



Predictors of physical fitness and health-related quality of life based on anthropometrics characteristics and exercise stress test performance in cardiac rehabilitation

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customisable to fit the patients' abilities and session goals. Also, the physiotherapist can observe the patient's 3rd person or 1st person perspective, along a graphical user interface to control the rehabilitation session. Corrective feedback is given during the performance of exercises while therapists have access to a set of measures, which can then be leveraged to build personalised therapy plans. Also, the physiotherapist can observe the patient's 3rd person or 1st person perspective, along a graphical user interface to control the rehabilitation session. We conducted a usability study with nine physiotherapists using a think-aloud protocol, semi-structured interviews, and adoption questionnaires, aiming to understand Locomotiver's potential to be deployed in the field. We did a thematic analysis of the interviews and the feedback collected during the experiments. The Ethics Committee of Egas Moniz approved this study (process number 657). All participants signed consent forms.

Results: Physiotherapists agreed that Locomotiver would be an innovative solution to their interventions and to increase patients' engagement. They agreed that Locomotiver is more proper for patients with musculoskeletal disorders than for neurological patients. Therapists also stated that exercises need to allow further customisation and collect additional performance data. Participants praised both the instruments and prototype, namely how fast and easy they were to set up, compared to other conventional systems. Overall, professionals show high interest in adopting Locomotiver, pointing benefits such as optimisation of their methods, ease of customisation, and improved diagnosis.

Discussion and conclusions: We presented Locomotiver, an immersive VR system for locomotion rehabilitation that includes three customisable exercises. We verified that Locomotiver an engaging and motivating experience for the users. We concluded that professional therapists would be interested in adopting Locomotiver as a rehabilitation tool. This research contributes to highlight key challenges and opportunities when introducing immersive VR technologies in clinical rehabilitation practices. We believe that this research contributes to establish this a baseline to develop and introduce immersive VR technology that significantly increases the motivation of patients, optimises intervention processes and improves the overall locomotion rehabilitation. As future work, we propose that physiotherapists use Locomotiver with patients for a certain period, in a real-life scenario.

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References

- [1] Rizzo AS, Kim GJ. A SWOT analysis of the field of virtual reality rehabilitation and therapy. *Presence Teleoperators Virtual Environ.* 2005;14(2):119–146.
- [2] Kondo R, Sugimoto M, Minamizawa K, et al. Illusory body ownership of an invisible body interpolated between virtual hands and feet via visual-motor synchronicity. *Sci Rep.* 2018;8:4–6.

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Predictors of physical fitness and health-related quality of life based on anthropometrics characteristics and exercise stress test performance in cardiac rehabilitation

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ABSTRACT

Introduction: Sedentary lifestyle and physical inactivity are among the leading modifiable risk factors worldwide for cardiovascular disease and all-cause mortality [1]. Many patients in contemporary cardiac rehabilitation programs are quite deconditioned on entry. Cardiac rehabilitation Program (CRP) provides a cost-effective therapy that aims to accelerate recovery following an acute event and reduce the risk of recurrent events, through structured exercise prescription, education, and risk factor modification [2]. The positive effect of CRP on functional capacity has been known for some years [3]. In this study, we aim to assess the relationship between health-related quality of life (HRQoL), Metabolic Equivalents (METs) spend on exercise stress test, body mass index and waist circumference in patients with cardiovascular disease before beginning a cardiac rehabilitation program.

Material and methods: We performed an observational study with inclusion of thirteen male patients with coronary heart disease, 53.8 ± 8.2 years old who were admitted to the Department of Cardiology of Hospital Garcia de Orta and referred for CRP. The HRQoL was assessed with the short form-36 (SF-36) questionnaire. METS were calculated using the Bruce protocol when patients performed exercise stress test, body mass index (BMI) and waist circumference was measured, at initial physical examination. All subjects signed an informed consent. This study followed all the principles of Helsinki Declaration.

