1. Abstract
2. Keywords
3. Introduction
    a. Overview of Parkinson's Disease:
        i. Current statistics regarding the prevalence, incidence, mortality, and morbidity of PD
        ii. Discussion of disease pathophysiology. PD occurs due to a progressive loss of neurons within the substantia nigra.
        iii. Discussion of common symptoms PD patients experience
        iv. Overview of current pharmacological treatments used to manage PD, along with the common adverse drug reactions of these treatments.
4. Review of Impact on Symptoms Commonly Experienced by PD patients
    a. Neuroprotective effects
        i. Enhanced neuroplasticity
        ii. Increased levels of brain-derived neurotrophic factor (BDNF)
        iii. Increased cerebral gray matter volumes
        iv. Improved corticomotor excitability
        v. Mitigation of effects of dopaminergic neurotoxins
        vi. Increased dopamine release
            1. Aerobic exercise led to increased release of dopamine from the caudate nucleus
        vii. Altered responsivity of the ventral striatum
            1. Aerobic exercise led to increased ventral striatal activation

b. Decreased severity of motor symptoms
    i. Resistance training led to decreased levels of bradykinesia in PD patients.
c. Increased functional mobility and balance
    i. Incremental treadmill training led to improved balance scores in PD patients.
d. Improvement to gait patterns
    i. Sensory training promoted increased stride length and stride velocity within PD patients.
e. Increased quality of life and emotional wellbeing
    i. Sensory training and boxing both lead to increased quality of life (QOL) in PD patients.
    ii. Resistance training led to increased QOL within PD patients
    iii. PD patients that participated in the Rock Steady Boxing program experienced increased QOL
    iv. Resistance training led to decreased depression levels among PD patients
f. Improvement to manual dexterity
g. Resistance to adverse drug reactions
    i. Conventional pharmacotherapy used to treat PD patients may increase the risk of falling in PD patients. An ADR of dopaminergic medication is orthostatic hypotension, which may cause syncopal falls. Treadmill training can help mitigate postural instability that the dopaminergic medication may cause.

5. Conclusion

a. Encourage practicing medical providers to incorporate exercise programs into their plans when managing PD patients.
b. Encourage medical providers to be able to discuss and work around potential barriers that may have prevented PD patients from participating in the Rock Steady Boxing Program such as living environment, driving status, educational background, employment status, and income levels.
c. Highlight the importance of choosing a patient-specific exercise program, while also keeping patient compliance in mind.

6. References