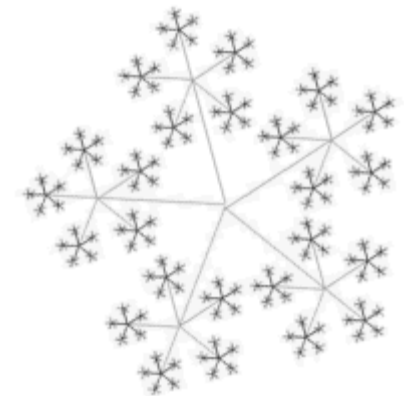
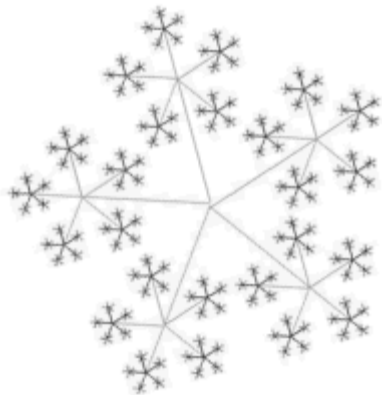


PHYSICAL FUNCTIONING, ACTIVITY AND PARTICIPATION

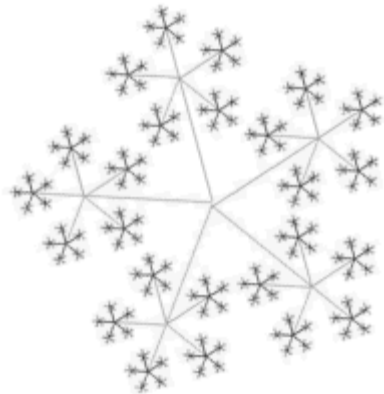
SYMPOSIUM

FRIDAY 19TH MARCH 2010



HOW TO PROMOTE SCIENCE FOR BASIC EDUCATION OF REHABILITATION SPECIALIST?

EXERCISE AND MOTOR LEARNING ORIENTED APPROACH



Tiina Kuukkanen
Principal Lecturer in Physiotherapy
PhD, PT



WORLD CONFEDERATION FOR PHYSICAL THERAPIST



- Physiotherapists are experts in movement for health!
- Physiotherapists are experts of exercise across the life span!



FUTURE CHALLENGES?



THE THREE LEADING CAUSES OF DEATH IN 2030

- Ischaemic heart disease
- Cerebrovascular disease
- Chronic obstructive pulmonary disease



Physiotherapists have the central role in prevention!



RISK FACTORS

In Finland (2008):

- Obese adults: about 14%
- Tobacco use: 28%

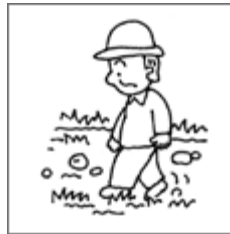


- Physiotherapists have the central role in promotion of health and physical activity! (Rhodes 2009)



DISABILITIES IN U.S.

- Percent of adults unable (or very difficult) to walk a quarter mile: 7.1%



- Percent of adults with any physical functioning difficulty: 15%



MODIFIABLE RISK FACTORS OF THE LIFESTYLE CONDITIONS

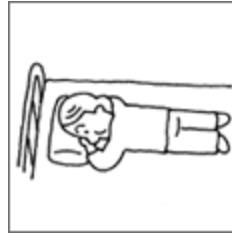
BY DEAN 2009

Conditions						
Risk factors	Cardiovascular disease	Cancer	Obstructive lung disease	Stroke	Diabetes	Osteoporosis
Smoking	x	x	x	x	x	x
Physical inactivity	x	x		x	x	x
Obesity	x	x	x	x	x	
Nutrition	x	x		x	x	x
High BP	x			x	x	
Dietary Fat/Blood lipids	x	x		x	x	
Elevated glucose levels	x	x		x	x	
Alcohol	x	x		?	x	x



CARDIOVASCULAR DISEASE

In ischemic heart disease: one of the modifiable risk factors is inactivity



- Physical activity has the greatest health protective effect!
 - Regular walking, aerobic training, moderate physical activity...
 - Risk of stroke ↓



