

PROCEDURA SELETTIVA, PER TITOLI ED ESAMI, CATEGORIA D, POSIZIONE ECONOMICA D1, AREA TECNICA, TECNICO SCIENTIFICA ED ELABORAZIONE DATI, PRESSO IL DIPARTIMENTO DI NEUROSCIENZE, RIABILITAZIONE, OFTALMOLOGIA, GENETICA E SCIENZE MATERNO INFANTILI, INDETTA CON D.D.G. N. 3809 DEL 05.10.2020, PUBBLICATO NELLA G.U. N. 86, 4^a SERIE SPECIALE, DEL 03.11.2020

Adempimenti di cui all'art. 19 del D.lgs n. 33/2013, come modificato dall'art. 18 del D.lgs n. 97/2016

QUESITI DELLA PROVA ORALE

Il giorno 28.7.2021 alle ore 8.30 in via telematica ha avuto luogo la settima riunione della Commissione esaminatrice della procedura di cui al titolo, per lo svolgimento della prova orale.

La Commissione, regolarmente convocata e presente al completo, dopo ampia discussione, ha stabilito, a norma dell'art. 12, comma 6 del "Regolamento di assunzione del personale tecnico amministrativo" di questo Ateneo, i seguenti quesiti:

Prova Orale 1

- 1) il candidato indichi, sinteticamente, la differenza tra una revisione sistematica della letteratura ed una revisione narrativa
- 2) il candidato descriva brevemente la modalità di gestione di una settimana di pratica clinica che preveda attività su pazienti, momenti di confronto con gli studenti su casi clinici e momenti di esecuzione di tecniche manuali.
- 3) secondo il D.Lgs 81/2008 qual è la differenza tra pericolo e rischio?

TRACCIA 1. PHYSICAL THERAPY IN SPORT 23 (2017) 136e 142

Stabilization exercise compared to general exercises or manual therapy for the management of low back pain: a systematic review and meta-analysis

Background

Low back pain (LBP) is a multifactorial disorder with a high prevalence; most people experience back pain at some point in their life and it has a significant impact on individuals, their families, and the healthcare systems. This disorder causes disability, participation restriction, a career burden, the use of health-care resources, and a financial burden. In addition to medical treatment, musculoskeletal physiotherapy (exercise therapy and manual therapy) is the most common method of conservative intervention for LBP (Amit, Manish, & Taruna, 2013; Hoy, Brooks, Blyth, & Buchbinder, 2010; Smith et al., 2014). The European Guidelines for Management of Chronic Non-Specific Low Back Pain (Airaksinen et al., 2006) recommend supervised exercise therapy as the first-line treatment. Stabilization exercise programs have become widely used for low back rehabilitation because of its effectiveness in some aspects related to pain and disability (Ferreira, Ferreira, Maher, Herbert, & Refshauge, 2006; Liddle, David Baxter, & Gracey, 2009). Stabilization exercise are exercise interventions that aim to improve function of specific trunk muscles thought to control intersegmental movement of the spine and enable the patient to regain control and coordination of the spine and pelvis using principles of motor learning such as segmentation and simplification (Hodges and Richardson 1996, Richardson, Jull, Hides, & Hodges, 1999). Although stabilization exercises have become the major focus in spinal rehabilitation, as well as in prophylactic care, the therapeutic evidence using pain and disability control variables as outcomes remains controversial. Most therapeutic studies have compared stabilization exercise, general exercise, and

manual therapy. Systematic reviews to date that have evaluated the effectiveness of exercise therapies have concluded that there is no evidence to support the superiority of one form of exercise over another (Ferreira et al., 2006; Macedo et al., 2010). In a recent review, Wang et al. (Wang et al., 2012) showed that stability exercise is more effective for decreasing pain than general exercise, and it may improve physical function in patients with chronic LBP. However, the efficacy of stability exercise was not compared with manual therapy. After reviews on this topic were published (Ferreira et al., 2006; Macedo et al., 2010; Wang et al., 2012), new randomized controlled trials (RCTs) have been released (Amit et al., 2013; Inani and Selkar, 2013; Macedo et al., 2012; Sung, 2013). The Cochrane Collaboration recommends that systematic reviews be updated biannually (Higgins and Green, 2006). Moreover, as far as we know, no meta-analysis has been performed on studies comparing segmental stabilization exercise with manual therapy. The meta-analysis technique minimizes subjectivity by standardizing treatment effects of relevant studies into effect sizes (ESs), pooling, and analyzing data to draw conclusions. The aim of this systematic review with meta-analysis was to analyze published RCTs that investigated the efficacy of stabilization exercises versus general exercises or manual therapy in patients with LBP.

