21,78	0,6	71,89	12	15,50	3	14,83	3	13,00	4	14,00	2,7	14,26	3
F. drugs n - 12	21,25	3,3	71,83	13	15,47	3	13,92	3	13,58	3	14,08	2,9	14,50	3
F. alcohol n - 17	44,53	5,7	80,00	10	16,65	4	16,59	3	15,76	2	14,94	2,8	15,82	2

DISCUSSION

In our study, we had the opportunity to work with addicted women. Initially, patients admitted for treatment exhibited strong anxiety and depressive syndromes which typically began to recede at the turn of the 3 and 4 week. When the acute symptoms subsided, the patients moved into a treatment regime which included psychomotor therapy.

The data retrieved from the Physical Self-Perception Profile questionnaire did not differ (as for the total score, the individual factors or the dispersion of statements for these factors) in the self-perception levels of female students and drug addiction patients of the same age. Our observations of behavior led to disparate conclusions. We believe that the questionnaire chosen is unlikely to become a suitable diagnostic tool in this area.

The results of women addicted to alcohol differed from the other two groups. These women were, on average, one generation older. Their physical self-perception level was higher in all factors. Their behavior and communication were also more confident (sometimes excessively) and more responsible. We assume that this was not only the affect of the ongoing treatment, but, in particular, their own decision for change that led them to receive the treatment. The factors in the questionnaire showed that after they accomplished the first phase of treatment – Detox, the patients felt physically well (factor B and D) and had a positive perception of their own attractiveness (factor C and E). The personality traits observed in them, however, suggest a tendency toward a high experience need, which is, given their situation, a high-risk factor.

CONCLUSION

We assumed that the relationship to the physical-self in the mentally ill and in the general population would be different. In our pilot project, this assumption has not been confirmed by the findings of the Physical Self-Perception Profile (Fox, K. R. & Corbin, C. B., Fox, K. R., 1989) questionnaire. The structure of the questionnaire, which, before it can be processed, requires assessment of written text and choosing appropriate answers, puts excessive demands on the concentration of the mentally ill when coping with the questions. We believe that the questionnaire chosen is not a suitable diagnostic tool for acute psychiatric disorders. The questionnaire can be used in the aftercare of stable psychiatric patients.

Due to the low number of probands and a high dispersion of the data obtained for each item, no generally applicable conclusions could be drawn.

THE APPLICATION OF THE HALLIWICK CONCEPT IN THERAPEUTIC AND CORRECTIVE SWIMMING

Wioletta Łubkowska, Mirosława Szark-Eckardt, Hanna Żukowska

INTRODUCTION

Swimming has particular utilitarian and health values (Cieslicka et al. 2011; Iwanowski 1997; Łubkowska et al. 2014a; Nonn-Wasztan et al. 2011; Nonn-Wasztan 2012; Pasek et al. 2008). Aquatic exercises are among the safest forms of physical activity (Łubkowska and Paczyńska-Jedrycka 2014). The risk of injury is minimal (Cumps et al. 2008; Radzimińska et al. 2013), therefore exercises in the water are recommended for everyone, including pregnant women. Based on the study involving 5,000 respondents aged 16 to 65 years, Nicholl et al. (1991) claimed that recreational swimming is characterized by a low risk of injury.

Water environment provides conditions of relief which are used while performing prophylactic, corrective and therapeutic tasks (Iwanowski 1997; Łubkowska et al. 2014a), and is conducive to improved physical condition and therapeutic work. Relief provided by aquatic environment causes muscular relaxation, thus facilitating assuming the correct posture (Barczyk et al. 2005). Then, spasticity is reduced and so it is possible to make movements in an extended, painless range, which would be hard to achieve in the gymnastics hall (Pasek et al. 2009; Radzimińska et al. 2013). The mutual relation of water hydrostatic pressure and buoyancy forces minimizes static work necessary to keep the body, relieves the joints and spine, lowers muscular tonus of the core (Kołodziej 1989; Nonn-Wasztan 2012). The influence of water, in particular, such water properties as temperature, resistance, hydrostatic pressure have a beneficial impact on the body, they may facilitate the process of physical, mental and social development (Nonn-Wasztan et al. 2011). Great opportunities may result from the influence of water environment on human body at rest and during exercises (Łubkowska et al. 2014a).

Positive effects of therapeutic swimming have been observed in case of dystonic scolioses (Barczyk et al. 2009; Barczyk-Pawelec 2012; Deskur and Zawadzki 2006; Iwanowski 1997; Łubkowska and Troszczyński 2011; Rożek and Zawadzka 2005; Stefańska 2008; Stefańska and Zawadzka 2006), Turner's syndrome

(Nonn-Wasztan et al. 2011) and children's cerebral palsy (Ozer et al. 2007). The effectiveness of exercises in the water has been confirmed also in the process of postoperative rehabilitation (Naal et al. 2007), and Radzimińska et al. 2013 demonstrated benefits ensuing from the implementation of swimming into the basic program of rehabilitation for individuals who have had traumatic spine cord injury.

