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An evaluation of the paediatric physiotherapy curricula of three South African universities

Vachiat, Aamena

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Table 2.1 Table to highlight the current levels of evidence that exist in the physiotherapeutic interventions available in treating various paediatric diagnoses

Diagnoses	L O E	Reference	Description of study	Effectiveness of physiotherapy intervention
Neurological diagnoses				
DCD	III	Kane & Bell (2009)	Three individuals diagnosed with DCD participated in a core stability group program. Although positive results were shown, the sample size was small. Further research of a higher level of evidence is still required in the field of DCD.	Effective
CP	Ia	Anttila et al (2008)	Only randomised controlled trials were included in the systematic review to assess the effectiveness of physiotherapy interventions on functioning in children diagnosed with CP. The study found that due to limitations in methodological quality and variations in population interventions and outcomes, limited evidence exists on the effectiveness of most physiotherapy interventions through randomised control trials. Moderate evidence was found for some effectiveness of upper extremity training.	Inconclusive
CP	IIa	Ustad et al (2009)	The study investigated the effects of blocks of daily physiotherapy in five infants diagnosed with CP and concluded that further research is needed on this subject.	Inconclusive
TBI	III	Tepas et al (2009)	The study showed that delays in comprehensive rehabilitation, especially for children with severe TBI, diminish the outcome and efficiency of rehabilitative care.	Effective
Neonatal ICU (NICU)	Ib	Cameron et al (2005)	Randomised control trial to investigate the effects of physiotherapy on the motor performance of infants who were very preterm with very low birth weights. Although physiotherapy intervention had no significant effect on the treatment group's motor performance at four months corrected age, no subjects in the treatment group had abnormal motor development at four months corrected age as compared to the non treatment group and control group.	Inconclusive

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NICU	Ib	Hernandez-Reif et al (2007)	Medically stable infants in NICU were either assigned to a massage therapy or a control group. The study concluded that massage has a stress reducing effect on preterm infants who are medically stable.	Effective
NICU	Ia	Mahoney & Cohen (2005)	A systematic review was conducted to determine the effectiveness of developmental intervention in the neonatal intensive care unit. Articles were critiqued on the base of their design and only 12 articles, which indicated that sensory techniques implemented by a physiotherapist appeared to be an effective component of developmental intervention, were found to be highly rated. The authors concluded that there was a lack of large, well-designed and randomised studies in this area of paediatric outcome research.	Inconclusive
Respiratory diagnoses				
Bronchiolitis	Ia	Perotta et al (2008)	A systematic review was evaluated to evaluate the effect of chest physiotherapy for acute bronchiolitis in paediatric patients between the ages of 0-24 months. The study concluded that physiotherapy did not reduce the length of hospital stay, did not reduce the need for oxygen requirements and did not improve the severity clinical score in young children.	Ineffective
NICU	Ib	Bayley et al (2005)	A randomised control trial was conducted to assess the effects of routine chest physiotherapy post extubation in neonatal ICU. Participants were randomly allocated to one of two groups; a physiotherapy group which involved chest wall percussion and oropharangeal suctioning and a control group which included suctioning without chest wall percussion. The study had a large sample population consisting of 177 infants. Results of the study indicated no statistical significant difference in the rate of post extubation collapse between the two groups. The authors concluded that routine post extubation physiotherapy for all infants is not indicated. The authors also found no adverse outcomes associated with chest physiotherapy.	Routine chest physiotherapy post extubation is ineffective.
Respiratory treatment in NICU	Ia	Balageur et al (2009)	A systematic review was conducted to analyse the effect of infant positioning in neonates receiving mechanical ventilation. Eleven trials involving 206 infants were included in the review. The prone position was shown to slightly	Effective

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			improve the oxygenation in neonates receiving mechanical ventilation. The study did not find any evidence whether particular body positions during mechanical ventilation in neonates are effective in producing sustained and clinically relevant improvements.	
Paediatric cardiac surgery	Ib	Felcar et al (2008)	A randomised control trial was conducted with 135 children who had been diagnosed with congenital heart disease and had undergone heart surgery. The authors concluded that preoperative physiotherapy significantly reduced the risk of pulmonary complications in postoperative paediatric cardiac surgery compared to physiotherapy treatment in the postoperative period only.	Effective
Pneumonia	IIa	Da Silva Santos et al (2009)	The study concluded that the Expiratory Flow Increase Technique increased the oxygen saturation in children with community acquired pneumonia.	Effective
CF	Ia	Van de Schans et al (2009)	A systematic review was conducted to assess the efficacy of chest physiotherapy compared to no chest physiotherapy for cystic fibrosis. Randomised and quasi-randomised clinical trials in which a form of chest physiotherapy were used, were compared with no chest physiotherapy or spontaneous coughing. The review found three studies, involving 36 participants, which displayed a higher amount of expectorated secretions during chest treatment as to a control period. In three studies radioactive tracer clearance was used as an outcome variable. Chest physiotherapy increased the clearance of tracer as compared to the control period. Short term effects in terms of mucous transport were evident.	Effective
CF	III	Bogdan et al (2011)	Case studies of 15 patients diagnosed with CF revealed both short term (improved clinical and nutritional status) and long term (decreased number of exacerbations and hospital admissions) benefits of physiotherapy.	Effective

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Neuromusculoskeletal diagnoses				
Haemophilia	Ia	Gomis et al (2009)	A systematic review was conducted to assess the role of exercise and sport in the treatment of patients with haemophilia. The review concluded that physiotherapy, physical activity and sport are basic elements to improve quality of life, improve strength, decrease musculoskeletal lesions and prevent haemophiliac atrophy. The authors also concluded that regular exercise and rehabilitation with physiotherapy is fundamental in the management of haemophilia; particularly in countries where replacement therapy is not readily available.	Effective
Scoliosis	IIb	Dos Santos Alves et al (2006)	Effect of a physiotherapy rehabilitation programme consisting of aerobic exercise, stretching and relaxation techniques resulted in improvements in pulmonary function tests and performance assessment in adolescents diagnosed with scoliosis.	Effective
Low back pain	Ia	Kosseim et al (2008)	A systematic review was conducted to investigate the effectiveness of physiotherapy in treating children with LBP. All literature reported on adult treatment; none included physiotherapy treatment in children and adolescents diagnosed with nonspecific LBP. Clinical guidelines for treating non-specific LBP in children and adolescents are still needed.	Inconclusive
Low back pain	Ib	Fanucchi et al (2009)	A well designed randomised control trial with concealed allocation and assessor blinding with 72 participants concluded that exercise is effective in decreasing the intensity and prevalence of low back pain in children.	Effective
Other				
HIV	Ib	Potterton et al (2010)	A randomised control trial was conducted to assess the effects of a home stimulation program on the cognitive and motor development of children infected with HIV. The study concluded that a basic home management programme taught to caregivers does have a positive effect on the neurodevelopmental status of children infected with HIV.	Effective
Burns	Ib	Omar et al (2012)	A randomised control trial consisting of 32 patients was conducted to assess the influences of purposeful activity versus rote exercise on improving pain and hand function in paediatric burns. The study concluded that purposeful activity decreases pain, improves hand movement and function better than rote exercise.	Effective

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