416 - Aquatic Program Design for Seniors by Flávia Yázigi

- Population ageing results from decreasing mortality, and, most importantly, declining fertility.
- Population ageing has major social and economic consequences.
- While people are living longer lives almost everywhere, the prevalence of non-communicable diseases and disability increase as populations age.
- The presence of health conditions says nothing about the impact they may have on an older person’s life. The question is about how older people face the problems and control their daily living (Young, 2009)

AN OVERVIEW: AGING STATISTICS

- 88% of those over 65 years of age have at least one chronic health condition.
- Older persons are projected to exceed the number of children for the first time in 2047.
- 20% of older Americans suffer from a mental disorder that is NOT part of normal aging.
- Even though cognitive decline (becoming senile) is NOT a normal part of aging, many people assume it is and 25% of the elderly have experienced it.
- Arthritis and related conditions are the leading cause of disability in the U.S.
- Heart disease is still the leading cause of death with Cancer coming in second.
- 20% of people over 65 have diabetes.
- Falls are the leading cause of injuries - one in three people over 65 fall each year.

Public-health strategies that might empower older people to retain control of their lives are necessary.

SPECIFIC GOALS FOR EXERCISE DESIGN

To create a specific workout for seniors is very important to understand the aging process and to establish goals focused on their main needs. For each goal and according ACSM and AEA guidelines, professionals must find the best methods and strategies to provide a successful exercise program.

The workout program must care about all the following items:

- Promote musculoskeletal health:
  - Joint lubrication, flexibility, stimulate bone anabolism, postural education, strength, pain control
- Physical fitness:
  - Aerobic (cardio workout), strength, flexibility, body composition
- Mental health:
  - Self-esteem, social interaction, sense of achievement and productivity, memory, motivation, pain control, mood
- To improve ability to perform daily tasks and maintenance of autonomy;
- Muscle power, strength, resistance, coordination, agility, aerobic endurance, flexibility;
- Prevention of cardiovascular diseases:
  Resistance associated with aerobic strength training to promote healthy habits
- Prevention of falls:
  Muscle power, balance, agility

**CRITICAL COMPONENTS OF AQUATIC EXERCISE**

Are the key aspects that should be considered and controlled in the development / implementation of an aquatic exercise program:

- Pool depth
- Water temperature
- Range of motion
- Body control capacity/Autonomy
- Posture and stability
- Level of aquatic adaptation of the practitioners

**TIPS FOR EXERCISE PROPOSAL:**

1. Walking is considered to be one of the main functional skills necessary to guarantee an independent life and has been used as an indicator of mobility and cardiorespiratory condition, through different walking tests that directly or indirectly evaluate variables such as velocity, strength, balance, cognitive functions, sight and the presence or not of chronic pain. Different walking patterns must be explored!

2. Leadership and cueing quality is essential for motivation and mental health:
   a. Welcome students before they enter in the water
   b. Transmit good mood and individualize the reception
   c. Do not underestimate students
   d. Explore multiple communications channels simultaneously
   e. Quality of information, clarity and accuracy
   f. General and individual feed-backs
   g. Explain any prior order of command
   h. Turn off the music where necessary

3. The efficacy of cardiorespiratory workout depends on the ability of the practitioners to control the movement with adequate technique, which allows reaching the aerobic target zone. For good results:
   a. Keep exercise simple
b. Expend time in the same pattern!

c. Assess the intensity and improve the stimulus if necessary

4. Disabled World - Research has shown the more socially active older person has less chance of developing depression and mental disorders associated with aging.
   a. Encourage interpersonal relationships between students through the exploration of different arrangements of the students in the pool
   b. Evaluate the mental health of your students (questionnaires)
   c. Motivation through dynamic class
   d. Social support
   e. Give space for dialogue
   f. Feed backs: reinforcement and motivation
   g. Appropriate music
   h. Group and individual organization

5. Musculoskeletal health: According the Osteoarthritis Research Society International (OARSI, 2007) controlled exercise is an important strategy for a non-pharmacological osteoarthritis management:
   a. Importance of maintaining thermal comfort
   b. Importance of gentle movements of the joints in the warm up (eliminating stiffness)
   c. Pain is the main constraint- must be assessed before and after exercise
   d. Equipment should be used carefully
   e. For bone stimulus, ground reaction forces is very important and can be increased by vertical impact (Lower water level and rebounded patterns)
   f. Power training can stimulate bone metabolism
   g. Deep water can be useful for severe grade of osteoporosis; transitions must be smoothly

6. Effectiveness of aquatic exercise in the static and dynamic balance of elderly people is proved.
   Explore Inertia by traveling movements combined with statics movements. Between static movements, the antipodal stance must be considered.

7. The physical capacities that seem to be at the origin of episodic and recurrent falls in seniors population are balance, strength in the lower limbs, and agility. More specifically in tasks like:
   a. Dynamic balance with decreased support
   b. Static balance with low vision and instability in the support base
   c. Antipodal static balance
   d. Walking quickly deviating from an obstacle,
   e. Obstacle crossing gait
sitting up and down from a chair at faster velocity.

Additional guidelines for practical application will be given during the workshop.

REFERENCES

http://www.who.int/topics/ageing/en/