More and more often a comprehensive use of aquatic rehabilitation methods oriented on the sex-typical problems is being proposed (Nonn-Wasztan 2012). Such methods as neurodevelopment methods, manual techniques, massages of different types or the Watsu® concept – a gentle form of stretching conducted by a therapist in the water of adjusted temperature combining shiatsu techniques, elements of massage, stretching and soft joint mobilization, are gaining increasing popularity (Miłkowski 2010a). The Halliwick concept, as the rehabilitation form in a water environment, is successfully applied in therapy with children suffering from cerebral palsy, dystrophic diseases, myelomeningocele, patients with Down's syndrome, after strokes, with spinal cord injuries, mentally disabled individuals and those with other neurological diseases (Miłkowski 2008; 2010b; Weber-Nowakowska et al. 2011). What is more, this rehabilitation form can be applied in therapy with elderly people who do not have proper movement habits in the water (Miłkowski 2008) and in the process of teaching swimming healthy people (Ołasińska 2008; Weber-Nowakowska et al. 2011). The Halliwick concept does not fully implement rehabilitation programs, but it serves as an outstanding addition to psychomotor therapy and pedagogical education. It teaches independent moving in the water through play (Miłkowski 2008).

Swimming and aquatic exercises may provide a factor involved in the forming of attitudes (Łubkowska et al. 2014a), playing a significant role in the prophylaxis of postural deficits in children and teenagers (Cieślicka 2011). The values and functions of play combined with an aquatic environment may lead to the opinion that postural deficit correction in the form of games in the water, by the beneficial impact on the physical, mental, intellectual and social sphere, may provide an effective therapy. It helps to divert an individual's attention from frequently difficult, repeated many times, tiresome and boring exercises (Cieślicka 2011). Play in a water environment can be successfully implemented using the Halliwick concept, which is insufficiently popular and too rarely used in the correction of postural deficits in children and teenagers. In accordance with the ontogenetic period characteristics, it is play, including simple forms of

movement using easy human motor actions, that children need for their normal development (Paczyńska-Jedrycka and Łubkowska 2014). Apart from ensuring a friendly atmosphere during exercises and reduced psychological tension, play, in its psychophysical value, creates a situation of group education and therapy for participants (Cieslicka et al. 2011; Paczyńska-Jedrycka and Łubkowska 2014; Paczyńska et al. 2014).

Taking the aforementioned indications into consideration, the study demonstrated the possibilities of applying the Halliwick concept in corrective and therapeutic swimming. The purpose of this paper was to provide the basic guidance in the practical use of the Halliwick concept in therapeutic and corrective swimming. Additionally, the study illustrated selected examples of games applied both during the first stage of corrective swimming, involving teaching swimming through play, and during the subsequent stages.

METHODOLOGY

S For the purpose of this study there was applied desk study research and literature review and the analysis of publications was conducted, including available research reports, articles, documents and private video and image materials.

HALLIWICK CONCEPT

The name of the Halliwick concept derives from the name of The Halliwick School for Girls in London, where a swimming instructor, a hydro-engineer by profession – James McMillan, began work in 1949, and developed the rudiments of the method (Ołasińska 2002; Miłkowski 2008; Weber-Nowakowska 2011). Teaching swimming based on Halliwick principles depends on the common principles of physics, especially: hydrostatics, hydrodynamics and body mechanics.

It is designed for people of all ages both individuals with disabilities and the healthy ones (Ołasińska 2002, 2008; Miłkowski 2008).

Interestingly enough, the teaching form is characteristic and unique – a swimmer gains new skills through participating in various kinds of water activities, play and games. The contemporary definition determining what the Halliwick method is involved in, has been proposed by Ołasińska (2008), who considers the Halliwick concept to be the way of teaching others to take part in aquatic games, independence in the water and eventually swimming. Halliwick sessions are performed in groups, but on a one-to-one ration with an individual

instructor who provides proper support adequately to the needs and abilities of a swimmer - regardless of the fact whether an individual has disabilities or is healthy - so that they would be able to make the most of their skills and enjoy all the benefits of play and being active. Therefore, no floatation aids like inflatable armbands, swim rings and belts, are used during the whole process of teaching. During exercises in the water an individual learns how to control breathing, assume safe positions for breathing and control moving which depends on mental adjustment and balance control in the water, among others. The teaching leads to becoming more independent and complete sense of security which relies in thorough knowledge of water environment and independent control of movements in the water (Miłkowski 2008; Olasińska 2008). Halliwick basically means play in a group which gives great joy and has therapeutic influence on a child's all developmental spheres. This program provides a unique opportunity of teaching through play, where water happiness is the most important thing (Olasińska 2008). Self-assessment of the swimming teaching method using the Halliwick concept was conducted among a group of students by Vaščakova and Spurna (2013), who observed happy swimmers and their cheerful mood among the positive aspects of this concept.

