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Innovative Tele-Rehabilitation System Supportive Balance Function Diagnostic and Improvement Model

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Abstract

The World Bank statistical data show that 15 per cent of the world population subsist with some form of disability, and about one-fifth of them have severe disability types. Unfortunately, very often these persons are faced with several obstacles in their residence countries, which includes barriers such as lower level of services for persons with special needs, limitations and inadequate access to education and health care, as well information and communication technology resources, unsuitable buildings entrance and workplaces equipment, which cause unsafe working conditions, and so on. The United Nations (UN) has worked out several policy documents which urge countries to take necessary steps for eliminating inequalities between different people and groups. In 2012 the UN announced an integration of people with special needs in all society activities as its strategic course of action. Two year later the UN Economic and Social Council issued the Resolution which was targeted against any barriers which would be raised during engaging of persons with special needs in society activities and their employment with respect to equal rights for everybody. Continuing this strategic course of action, the UN has developed "2030 Agenda for Sustainable Development" goals which promote and guarantee equal and accessible education through creating and development of appropriate inclusive learning environments, effective preparation for employment, fully access to job market without restrictions and barriers. Recent studies, fulfilled in Latvia and Lithuania, displayed a large number of persons who have problems with their postural control and ability to move. There was emphasized the necessity to create, approve and implement of new prototypes and innovative methodology (approaches, methods, techniques, ways) in social rehabilitation to render new services, which would help in balance dysfunction diagnostics and postural control function improvements for persons with special needs. Ongoing Latvian National Research Program „Innovative solutions in social rehabilitation in Latvian schools in the context of inclusive education” investigates new ways in delivery of social rehabilitation services to a wide range of users, which include Internet, mobile and broadband communication channels, and cover social, educational and training support domains. Although modern approaches unfold many and many e-medicine or e-health models, in majority they are rather general and not so specified to solve particular issues related to balance function diagnostic and improvement. The aim of this paper is to propose new tele-rehabilitation system supportive balance function diagnostic and improvement model, which would enhance people inclusion into society through improvement of their

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postural control skills, respectively – physical health and socio-functional capability. The model, as a part of the whole tele-rehabilitation system, represents an aggregate composition of: social tele-rehabilitation methodology, alternative social inclusion approach including advanced multimedia solutions for alternative social inclusion and medical-public health services through corresponding collaborative educational and supportive e-platform, a set of balance training textual and audio/video materials, supportive multiscreen and multiplatform learning technology eBig3 which was already acknowledged by BOLDIC (Boldic Open learning resources online) Award 2013; mobile application integration; social networking enhancement; and creating of regional scientifically-methodological social rehabilitation centres and SMART classes.

Keywords: Innovative, Tele-Rehabilitation, Diagnostic, Improvement.