
Continuous foetal heart rate traces were made in 26 low risk patients during static maternal exercises in the supine position, as prescribed in a hospital's antenatal education program. Prior to exercise, foetal heart rate abnormalities were present in four patients. Three of these had an abnormal foetal outcome. During the exercises a further eight cases had reductions in foetal heart rate, variability or reactivity. An abnormal foetal outcome was recorded in two of these cases. The findings indicate uncertainty about the safety of antenatal exercises in the supine position in late pregnancy and, until further studies are available, it is prudent to advocate the practice of all antenatal exercises in a titled position, and not at all where foetal compromise is suspected.

Keywords: Exercise; Fetal Heart; Heart Rate, fetal; Prenatal Care


Methods of electrical stimulation of bone are reviewed for a comparison with the use of interference currents and for a consideration of the possible merits of various methods. A summary is given of results of treatment of 38 patients with delayed or non-union and predisposition to non-union, and the technique used with interferential therapy is described in detail. Results are also given of a study of the effects of stimulation on 11 patients with acute fractures of the tibial shaft, compared with 11 closely matched patients with similar acute fractures who did not receive interferential therapy. The advantages of surgically non-invasive techniques are emphasised and recommendations are made for the use of interference currents prophylactically in specific cases.

Keywords: Bone and Bones; Electric Stimulation Therapy; Fractures


Form A of the Attitude Toward Disabled Persons (ATDP-A) scale was used to discover whether physiotherapy students distinguish between personal and professional attitudes toward people with disabilities. Forty fourth-year students successively completed two copies of the ATDP-A scale, one with their professional views. A two-tailed t-test for correlated samples showed that the mean professional score was significantly greater ($p < 0.05$) than the mean personal score. Results are discussed in terms of inconsistencies in the research literature as well as implications for physiotherapy training programs.

Keywords: Attitude of Health Personnel; Handicapped; Students


The role of physiotherapy in the neonatal intensive care unit has historically been mainly associated with the care of the neonate's lungs. Postural drainage coupled with percussion, vibrations and suction are all used in the physiotherapy management of neonatal respiratory disorders. At Monash Medical Centre all elective extubations are performed by the physiotherapist in accordance with the neonatal unit's protocol: this includes four hourly respiratory physiotherapy for the first 24 hours.
after extubation to ensure that post-extubation atelectasis does not occur. In addition to respiratory care, the physiotherapist is also engaged in the assessment and management of neonates with either neurological or musculoskeletal disorders.

Keywords: Infant, newborn; Lungs; Respiration Disorders


Stereotypes of therapists were found to contain a 'kernel of truth' in a survey comparing the active and passive leisure pursuits of female physiotherapy (N = 100) and occupational therapy (N = 107) graduates and undergraduates. Physiotherapists had relatively more active leisure patterns as adolescents and undergraduates. Occupational therapists and relatively passive leisure patterns that persisted after graduation. These findings support the spillover hypothesis of work-leisure relationship. Following graduation physiotherapists adopted more passive leisure pursuits which supports the compensation theory of leisure. However, physiotherapy graduates felt deprived of sport and experienced less leisure satisfaction than occupational therapists.

Keywords: Occupational Therapy; Physical Therapy; Recreation


The rationale and content for an interdisciplinary communication and interpersonal helping skills program taught to third year physiotherapy students is described, noting in particular the need to integrate a general counselling model with specific interviewing and clinical skills required by physiotherapists. A program evaluation based on the participation of 97 students of several forms evaluating general and specific aspects of the program. Overall, the results were positive and supportive of the rationale and content of the program. A pre- and post-test design was used to assess outcome in terms of student priorities, results of which are discussed with reference to the measuring instrument's focus on rating os performance as distinct from specific behaviours. Directives for the future development of the program are highlighted.

Keywords: Education, medical; Interpersonal Relations; Professional Competence


Physiotherapists in Australia have been able to become specialists by a process of specialisation since 1982. The process was designed to achieve certain aims with the majority of the profession supporting the aim of improving quality of care. The implications of the aims for appropriate utilisation of the specialist physiotherapist in today's Australian Society are discussed and a mode of practice is proposed.

