Internship in "Ageing, Physical Activity and Health: from Theory to Practice"

Facts
Credits: 15 ECTS.
Teaching semester: Fall/Winter 2025.

BACKGROUND

The oldest population is rapidly increasing in numbers. This goes for many European and other developed countries, as well as for the least developed countries. According to the most recent projections the number of European older citizens (65+ years) will increase from 87 million in 2010 to 148 million in 2060.
Ageing is associated with a progressive and generalized deterioration of physiological function which progressively translates into functional impairment, increased rate of disability and dependency. Also, chronic diseases, including metabolic syndrome, sarcopenia, and cognitive impairment, are more prevalent with increasing age.
From a public health perspective, the ageing societies represent one of the most serious challenges for the future economic sustainability of the health care systems. From the perspective of the single human being reaching older age may indeed be a very positive and enriching experience, but also a serious challenge which may turn into poor quality of life.

Regular exercise and everyday physical activity have been consistently identified as essential strategies for controlling body weight, modifying the trajectories of physiologic decline, reducing the risk of major chronic diseases and have been indicated as one of the key pillars supporting medical treatments. Nevertheless, numerous challenges exist when promoting behavioral changes at individual and population level, such as engaging in physical activity programs and reducing sedentariness.

AIMS

The main goal of the course is to provide the students insight into age-related changes in the main biological systems and how and to which extent such changes can be attenuated and reversed through daily physical activity and structured exercise programs as well as through other modifiable life-style interventions such as reduction in sedentary behavior and nutrition (only briefly discussed). The course will provide master level students with research-based knowledge and insight on the field of aging and the health enhancing effects of single and complex active lifestyle interventions such as exercise physical activity, nutrition. Biological and social behavioural sciences are integrated to provide a comprehensive view of the complexity of the aging process and to connect lab-based knowledge with population perspectives. Finally, the course aims at providing relevant competences to deal with the challenges of implementing exercise and complex active life-style interventions in the community and, particularly, for those who may not be motivated and active to engage in such interventions.

CONTENT

This course builds on the background information and scenarios describe above and combines a biological and social behavioural approach to the study of ageing, physical activity, exercise and in general lifestyle interventions.

With respect to the aspect of human biology, the course looks at the normal physiological and functional changes induced by ageing, age-related diseases and the impact of regular exercise and everyday physical activity as well as sedentary lifestyle. Nutrition will be briefly discussed as a key modifiable lifestyle risk factor. This part also includes lab and field work (e.g. assessment of neuromuscular function, objective/subjective evaluation of everyday physical activity, exercise prescription).

From the social behavioural perspective, the course will provide basic competences and the theoretical background for designing complex interventions using social behavioural models. This section is relevant as the course addresses the key challenges of implementing lifestyle behavioural changes (e.g. starting an exercise program, reducing sedentary behaviour, engaging in more active lifestyle) in the general population where the knowledge and awareness of health enhancing benefits of PA and exercise and the "readiness" to engage in such interventions may not be fully understood and present.

By combining the biological with social behavioural approaches, the student is enabled to understand that best practice models need to be embedded in "real life scenarios" and the need tailoring interventions based on the participants readiness and willingness to engage in active life-style behaviours independently on what "works best". This is to support older adults to initiate, adhere and sustain exercise

Learning Objectives - Competences

The course contributes to the following elements of the competency profile of the programme:

- The student understands ageing in its contextual framework and is able to design, implement and objectively evaluate the effect of exercise programs and complex active life-style interventions for older adults.
- The student is able to support such implementation through hands-on motivational approach.
- Through the combination of theoretical and practical competences the student has a solid base for future professional situations related to ageing.

Learning Objectives - Skills

The student is able to argue, analyze and reflect on key aspects of ageing in relation to exercise and physical activity in an independent and critical way on an academic level.

Teaching format and feedback

The course is structured as an Intensive Program (IP) with a condensed teaching period.

Teaching is organised in such a way as to support the SDU's Underlying principle for active learning and activating teaching, as well as the Faculty of Health study's translation of this principle - the FAIR principles.

The following forms of instruction and work may be applied in the course:

Lecture-based topics: Issues are addressed from a multidisciplinary perspective, using teachers from different disciplines and a number of European countries.

Seminars: Students will discuss the lecture content and formulate questions, ideas, and strategies for future academic and public health initiatives.

Lab and data collection: Selected field and lab assessment will be presented. Students will be introduced to different methods, collect their own data and assess older adults who will be invited to the lab. The data will serve for a final presentation where all students in groups will be asked to work on a research question.

Workshops: Practical workshops related to theoretical areas will be performed as well as student workshops preparing for student presentations.

Student presentations: Students will be required to make an oral presentation of a self-chosen topic.

Teaching Feedback

Teacher feedback, peer feedback (one on one or group).

The activities in the course are primarily aimed at achieving learning objectives and preparing students for the form of examination. The specific forms of instruction and work as well as forms of feedback is made clear in the lesson plan on itslearning.

Itslearning:

Study material and virtual rooms for discussions between students and students and staff, will be made available on the itslearning platform of SDU University.

Forms of examination

- Presentation in groups at the end of the course
- Passing a written essay of no more than 24,000 units exclusive references (external evaluation using the Danish 7-point grading scale implemented in 2006).

Location: Department of Sports Science and Clinical Biomechanics, University of Southern Denmark, Odense, Denmark

Course credits: 15 ECTS

Language: English.

Admission criteria: students will be admitted according to the following criteria:

- A relevant bachelor degree at the level required by the national standards of the participating institutions
- Adequate English language proficiency level.

Course coordinator : Professor Paolo Caserotti