Prova Orale 2

- 1) il candidato presenti un disegno di studio che risponda alle caratteristiche di uno studio clinico randomizzato ed in doppio cieco.
- 2) il candidato illustri brevemente le modalità di acquisto, rifornimento e gestione dei materiali necessari allo svolgimento di una settimana di pratica clinica.
- 3) Quali sono le funzioni e i compiti dell'SPP (Servizio di Prevenzione e protezione)?

TRACCIA 2. BMC Medical Education (2019) 19:99

Prediction of academic achievement based on learning strategies and outcome expectations among medical students

Abstract

Background: One of the most important indicators of the effectiveness of teaching can be the academic achievement of learners, which can be influenced by different factors such as learning methods and individual motivations. The purpose of this study was to determine the ability of predicting academic achievement based on learning motivation strategies and outcome expectations based on a theoretical model.

Methods: This descriptive-analytic study was conducted with the participation of 380 male and female students of nine faculties of medical sciences of Shahid Beheshti University of Tehran. Multi-stage sampling along with the questionnaire of motivational strategies for learning and student outcome expectation scale were used for data collection. The college grade point average (CGPA) of students' past grades was considered as the academic performance variable. Data analysis was performed using Structural Equation Modeling (SEM) in AMOS software.

Results: The mean score of the structure of learning strategies, motivational strategies, outcome expectations, and students' GPA did not show significant statistical differences in terms of gender, marital status, residence location, field of study, and educational level. There was a direct and significant relationship between the motivational strategies' structures ($R = 0.193$, $p < 0.001$) as well as learning strategies ($R = 0.243$, $p < 0.001$) and the CGPA, while there was no relationship between outcome expectations and CGPA. Path analysis revealed that self-regulating learning strategies and motivational strategies can predict the academic achievement of these students.

Conclusions: Considering the importance of active and independent learning among medical students, it is necessary for lecturers to use interactive and student-oriented patterns of teaching. Also, students should become familiar with self-regulating learning skills to better understand the information they receive.

Prova Orale 3

- 1) il candidato nomini i principali strumenti di critical appraisal per le revisioni sistematiche, RCT, e metanalisi.
- 2) il candidato descriva brevemente il significato di valore predittivo positivo e negativo di un test e la differenza con il concetto di sensibilità e specificità.
- 3) secondo il D.Lgs 81/2008 chi è il RSPP- Responsabile del servizio di prevenzione e protezione?

TRACCIA 3. Adv Physiol Educ 43: 233–240, 2019

HOW WE TEACH

Generalizable Education Research

A combination of active learning strategies improves student academic outcomes in first-year paramedic bioscience

Introduction

Advances in physiology and medical knowledge require allied health professionals to possess an advanced understanding of many fundamental bioscience concepts. Bioscience provides clinicians with the scientific basis underlying clinical practice, continuing education, and development of best practice, as well as enabling future study pathways into related professions, such as research or specialization. However, despite its significance, bioscience units, in tertiary education, prove to be a difficult hurdle to master for many students (16, 35), resulting in disproportionately high failure rates. These high failure rates have often been attributed to external factors, such as lower university entrance scores and lack of previous science study (7), yet curriculum design and teaching approaches may also play a central role. In contrast, an understanding of the mechanism of disease has been shown to ultimately improve patient care and outcomes (10, 26, 36). Thus the importance in succeeding in anatomy and physiology (A&P/Bioscience) forms the foundation for future success in allied health courses as a whole.