Keywords: Career Choice; Physical Therapy; Specialties, medical


This study assesses the differences in temperature sensitivity of skin areas. The subjects were
required to associate the water content of test-tubes with the different heat sensations. The side of
the test-tube was placed on the skin area and the temperature was matched with subject's response.
Analyses were limited to the warmth and cold sensations as generalisations can be made from these
in terms of differences in the skin areas in heat perception. In the face, the temperature associated
with warmth was significantly lower than in the forearm and the leg. This trend was different
between the three areas in terms of the cold temperatures.
The intra-individual difference suggests that results of skin sensation tests should be interpreted
with some caution.

Keywords: Cold; Heat; Sensation; Skin


Elite hockey players of both sexes from the Australian Institute of Sport were assessed for lumbar
spine mobility, trunk flexion and back extensor muscle strength, hamstring flexibility and postural
characteristics over a two year period.
All the athletes were more mobile in rotation than the 'normal' West Australian population, and
demonstrated flexible hamstrings and powerful back extensor muscles; trunk flexion was less strong
initially, but improved after intervention in the form of a specific exercise program, over the
measurement period.
A questionnaire disclosed that low back pain is a common complaint of hockey players, but rarely
required intensive physical and medical treatment.
The term 'hockey player's back' has been coined in recognition of the long flat thoracolumbar spine
frequently noted in these subjects.

Keywords: Muscles; Spine; Sport

Hallam FM and Jull GA (1988): Evaluation of a temporary prosthetic insert in the
rehabilitation of elderly ischaemic below-knee amputees: A pilot study. *Australian Journal of
Physiotherapy* 34: 133-138.

The physiotherapy management of elderly, ischaemic below knee amputees is often compromised
by delayed and/or complicated wound healing. Such patients are often unable to ambulate on a
prosthesis for prolonged periods. Problems concomitant with immobilisation such as weakness,
contractures, and decreased morale tend to arise. This pilot study investigated the efficacy of
incorporating a shaped Dunlopillo insert into a temporary prosthetic socket to allow the at risk
group to ambulate as soon as the sutures were removed regardless of the state of wound healing.
Two parameters were evaluated, namely would healing and stump maturation. A total of eighteen
subjects were observed in a control and an experimental group. Both would healing ($p < 0.05$) and
stump maturation ($p < 0.05$) were significantly enhanced by the inclusion of a Dunlopillo insert.

Keywords: Aged; Amputation; Prosthesis

Herbert R (1988): The passive mechanical properties of muscle and their adaptations to

The length and stiffness of a relaxed muscle are determined by the mechanical properties of its
intramuscular connective tissues and/or intracellular structures. Viscous deformation of these
components of muscle is responsible for the increase in muscle length seen immediately after
stretching, but this increase is transient. Lasting changes in muscle length can only be brought about
by adaptations of the structure of muscle. An understanding of the nature of the stimulus for muscle to adapt can provide therapists with a theoretical basis for therapeutic intervention aimed at producing changes in muscle length.

Keywords: Biomechanics; Connective Tissue; Muscles


The effect of different training intensities of electro-motor stimulation (EMS) on strength gains produced in the quadriceps femoris muscle group was investigated. Twenty-four subjects were randomly assigned to one of three groups: Control (C), Low Intensity (LI) trained at 25 per cent of their maximum voluntary isometric contraction (MVIC), and High Intensity (HI) trained at 50 per cent of MVIC. Results indicated a significant strength improvement in both training groups (P<0.01) following a three week EMS training program. The HI group showed significantly greater strength gains (48.5 per cent) than the LI group (24.2 per cent) (p < 0.01). A significant carry-over effect was also demonstrated in a three-week follow-up period, specifically in the HI group. Positive isokinetic strength changes in the concentric mode were observed in both training groups. In addition, a significant cross transfer effect was demonstrated in the contralateral homologous muscle group (p < 0.01) for both HI and LI groups.