ELEMENTS OF THE HALLIWICK PROGRAM THERAPEUTIC AND CORRECTIVE SWIMMING

Hydrokinesis therapy in therapeutic and corrective swimming can be divided into three main stages. The first one (20–25 lesson units, 30–35 minutes) involves teaching swimming, where games appear to be the most effective form of teaching. Play favorably affects psyche, relieves muscle tension and reduces the fear of submersion.

Adjusting to water, which comprises the key task at the first stage, is achieved by:

1. Getting into the water,
2. Walking in the water,
3. Jumping in the water,
4. Running in the water,
5. Submersion when standing and walking,
6. Head submersion in the water,
7. Games involving opening eyes underwater,
8. Games teaching breath control in the water.

The purpose of the first stage is to master the ability to lie on chest and stroke, breaststroke and backstroke while swinging the legs, involving breathing out into the water and opening eyes underwater, adjusting of the body (hardening) to new physical circumstances, that is, water, which already begins under the shower, where individuals get adjusted to different water temperatures (Iwanowski 1997). At this phase it is necessary to emphasize the skilful use of simple regeneration activities such as showers or all kinds of baths (Łubkowska et al. 2014b). This stage also involves floating exercises.

During the second stage of corrective swimming, which lasts from 4 to 8 weeks, the gained skills are further practiced and then it is most essential to master the biggest number of corrective swimming exercises depending on the type of the postural deficit. It should be emphasized though that the exercises do not have any specific therapeutic purpose. In fact, they are expected to prepare children for the third stage – the main one. Independence and conscious individual and group discipline are developed at this point. Here, children are divided into dispensary groups with regard to the type of disability, namely: rounded back, concave back, flat back, scolioses, chest deformities and lower limbs disabilities. This stage should involve a high precision of teaching swimming corrective exercises (Iwanowski 1997).

The third stage – hydrokinesis therapy – also referred to as the essential stage of corrective swimming. Only at this point specialized exercises begin. This phase involves mastering and increasing the degree of difficulty in corrective swimming exercises, teaching new corrective exercises, individually for new types of curvatures. One should not forget that the main part consists of three groups of exercises in the following order:

1. Corrective and general developing exercises,
2. Breathing exercises,
3. Basic corrective exercises (Iwanowski 1997).

The session takes about 35 minutes so the set of the above mentioned exercises is repeated about 5–6 times. Corrective and general developing swimming exercises and breathing exercises may be performed in the form of play.

EXAMPLES OF EXERCISES IN THERAPEUTIC AND CORRECTIVE SWIMMING IN ACCORDANCE WITH THE HALLIWICK CONCEPT BASED ON THE 10-POINT PROGRAM

Teaching swimming through play is based on the Ten Point Program which consists of three phases: mental adjustment, balance control and movement (Table 1). This accounts for the essence of motor learning (Miłkowski 2008, 2010a; Weber-Nowakowska 2011).

Table 1. Phases and stages of learning in the Halliwick method (according to IHA 2000)

1. Mental adjustment 2. Disengagement	Mental adjustment
3. Transversal rotation control 4. Sagittal rotation control 5. Longitudinal rotation control 6. Combined rotation control 7. Upthrust 8. Balance in stillness	Balance control
9. Turbulent gliding 10. Simple progression and a basic stroke	Movement

Source: own study based on the papers by: Miłkowski 2008; Weber et al. 2011.

Mental adjustment is the most essential phase in the Halliwick method whereas adjusting to water begins already at home, in a safe environment, where children in the bath can learn basic elements of breath control, can immerse the face without any fear or even dive (Olasińska 2008).

Phase I – Mental adjustment

Many individuals are fearful of water during the first stage. Swimmers must adjust themselves to various experiences related to buoyancy forces and floating. As learning continues, the activities are performed while standing, only later the horizontal position is assumed. There is a wide range of indices showing mental adjustment: relaxation, not holding the breath, bigger freedom of breathing over- and underwater, open and not tightly closed eyes, water tolerated on the face. The swimmer gets more independent. Independence is the moment, when a swimmer becomes mentally and physically independent (Olasińska 2002; Miłkowski 2008; Weber_Nowakowska 2011).



