**Literature Review**

       Ruth Tamir, Ruth Dickstein and Moshe Huberman’s article addresses the use of motor imagery practice in the treatment of Parkinson’s disease (PD), which is a new intervention approach for improving motor function. The aim of the study was to compare group treatment with a combination of physical and motor imagery against group treatment with only physical practice in relation to PD. The researchers found out that the combined treatment group revealed considerably faster performance of movement sequences as opposed to the control group. It is also apparent that the experimental subjects shown improved gains in the mental and motor subsets of the Unified Parkinson’s Disease Rating Scale (UPDRS) and unique cognitive abilities tests, comprising of the Stroop and clock drawing tests. It was evident that both groups gained in the activities of daily living scale (Tamir, Dickenstein & Huberman, 2007).

The study used a sample of almost 23 patients with idiopathic PD in which 12 patients acquired the combined therapy, while 11 received only the physical therapy. The two groups did exercises during the 1-h session done on a bi-weekly basis for almost 12 weeks. The outcome measures comprised of the time needed to finish the sequences of mobility, the performance of the balanced assignments and the injury and operational scores of the UPDRS (Tamir, Dickenstein & Huberman, 2007). The aim of the research was to determine the use of motor imagery practice in an effort to learn and develop outcomes without an obvious sensory input-motor output connection. The motor imagery practice is recommended as an alternative approach of exercise therapy that incurs minimum cost and bears no safety risks (Tamir, Dickenstein & Huberman, 2007). In addition, the practice may strengthen the activity of various neuronal rings and useful in the enhancement of the relearning of once-mastered skills without changing physical location.

The conclusion of the study is that motor imagery practice is that the combination of motor imagery and real practice may be useful in the PD treatment, particularly for minimizing bradykinesia. As a result, the application of this treatment routine allows for the expansion of practice time with insignificant risk and low cost.

**Outline**

**Title**: Integration of Motor Imagery and Physical Practice in Group Treatment Applied to

Subjects with Parkinson’s disease

**Author**s: Ruth Tamir, Ruth Dickstein, and Moshe Huberman

**Aim**: The aim of the study was to determine the use of motor imagery practice in an effort to

learn and develop outcomes without an obvious sensory input-motor output connection.

**Method:** The result used 23 patients suffering from idiopathic PD; with 12 of them receiving combined treatments while 11 undergoing physical therapy only. It involved exercises for both the groups that took approximately 12 weeks during the 1-h sessions.  The experimental group received treatments with both imagery and real practice, while the control patients only acquired the physical exercises.

**Sample:** The sample was a population of 23 patients with idiopathic PD.

**Intervention**: The intervention methods used included the imagery and real practices and the physical exercises.

**Results:** The outcome of the study was that the combined treatment group displayed faster performance of movement sequences compared to the control group.

**Measuring Outcomes**: The PD patients after using the imagery motor practices felt better than the control group, which implies that the treatment was effective.

**Challenges:** The challenges included activity-triggering problems like standing on a narrow base and reacting to perturbation. The other challenge was the realization of errors in the experiment, especially using the Stroop test that required awareness and concentration, which were possibly enhanced in the experimental subjects.

**Inclusion and Exclusion Criteria**: The inclusion and exclusion criteria were that all the subjects were patients with idiopathic PD.

**Reference**

Tamir, R. T., Dickenstein, R., & Huberman, M. (2007). Integration of Motor Imagery and

Physical Practice in Group Treatment Applied to Subjects with Parkinson’s Disease. *The American Society of Neurorehabilitation,* 68-75.