Keywords: Electric Stimulation Therapy; Kinetics; Muscles


Scheuermann's disease (or more correctly, spinal osteochondrosis) is not confined to the thoracic spine: all parts of the spine may be affected. Major signs are endplate irregularity, more than 5 degrees vertebral wedging, and sagittal overgrowth. Minor signs are Schmorl's nodes, anterior flattening of the vertebral endplate, and anterior detachment of a ring apophysis. Symptoms are of little diagnostic value. Scheuermann's affects 20 per cent to 30 per cent of the population; males and females equally.

A hereditary predisposition is a major factor in the aetiology of Scheuermann's disease. There is evidence that this condition follows an autosomal dominant pattern of inheritance.

Treatment consists of either exercises; bracing and exercises; or in very severe cases, surgery.

Keywords: Osteochondritis; Scheuermann’s Disease; Spine


In recent years there has been a considerable change in the skills and qualifications necessary for faculty members in physiotherapy schools. The focus has shifted considerably from a primary emphasis on the clinical ability of all staff, toward the more universal scholastic goals of research, grants, publications, consultancies and teaching skills. From an absolute reliance on medical research, physiotherapy has had to learn how to go about its own research and apply it directly to treatment modalities and clinical programs. These changes have had a profound and direct effect on the faculty of physiotherapy schools, while the profession as a whole struggles to come to terms with the change. As is the case in other long established professions, physiotherapy is learning to prize scholastic advancement and research as
much as clinical excellence.
Keywords: Clinical Competence; Education, medical; Physical Therapy; Research


The importance of developing a curriculum which satisfies the broad objectives of professional education has been recognised widely. The balance between enhancing scholarship and developing vocational skills, the importance of relevant evaluation of the curriculum, students and teachers and the place of research in current professional education are all matters worthy of consideration by those responsible for professional education. This paper reflects upon the historic attitudes to education and traces the changes in approach which have been necessary to ensure the provision of appropriate learning experiences for students seeking a professional education today.
Keywords: Education, medical; Physical Therapy; Research


This paper reviews some of the literature which relates to physiotherapy clinical supervision. It explores the attitude of therapists to the role of student supervisor and their level of preparedness. Some behaviours for facilitating effective clinical supervision from recent studies of student preferences are presented. Appropriate models of the supervision process for physiotherapy students are given and a grid model is suggested as a possible method of simplifying and evaluating the complex and varied learning environments, interpersonal relationships and behaviours which occur in physiotherapy clinical placements.
Keywords: Clinical Competence; Education; Physical Therapy


The transition from preclinical to clinical education can provoke stress in students. This paper describes the nature of stress and outlines the use of a 'clinical coping workshop' at the University of Queensland, to identify and examine the particular stresses on physiotherapy students facing this transitional experience. Much of the stress experienced by students relates to the new behavioural responses required of them. It is suggested that negotiating an acceptable contract, relating to student and tutor behaviour as much as to educational outcomes, can be helpful and is applicable in the clinical environment. Mutual expectations need to be openly shared in this process.
Keywords: Education, medical, undergraduate; Stress; Students, medical


Behaviour therapy is not used to a great extent in the physiotherapy management of chronic low back pain; yet the clinical research literature indicates that behavioural techniques may assist the maintenance of treatment gains.

Two questionnaires were devised for hospital-based physiotherapy graduates to assess knowledge of behaviour therapy techniques and their relevance to physiotherapy management of the patient with chronic low back pain. Third-year undergraduate physiotherapy students who had just
completed their behaviour therapy course at Cumberland College of Health Sciences, constituted the comparison group. Results showed that the graduates and physiotherapy students had comparable levels of knowledge. Both groups believed that the physiotherapist's use of behaviour therapy techniques was primarily for the purposes of improving the patient's daily activity and muscular state.

Physiotherapy training for the management of this difficult patient group is discussed. Keywords: Behavior Therapy; Education, medical; Health Occupations