Figure 1. Breathing out. Mental adjustment. Disengagement.



Figure 2. Mental adjustment. Disengagement.



Figure 3. Floating still with arms and legs folded. Blowing the ball. Mental adjustment. Disengagement.

Phase II – Balance control

Balance control is the skill of controlling balance in stillness or while changing a position in the water. Initially, individuals learn how to stop unwanted rotations so that to keep a safe position to breathe easily. Then, there is the phase of transversal, sagittal, longitudinal and combined rotation control. Here a swimmer learns to immerse underwater. They can pick up items from the bottom of the pool, which makes them immerse the head and open the eyes underwater (Ołasińska 2002; Weber_Nowakowska 2011).



Figure 4. Jellyfish/Starfish/Ostrich. Upthrust. Balance in stillness.



Figure 5. Train/Penguin/Transversal rotation control.



Figure 6. Picking up items from the bottom of the pool. Combined rotation control.

Phase III – Movement

The final phase of learning involves basic swimming movement. Turbulent gliding means that a floating swimmer is moved through the water, but makes no propulsive movement.

The final phase uses the alternating movements of arms from an overhead position backward-backstroke (Ołasińska 2002; Weber_Nowakowska 2011).



Figure 7. Simple progression and a basic stroke.



Figure 8. Turbulent gliding. Back stroke.

Contraindications for swimming exercises include: laryngological diseases, respiratory diseases, circulatory diseases, rheumatic disease and connective tissue diseases, urinary diseases, acute inflammatory process, hemorrhagic diathesis, skin cancer or subcutaneous tissue cancer (Owczarek 1999).

CONCLUSION

The Haliwick concept is successfully applied as an element of therapy for the disabled (Goleger Sršen et al. 2010; Miłkowski 2008, 2010; Olasińska 2002, 2008; Weber-Nowakowska 2011). It can be also used in the process of therapeutic and corrective swimming, in which the first phase of hydrokinesotherapy relies in teaching swimming. The teaching process should be conducted through play in accordance with the Halliwick concept.

Unfortunately, swimming is not popular enough and too rarely used as an auxiliary means in the correction of postural deficits in children and teenagers. Well determined methods in corrective swimming are still insufficient. Swimming instructors tend to implement the activities of the second and third stage too soon, frequently using difficult, repeated many times, tiresome and bor-

ing exercises, leading to the situation, where a child is unwilling to participate in corrective swimming exercises. The form of the Halliwick concept based exercises provides a unique possibility of swimming through play, which is so much needed for children's healthy development. Thanks to games, an individual learns to work in a group, gaining communication skills. Hence, the idea of applying games throughout the entire process of therapeutic and corrective swimming.

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Summary

The book *Psychomotor Therapy and Physical Self-concept* is a sequel of a series of previous books, which are dealing with psychomotor therapy as a supportive healing rehabilitation method not only for psychiatric patients, individuals with physical disability, but also for relatively mentally and physically healthy people. The publication responds to the needs of modern time, which is related to the increasing interest in individuals, its inner sources, support in personal development and growth. The integral part of such approach is the interest in body and the way the individual perceives it. The problematics of physical self-concept seems to be very current interdisciplinary topic, which may be observed from different angles. The aim of the publication is to provide readers with a series of overviews and surveys, which lead to coherence of movement and the perception of one's own body at diverse population. The first part of the book contains chapters referring to theoretical foundation and historic context of the topic. In the second part the reader meets the practical application of psychomotor therapy and the way it is perceived in various European countries (e.g. Belgium, Italy, Poland etc.), in the context of physical self-concept.

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- Editors: Mgr. Tereza Louková, Ph.D.
doc. Běla Hátlová, Ph.D.
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PhDr. Martin Dlabal, Ph.D.
Mgr. Kateřina farová Gilová
prof. Dr. Ludmila Fialová, Ph.D.
doc. Běla Hátlová, Ph.D.
PhDr. Eva Chalupová (Tomešová), Ph.D.
PhDr. Hana Kynštová, Ph.D.
Mgr. Tereza Louková, Ph.D.
Wioletta Lubkowska, Ph.D.
Valentina Moro, Ph.D.
Mgr. Miroslav Papajikvá
prof. Michel Probst, Ph.D.
PhDr. Daniela Stackeová, Ph.D.
Miroslawa Szark-Eckardt, Ph.D.
Davy Vancampfort, Ph.D.
PhDr. Iva Wedlichová, Ph.D.
Hanna Zukowska, Ph.D.
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- Reviewers: prof. PhDr. Hana Válková, CSc.
doc. PaedDr. Jitka Kopřivová, CSc.

JAN EVANGELISTA PURKYNĚ UNIVERSITY IN ÚSTÍ NAD LABEM

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