Results: The mean value for BMI was $28.3 \pm 4.0 \text{ kg m}^{-2}$, waist circumference $102.6 \pm 14.8 \text{ cm}$ and METS 9.99 ± 3.14 . There was a positive correlation between BMI and waist circumference ($r = 0.87$; $p = .001$); between waist circumference and METS a negative correlation was observed ($r = -0.59$; $p = .040$). The domain physical functioning score from SF-36 was positively correlated with METS ($r = 0.65$; $p = .010$), and was negatively correlated with waist circumference ($r = -0.60$; $p = .020$). The lowest mean values of SF-36 scores observed were vitality (63.1 ± 20.4), and general health (56.8 ± 22.5).

Discussion and conclusion: As expected subjects with higher BMI had also higher waist circumference. Patients with better perception of physical function were those with lower waist circumference and who had better performance in exercise stress test. These results are in accordance with previous studies [4]. We can conclude that waist circumferences and METS could be good CRP effectiveness predictors on these patients. Once it is expectable to achieve decreases in waist circumferences and increase METS after CRP, with improvements in physical function perception.

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References

- [1] Lavie Carl J, Ozemek C, Carbone S, et al. Sedentary behavior, exercise, and cardiovascular health. *Circ Res.* 2019;124(5): 799–815.
- [2] Giuliano C, Parmenter BJ, Baker MK, et al. Cardiac rehabilitation for patients with coronary artery disease: a practical guide to enhance patient outcomes through continuity of care. *Clin Med Insights Cardiol.* 2017;11:1179546817710028.
- [3] S Listerman J, Bittner V, Sanderson BK, et al. Cardiac rehabilitation outcomes: impact of comorbidities and age. *J Cardiopulm Rehabil Prev.* 2011;31(6):342–348.
- [4] Abu-Haniyeh A, Shah NP, Wu Y, et al. Predictors of cardiorespiratory fitness improvement in phase II cardiac rehabilitation. *Clin Cardiol.* 2018;41(12):1563–1569.

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Professional competences of the physiotherapists in the field of mental health in Portugal: a questionnaire based survey

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ABSTRACT

Introduction: In 2001 the World Health Organisation made the following statement: "the Mental Health – neglected for far too long – is crucial to the overall well-being of individuals, societies and countries" [1]. In Portugal, the focus on this issue arose in 2017 when a national program for Mental Health was created stating that "people are living more years, but with disabilities on the area of Mental Health, which implies an overload for society" [2]. Currently, the importance of the role that Physiotherapy has in this field is demonstrated by the World Physiotherapy Day 2018 campaign held by World Confederation of Physical Therapy, which was centred on the theme "Physiotherapy and Mental Health" [3]. The role of the Physiotherapist in Mental Health aims to promote the welfare and autonomy of people with physical dysfunctions associated with mental diseases and use physical stimuli to influence Mental Health [4]. The purpose of this study is to characterise the professional profile of the Physiotherapists working in Portugal in the field of Mental Health.

Materials and methods: This is questionnaire online-based survey. An online questionnaire was sent to institutions, hospitals, centres where official records showed physiotherapists working in the field of Mental Health. The questionnaire was divided in 2 parts: socio-demographic information and questions related to Mental Health practice and training. The questionnaire was answered by 18 physiotherapists, which had an average age of 38 years (± 10.4) and 94% were female ($n = 17$). All the participants gave their informed consent.

Results: All the respondents have at least 3 years of continuous work in Mental Health field and 50% ($n = 9$) of them have experience for more than 5 years. Physiotherapists intervene daily with a minimum of 3 patients and 56% ($n = 10$) of them work within a multi-professional team. Concerning education, 78% ($n = 14$) of the physiotherapists stated that the theme of Mental Health was insufficiently addresses during the bachelor degree. More than 70% ($n = 12$) of the physiotherapists declared that have none or a little support to their clinical practice concerning training, guidelines.