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AQUATIC THERAPEUTIC MODEL PLAN

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Abstract: *Aquatic therapy, as in any therapeutic area, a total approach to physical training for recovery should include evaluation and initial treatment for orthopedic damage, a treatment plan progress and a further plan for treatment, including physical training to prevent injury again. Each phase of treatment should include a teaching component to promote general health improvement for people disabled in advance, by providing information and guidance lines for successful return to professional activities, sports or leisure activities.*

Keywords: *hydrotherapy, program, recovery.*

1. Introduction

A model of program for treatment for aquatic therapy makes it possible for the therapist to develop a unique treatment plan for each patient which addresses the goals set, short or long term. Objectives for aquatic therapy must be similar to those of land-based program. Aquatic therapy long-term goals will be influenced by available water resources during and after physical therapy and personal needs of each patient. The clinician can design a treatment plan based on the format presented as model and can develop a unique program for each person.

2. Objectives

Establishing some specific criteria to establish a water treatment program is a base for the best recovery, whether or not a patient practice sports.

3. Material

At the beginning of the aquatic therapy program it will determine the basis for future experiences. Perform an assessment of patient eligibility to identify the aquatic skills. Establish safety methods and therapeutic treatment program for beginning of the treatment to reduce pain and improve range of motion.

In the second phase of Aquatic therapy the strengthening program is introduced by:

- strength training - can be done using water viscosity,
- cardiovascular exercises for developing low-level of resistance,
- stretching techniques.

Educational component includes the guidelines for progressive resistance training and self-stretching.

In the third phase of aquatic therapy the program focuses on improving balance and

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coordination in preparation for more complex movements in the water and on land. Cardiovascular training is emphasized for return to professional activities or sports competition. You can discuss:

- frequency, duration and intensity needed to improve cardiovascular training,
- how to measure and change the intensity,
- ways of heating and recovery of the body after exercise.

The fourth phase reveals the task orientation exercises in the pool. These may resemble the movements used in sport, industry or professional activities. Cardiovascular training becomes more challenging with the introduction of anaerobic interval work. For people who practice sports, activities on land are the predominant form of therapy, possibly resulting in 70% to 95% of all forms of therapeutic practice. Meetings in aquatic activity can be used in days with less burdensome activity or for body recovery after exercise and during periods of flexibility for athletes who continue to recover on land. Pedagogical component includes a return to the guidelines for returning to work or sport to prevent injury again. These guidelines should be set according to individual and may include concepts such as the use of progression for effective training, rehabilitation dynamic posture, back care.

Phase five of aquatic therapeutic program is proposed as a maintaining physical training program for those who prefer to continue exercising in water or those who do not tolerate exercise on land. Maintenance programs are generally not covered by insurance, however, direct community payment programs are a choice for patients who choose to continue maintenance therapy aquatic or aquatic exercise program (in other countries).

Aquatic therapy program is a model of care that addresses recovery from initial treatment to the prophylactic. A teaching component is the transition through each phase to ensure the knowledge and skills for optimal recovery and to be a physical training program for life.

Before the first lesson in the pool, the patient is evaluated for eligibility aquatic therapy program. This assessment will identify safety precautions and contraindications for aquatic therapy and water safety. The first meeting is about entering in the pool safely, followed by an assessment of the positions of comfort and aquatic skills. Range of motion are evaluated and tolerance of different types of movement in water. The assessment for aquatic therapy in combination with land-based functional assessment will determine the direction of recovery and the beginning and the end of the plan of care. Functional assessment and grading of pain are used to indicate progress from one phase to the next.

During the initial phase of the treatment many patients experience a decrease in pain and an increase in range of motion. Floating effects and a reduction in force of gravity makes possible much earlier to start exercising in water than on land. Because patients are able to move lighter in water and start preparing early, aquatic therapy will gain a larger share of the total time of treatment during the initial recovery.

During intermediate stages of treatment focus will be on improving strength and endurance. Functional activities that were started in the pool, like walking rehabilitation will be carried out on land. Methods of movement that are dependent on water (including the unique physical properties of water) and are not transferred well on land will help in developing an important basis for the physical training that includes strength, endurance, mobility, balance, coordination.

