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Mobile app prototype to showcase proper lumbar-spine exercising

Publisher: IEEE Cite This PDF

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Abstract

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Abstract:Musculoskeletal disorders, including lower back pain, denote health problems of the locomotor apparatus and are the leading cause of disability, causing an increasing health care expenditure. To reduce the risk of suffering lower back pain, physical activity remains the best treatment. However, exercising requires awareness, understanding, and commitment to achieve the intended results. Current practices rely on illustrations, videos, and more recently, motion capture animation to convey how the exercises should be performed. In this paper, we present the development of a mobile app prototype to demonstrate proper lumbar-spine exercising. The interface is comprised of a physical interaction component with a humanoid-shaped avatar and a picture frame to compare postures.

Published in: 2017 IEEE 6th Global Conference on Consumer Electronics (GCCE)

Date of Conference: 24-27 October 2017	DOI: 10.1109/GCCE.2017.8229374
Date Added to IEEE Xplore: 21 December 2017	Publisher: IEEE

ISBN Information:Conference Location: Nagoya, Japan

Contents

I. Introduction
Musculoskeletal disorders (MSDs) affect approximately 30% of the world's population [1]. Among the locomotor apparatus, lower spinal health problems are the main cause of work absenteeism, often caused by either mechanical overload due to time exposure and repetitive movements, or poor lifestyle habits and sedentarism. The current spike in MSDs, in conjunction with an ageing population, is becoming a public health concern that is being addressed with policies aimed at education, awareness, and prevention [1].

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