ROLE OF PHYSIOTHERAPIST

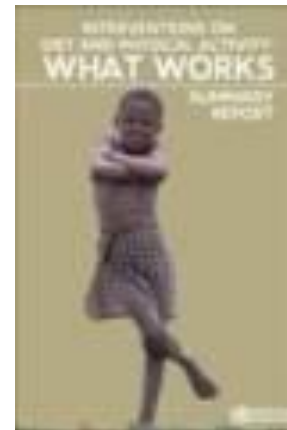
- Physiotherapists identify impairments and limitations and maximise the individual's movement potential (Moffat 2009)
- Exercise and education are the key elements in preventing unhealthy lifestyle and conditions
 - Coronary heart disease, diabetes, obesity, stroke, chronic obstructive pulmonary disease, high blood pressure etc...
- To promote lifelong health in every person and the health of communities (Dean 2009)



ROLE OF PHYSIOTHERAPIST

Preventive programs for children and adolescents

- In high income countries: Most children have one or more risk factors for one or more lifestyle conditions (Dean 2009)



HEALTH-FOCUSED PHYSICAL THERAPY PRACTICE BY DEAN 2009

- a) Health assessment and evaluation
- b) Risk factor assessment and evaluation: nonmodifiable and modifiable
- c) Interventions:
 - Smoking reduction and cessation
 - Nutrition optimization
 - Weight control
 - Physical activity: progressive increase in regular daily activity
 - Exercise: structured exercise programs
 - Stress reduction and management
 - Sleep hygiene and optimization
 - Substance abuse and cessation (alcohol, drugs)





EXERCISE IN PHYSICAL THERAPY PRACTICE



THE BENEFITS OF PHYSICAL ACTIVITY AND EXERCISE ARE WELL KNOWN AND DOCUMENTED e.g. in Cochrane

- [Interventions to improve adherence to exercise for chronic musculoskeletal pain in adults 2010](#)
- [Home versus center based physical activity programs in older adults 2009](#)
- [Dynamic exercise programs \(aerobic capacity and/or muscle strength training\) in patients with rheumatoid arthritis 2009](#)
- [Physical conditioning programs for improving work outcomes in workers with back pain 2010](#)
- [Exercise for women receiving adjuvant therapy for breast cancer 2009](#)
- [School-based physical activity programs for promoting physical activity and fitness in children and adolescents aged 6-18 2009](#)
- [Exercise in prevention and treatment of anxiety and depression among children and young people 2009](#)
- [Exercise for overweight or obesity 2009](#)
- [Interventions for promoting physical activity 2009](#)
- [Interventions for preventing obesity in children 2009...](#)



RECOMMENDATIONS FOR HEALTH ENHANCING PHYSICAL ACTIVITY

Physical Activity Guidelines for Americans

“Be Active, Healthy, and Happy!” (2008)

Swiss National Programme Diet and Physical Activity (2008)

‘Be Active, Be Healthy’ England (2009)

Physical activity and well-being in Finland in the 2010s. A proposal for a national programme for sport and physical activity in view of public steering (Ministry of Education 2008)

Weekly Physical Activity Pie (UKK Institute 2009)





EXERCISE IN PHYSICAL THERAPY PRACTICE

- PT has to motivate the client in adopting physical activity into his lifestyle.
- PT has to make the public more aware of the health benefits associated with increased physical activity

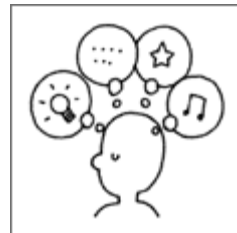


- The outcome of exercise depends on the commitment of the client
- Detailed plans for physical activity
- Follow-up
- Also the aesthetic and affective properties of interventions are important



MOTOR LEARNING

- Is an internal process that reflects current capability for producing a particular movement or task.
- The changes in behaviour are associated with experience or practice



IN THE FRAMEWORK OF MOTOR LEARNING

- Stages of motor learning
- Situation-based approach (person-task-environment)
- Memory
- Sources of sensory information
- Feedback: extrinsic, intrinsic





IN THE FRAMEWORK OF MOTOR LEARNING

- Concept of individual differences in abilities and skills
- Preparing the learning experience for patients: the learner with his past experience, motivation, attention, arousal
- Forms of practice and guidance



IN THE FRAMEWORK OF MOTOR LEARNING

- Health education!
- Smoking cessation
- Reducing obesity
 - Information tailored to the client's situations will be the most effective
 - Appropriate type of information and feedback
 - Effective evidence based motivational interventions (education and exercises)



TRANSTHEORETICAL STAGES OF CHANGE –MODEL: FIVE STAGES FOR BEHAVIORAL CHANGES

People are not intending to take action in the foreseeable future



People are intending to take action in the immediate future

People are working to prevent relapse

Precontemplation

Contemplation

Preparation

Action

Maintenance

People are intending to change in the next six months.