In later stages of recovery, time spent in the pool may decrease gradually, as land-based activities are beginning to prevail. Both programs work and sports activities can start in the pool. Athletes can simulate sport specific skills in the pool using sports equipment (such as baseball bats, tennis rackets or golf clubs) and resistance devices to enhance strength, power and resistance in the range of motion for a particular skill. Eventually, the activities of a certain task or skill that simulates a sports performed in water, can be placed on land.

Patients who can not practice successfully on land or land-based exercises are painful can continue to improve the level of physical training in water by participating in a therapeutic program of transition. More advanced aquatic skills can be introduced to prepare the patient, with limited supervision. Aquatic therapy groups that are recommended to be supported by an instructor and socializing during the transition.

Aquatic therapy is designed with the intent shown that the patient go through all phases. Realistically, however, rehabilitation of aquatic therapy can be done much earlier. The physician should consider the benefits of continued treatment of aquatic therapy against financial constraints of time and space limitations of conditions.

Due to financial constraints and time, as water treatment programs and land become more concentrated in time and work, the doctor will decide if the water treatment benefits exceed those derived from similar exercises on land. In addition, physical design of the pool may be a factor in determining the period of participation in aquatic therapy. Some pools are not designed for use therapeutic exercises for physical training or maintenance and in small pools, priority may be given to patients in the acute phase rather than the transitional or maintenance. In other countries, non-clinical arrangements provide aquatic exercise programs in group and individual to serve the needs of the patient's physical training and maintenance.

4. Methods

The format of meetings

Establishing a model of multilateral program during the initial treatment is important because, for many patients, aquatic therapy is the main form of treatment during recovery, possibly responsible for 60% to 85% of therapeutic exercises. All sessions of aquatic therapy should begin with an adaptation to water and a heating period, followed by preparation for consolidation and strength. Recovery, flexibility training and relaxation period must close each lesson. Besides the obvious physiological benefits, providing a musical format for aquatic therapy classes will help maintain momentum and ensure a state of comfort.

Water treatment therapies should address specific disease while working around the affected segment, and as much as possible to exercise the whole body. To encourage independent work, the sequence of exercises should remain fairly consistent from one session to the next for that person to remember the exercises easily.

There will be situations when therapy sessions will be amended because it is done the same work load from day to day. A different number of elements can affect the ability to achieve constant improvements. For example, the treatment may be negatively affected by: (1) failure in maintaining at home the exercise program, (2) absence from training, (3) response to previous treatment, (4) mental state, (5) seasons (6) demanding leisure or work activities (characteristic of patients with back problems who have accused

extreme pain, intensified as a result of incorrect position long associated with or followed by long periods of sitting or standing or lifting excessive or bending during free or professional activities).

When it becomes necessary to modify an exercise, a whole sequence of exercise or aquatic therapy program, the patient need to be informed beforehand. This makes it easier for people to adapt to change and help them understand the reasons for these changes. Hoping to use this information to modify the home therapy / exercise programs. Educating patients about how, when and why changes occur in a sequence of exercises will strengthen confidence in their own malleability and power during and after recovery.

5. Duration

During the early sessions of aquatic therapy, approximately 20 to 30 minutes of the meeting will be used for exercises in the pool. Remaining time can be used for orientation, assessment of patient or relaxing in warm water. Many people tend to exaggerate the perceived effort in the pool because in the water the work is more easy than similar exercises on land. Thus, at least initially, aquatic therapy classes must be made up at some point or until fatigue appears. In other words, the lesson is over although the patient will be able to work more.

Gradually, as the task becomes more demanding, aquatic therapy classes may increase in duration to about 45-60 minutes of activity. When exercising time is coming to 60 minutes, the intensity can be increased by making the same amount of work in a shorter period (eg, decreasing working time but not the number of exercises).

6. The frequency

Frequency in aquatic therapy lessons will vary depending on the amount and frequency of similar lessons on land and the availability and mobility of the pool schedule. To establish a high level of malleability, a minimum of 3 or 4 lessons per week should be scheduled during the early weeks of treatment. This number can change over time, depending on the variations of intensity, duration and / or frequency of land-based lessons, improving or deteriorating physical condition, ability or inability to comply with the patient during the program, and ability to cover the cost of treatment funds.