Bioscience for Paramedics 1 (BIO 1, semester 1) and 2 (BIO 2, semester 2) are first-year introductory units for the study of A&P taught across two semesters. These units are a component of an Australian accredited Bachelor of Paramedics degree and are taught at Victoria University at a single campus with ~180–250 students enrolled in a given year. It is important to note that there is minimal literature available on A&P pedagogy in a paramedic education context (35). Our first-year students often struggle with both the content volume as well as complexity of the concepts contained within these units. The reasons for this are multifaceted, including a lack of relevant high school preparatory subjects, specifically chemistry or biology (7), a larger number of mature-aged students within these units who are returning to formal education after a significant break (12), anxiety toward studying science-based subjects (7), or simply lack of engagement. Despite the introduction of peer-assisted study sessions in 2010, the overall failure rate in 2012 continued to remain relatively high, at ~13% in an A&P unit for semester 1 of year 1 of the degree (12). Furthermore, as the BIO 1 unit is a prerequisite for BIO 2, the second-semester unit, students who fail need to add an extra year of study to their course. Consequently, many students who fail a BIO unit inevitably need to change their enrollment status to part time, transfer to a different course, or leave the University altogether. Available data have shown high attrition rates at the first-year level for many health-related courses (33a). Previous teaching activities in these A&P units

included formal lectures (with large student numbers of 200) and tutorial classes (smaller numbers of 25–35 students). The focus of these units was teacher centered through lectures and tutorials.

Prova Orale 4

- 1) il candidato descriva gli strumenti a lui noti per l'analisi del Risk of Bias
- 2) il candidato descriva nell'analisi di dati in quale caso si utilizza un approccio parametrico e quando quello non parametrico
- 3) secondo il D.Lgs 81/2008 chi è il Rappresentante dei lavoratori per la sicurezza - RLS?

TRACCIA 4. Archives of Physiotherapy (2015) 5:4

Scoliosis: lower limb asymmetries during the gait cycle

Abstract

Background: Several studies indicate that the gait pattern of subjects suffering from scoliosis differs from the norm. However, there is conflicting evidence regarding the source of this discrepancy.

Objective: To evaluate lower limb asymmetries in selected gait variables.
Study design: A case–control study on lower limb asymmetries during gait which can be related to scoliosis.

Methods: 31 subjects with scoliosis (Study Group - SG) and an equal comparative control sample (Control Group – CG) of subjects underwent objective gait analysis with the Vicon® motion caption system whilst walking at a comfortable speed along the gait laboratory walkway. Analysis was performed at three levels: (1) Asymmetry in the SG against asymmetry in the CG, (2) Difference in magnitude of asymmetry between the SG and CG, and (3) Global mean values in the SG vs. CG. The Paired Student T-Test was used for intra-group analysis whilst the Independent Student T-Test was used for inter-group analysis of the selected parameters, which include temporal parameters (stride length, stride time, step length, individual step speed, speed of gait, cadence, swing-to-stance ratio), ground reaction force (peak GRF values during Loading and Propulsion phases, vertical component only) and electromyography (peak EMG values and their time of onset, as a percentage of the gait cycle) of two lower limb muscles (Gastronemius and Vastus Medialis).

Results: No intra-group variation was found to be significant. However, the speed of gait was found to be significantly slower ($p = 0.03$) in scoliotic subjects when compared to the norm, as a result of the shorter stride length ($p = 0.002$ and longer stride time ($p = 0.001$) in the SG. Furthermore, there was statistical significance in the time of onset of EMG peaks for the Lateral Gastrocnemius ($p = 0.02$) with regards to inter-group difference in magnitude of lower limb asymmetry and global mean values.

Conclusions: Scoliosis is a tri-planar deformity which has some impact on the gait pattern. This research study concludes that scoliotic subjects have a slower speed of gait due to a shorter stride length and a longer stride time, together with variations in the timing of muscle activation.

Keywords: Scoliosis, Gait analysis, Speed of gait, Ground reaction force, Electromyography

Savona, 28.07.2021

La Commissione:

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- Firmato Prof.ssa Mezzarobba Susanna Componente
- Firmato Prof. Sandro Zappatore Componente
- Firmato Dott.ssa Daniela Zucchiatti Segretario