

Description for the general public

Project aims. The proposed project concerns the evaluation of somatopsychic dependencies in patients treated for scoliosis. The somatopsychic approach focuses on how somatic illness and mechanisms of treatment methods influence an individual's mental state and body representation. Somatopsychology explains how the diagnosis of a disease, particularly if chronic, can affect psychological mechanisms regulating behavior, the structure of the Self, self-esteem and resistance to stressors. The aim of the project is a three-fold assessment of changes in the psycho-social functioning of female adolescents with idiopathic scoliosis before and after operative treatment. This aim highlights the effects of somatic disease on a patient, especially the significance of body image and the cosmetic results of treatment on a patient's proper development. Finally, the aim of the proposed project refers to the evaluation of complicated, not yet fully explained, dependencies between objective clinical and radiological assessment and a subjective view of certain elements of trunk deformity from the perspective of patients. The longitudinal nature of the study enables the acquisition of responses to questions related to mechanisms affecting how the patient adapts to the disease after applying cognitive-behavioral therapy. During this form of psychotherapy, firstly, patients will be discussing emotions and beliefs that are involved with negative body image and consequences of the behaviour that negative body image promotes. Secondly, participants will be asked to discuss the behaviours, if they show any, which compensate for their body image. Finally, the CBT intervention will serve to support patients in accepting their actual body shape, and in feeling positive about cosmetic results of surgical treatment.

So far most of the research within this field has been based on quantitative studies. Therefore, the application of virtual reality environment tasks and qualitative studies (the Draw a Person test) in the project will be a valuable addition and will broaden the scope of the study. Specifically, in the Draw a Person Test, the participants will be asked to draw themselves, then a typical image of a female and a male. Similarly, new, particularly promising research perspectives are created by the use of methods exploiting visual elements, the aim of which is to enable an objective aesthetic evaluation of trunk deformity in scoliosis patients by a doctor using the Trunk Aesthetic Clinical Evaluation, as planned in the proposed project. It should be emphasized by all means that this is the first project aimed to use biometric self-avatars in virtual reality to investigate body image in scoliosis patients. Virtual reality has already been used to study social behaviours toward different stigmatized groups. This modern method has allowed us to perform a realistic manipulation of the body shape of personalized avatars and to investigate perception of other bodies in a well-controlled way. The participants will be told that they will be taking part in a study examining their actual and desired body shapes.

Reasons for undertaking the research subject. The proposed project is a reference to the psychological and sociological concept of the disease and physical disability. The assumption is to broaden knowledge on somatopsychic dependencies in adolescents diagnosed with chronic disease involving a visible physical deformity, viewed also from the perspective of medical staff. Adolescent idiopathic scoliosis is one of the most frequently occurring deformities of organ motion in children and adolescents. It is a common disease with an prevalence of 2-3% in children and adolescents. Scoliosis in girls tends to progress more often and, therefore, girls more commonly need treatment than boys. It may lead to limited physical capacity, neurological disorders and in severe cases, even early death. Furthermore, trunk deformity is a significant cosmetic and psychological issue, particularly in cases concerning rib hump or waist asymmetry. Diagnosis of chronic disease during adolescence may interfere with achieving targets which are important in further, proper development. Most complaints relating to psycho-social functioning are from patients diagnosed with a disease which restricts movement or causes changes in the appearance. The innovative features of the project lie in the following: combination of longitudinal assessment and cross-sectional research strategies, thanks to which we will perform an assessment on multiple planes of the effects of the selected scoliosis treatment method from the subjective perspective of adolescent patients, and objective view of their doctors. In addition, a control group of healthy female adolescents will help us to better understand the phenomenon of perception of body in scoliosis. Furthermore, virtual reality-related methods may also inform the development of psychotherapeutic interventions to reduce stigmatized beliefs about persons with easily recognizable body deformities. This research perspective makes their continuation and practical application by clinicians, psychologists and health educators working with a patient and the patient's immediate surroundings possible, increasing adherence to scoliosis treatment requirements and at the same time developing complex support and care of the patients following completed surgical treatment.