People have made specific overt modifications in their life-styles

TRANSTHEORETICAL STAGES OF CHANGE – MODEL (TTM)

Review: Articles from the years 1982–2007

- 948 primary physical activity interventions based on the TTM, of which 34 met the inclusion criteria.
- Only 7 studies were accurately based on TTM and there was a lot of limitations in the studies
- TTM did not provide enough explanation of physical activity changes
- More accurate studies are needed!

Hutchison et al. 2009



CLINICAL COMPETENCES AT 21ST CENTURY

- Physiotherapists
 - need an understanding of health and wellbeing with the respect to its multiple dimensions consistent with the ICF
 - provide evidence-based clinically competent physiotherapy
 - deliver recommendations for physical activity and exercise
 - apply knowledge of the new sciences
 - be able to early detection and intervention

(Dean 2009, NPAG 2004 Vision Project Current and Future Competency Requirements for Physiotherapists)





IMPLICATIONS AND CHALLENGES TO EDUCATION...

- Valid, reliable and sensitive measurements of functioning
- Techniques of research (quantitative and qualitative)
- Evidence based updates
- Fundamentals of exercise
- Health behaviour change theories and models and their application
- Accessing, critically analyzing and using data for clinical decision-making and judgement
- Information management for the development of outcome data and building evidence for best practice
- Consultation and guidance skills
- Life-long learning



THE PHYSIOTHERAPISTS GRADUATING FROM JUA



- have a development-oriented, investigative and evidence-based approach
- in their activities they apply the latest knowledge about the impact of physiotherapy
- have a readiness for research work
- can utilize, in particular, the methods of function assessment, therapeutic exercise, manual therapy, physical therapy, ergonomics, and wellness technology in assessing and providing exercise for rehabilitees, in order to enhance their movement and functional ability
- In addition, physiotherapists promote health in society



PHYSIOTHERAPY SUBJECT SPECIFIC COMPETENCES IN ALL PHYSIOTHERAPY PROGRAMS IN FINLAND:

Physiotherapeutic assessment and clinical reasoning *The student is able to assess and analyze human functioning, especially mobility * knows how to, with the help of assessment and clinical reasoning, construct a physiotherapy plan together with the client and considering his/her needs * knows how to evaluate the outcomes of physiotherapy

Counselling and guidance competence * is able to use various guiding and teaching methods to promote and maintain an individual's/group's functioning and health * knows how to use the principles of motor learning when guiding human movement and functioning * is able to apply the methods of therapeutic exercise when guiding a group * knows how to plan and guide health- and functioning related physical exercise



PHYSIOTHERAPY SUBJECT SPECIFIC COMPETENCES IN ALL PHYSIOTHERAPY PROGRAMS IN FINLAND:

Therapeutic competence * knows how to individually apply evidence based knowledge when planning physiotherapy * is able to support client participation and to create an interactive therapeutic relationship * knows how to plan and implement therapeutic exercise using the knowledge of patho-, exercise and neurophysiology and biomechanics * is able to use the methods of thermal and electrotherapy utilizing their physiological and therapeutic effects * is able to implement manual therapy appropriately and justifiably

Collaboration and social competence * is able to work independently and participate in interprofessional collaboration in different teams, groups, expert nets, and service chains as an expert of physiotherapy * is an active member of society to promote and develop services considering the national and international challenges within rehabilitation, physical education, social and healthcare * is able to draft expert's reports and written statements



PHYSIOTHERAPY SUBJECT SPECIFIC COMPETENCES IN ALL PHYSIOTHERAPY PROGRAMS IN FINLAND:

Technology competence * is able to use technological possibilities when planning, implementing and evaluating physiotherapy * is able to apply technology when assessing mobility and functioning * is able to use assistive devices and their technology in supporting mobility and functioning * is able to plan accessible environments participating in interprofessional collaboration * is able to use ergonomic methods in proportioning environmental factors to clients' resources and needs



EXAMPLES OF COURSES IN JUA CURRICULUM

- *Evidence-Based Physiotherapy*
- *Motor Development and Learning*
- *Physical Activity as a Promoter of Functioning*
- *Assessment of Functioning*
- *Therapeutic Exercise*
- *Physiotherapy in Public Health Challenges and in Elderly*
- *Physiotherapy in Musculoskeletal Disabilities*
- *Physiotherapy in Nervous System Disabilities*
- *Wellness Technology and Assistive Technology*
- *Basics of Research and Development Work*
- *Bachelor's Thesis*



CO-OPERATION

- Universities
 - Scientific and Applied
- Educators and Researchers and Physiotherapists in clinical practice
- Students in research projects





Thank you



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