7. Result
Indicators: the evolving

Indications for transition from one phase to another in aquatic therapy are not clearly outlined. Integration of water and land therapeutic treatments make it difficult to distinguish the origin of positive or negative response to treatment. Any activity outside the recovery will have an impact on progress. Besides, the diversity of positions in exercise and physical properties of water make the measuring of the effects of aquatic therapy treatment even more complicated.

Furthermore, the healing process is sometimes complicated by factors such as poor food, smoking or stress. There may be times for no apparent reason for a sudden drop in service or an increase in pain; however, knowledge of the patient's daily activities since the last therapy session may reveal the source of hampering. An evaluation of therapy sessions from the water and on land can be helpful in determining the patterns of movements and positions contributed to the stalemate in progress.

8. Assessment of pain

For most people, the pain intensified between, during or after sessions of aquatic therapy indicate a problem. If after the addition of new aquatic therapy or activities on land or if the exercising intensity has increased and unusual phenomena appears, such as stiffness the next morning it has to be checked for the reasons. If unexplained pain is persistent and excessive take several days or if there is an unusual muscle pain or crick that restrict movement, the program must be reviewed and amended. Whatever the source of pain, aquatic therapy sessions should not be increased if there is prolonged pain or significant decrease in range of motion resulting from joint or muscle inflammation due to exercising.

To properly evaluate the movement that causes pain, it is important to determine the condition of pain in each therapy session, at every exercise using a system with degree of pain. The grading of pain is a relatively simple description of the pain by location, type and intensity. Using the grading system of pain may be helpful in avoiding problems related to the strain, body position and intensity. Pain scale is from 0 to 10, where 0 represents no pain, 5 is the need for analgesics and 10 patient pain which most individual can imagine. For people who experience back pain or neck, a pain diagram illustrating the location, intensity and type of pain is given to determine successful models of movement centralization (in case of extreme pain) and relieve the symptoms.

9. Orientation lines using pain to advance

Showing pain or its absence during or after exercise may be useful in establishing rhythm or succession of aquatic therapy. The guidelines will help determine the need to reduce or increase the intensity of exercise program.

a.) Establishing a graduated scale of pain that the patient understands and uses like new movement introduced: 0 (no pain), 1, 2, ..., 10 (most pain).
b.) Pain signals are observed: facial expression, signs of verbal, physical expressions (taking his hand back or arched back), inability to complete the movement or rehearsals or changes in body mechanics (posture).
c.) It instructs the patient on what to expect during treatment of aquatic therapy. It has to explain the difference between delayed muscle pain, muscle fatigue, local pain and general fatigue effect. It helps to distinguish these types of patient discomfort and their location and intensity, and understanding that the pain intensified by movement but alleviated by cessation of movement is acceptable for certain conditions.
d.) Periodically patients must complete a schedule to review the changes or patterns in type, intensity and location of pain. This is helpful for patients experiencing extreme pain associated with obstacles at lumbar spine and neck.
e.) When appears an increased pain from the previous meeting it must review the registration of aquatic therapy to find possible causes, domestic activities are discussed with the patient to determine other possible sources of pain. Use caution when exercising increases the intensity of land and water to avoid overloading a particular day.
f.) If signs of increasing pain or fatigue appears and changes the posture, exercise, the model of movement or sequence exercises or exercise stops completely.

g.) Sometimes a change in water depth or temperature will prove helpful in reducing pain during movement. Note the important elements of movement in water: buoyancy, resistance, speed of movement, type of movement, posture, body position, water depth, water temperature and selection of equipment.
h.) Use pain as an indicator for making changes to the program, but not insisted upon it and not allow the focus constantly on pain. Instead, it encourages patients to stay active within the limits of pain.
i.) Grading pain should be used in conjunction with evaluation of functional capacity to measure the benefits of aquatic therapy treatments.

10. Discussions

A functional assessment can identify improvements in range of motion and strength and can help determine when it is necessary for patients to progress. Patients who consistently have a reduction of pain during or after a number of treatment sessions in aquatic therapy

11. Conclusions

Clear indicators for the aquatic therapy are:

- increased range of motion and / or force based on clinical testing and observation;
- reduction of pain and symptoms during and after aquatic therapy sessions that continue for at least a week;
- completing the required number of repetitions and sets of each exercise through a range of acceptable motion;
- patient's ability to quickly and easily move through aquatic therapy sessions.

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