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Mindful Meditation as an Intervention to Improve the Quality of Life in Patients with Parkinson's Disease: A Systematic Review

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Recommended Citation

Peiser, Sarah; Hunyara, Tyler; Reese, Kyle; Grzech, Joseph; and Brogan, Laurie, "Mindful Meditation as an Intervention to Improve the Quality of Life in Patients with Parkinson's Disease: A Systematic Review" (2020). *Student Research Poster Presentations 2020*. 60.

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KEY TERMS

Parkinson's Disease (PD) - is a neurodegenerative disorder that affects predominantly dopamine-producing neurons located in the substantia nigra.^{1,2,3}

Mindful meditation, mindfulness, or mindfulness-based interventions (MBI) - are self-awareness training practices that involve focusing one's mind on personal experiences such as emotions, thoughts, and sensations in the present moment⁴.

Quality of Life (QoL) - is an umbrella term for an individual's idea of their own satisfaction and well-being on a day to day basis.^{5,6}

PURPOSE

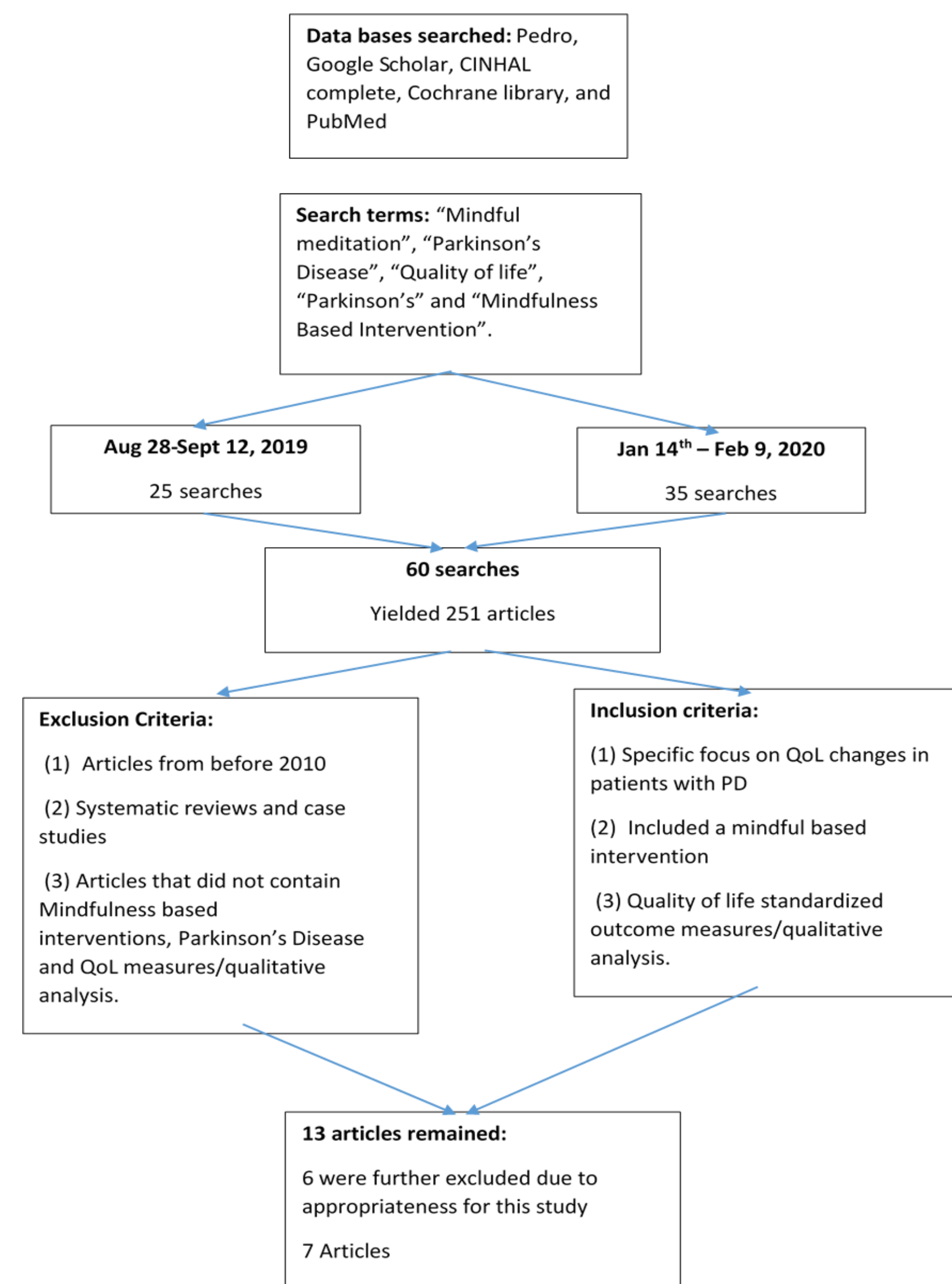
The purpose of this review is to look at the connection between mindful meditation and mindfulness based interventions and its effect on the quality of life of those diagnosed with Parkinson's disease.

INTRODUCTION

One of the main aspects of Parkinson's disease is its neuropathic degeneration and its destruction on the person's mind and body connection.^{1,2} Mindful meditation is the practice of self-awareness and has been shown to cause a reduction in non-motor symptoms such as decreasing blood pressure, relieving stress, and reducing chronic pain. These changes can lead to perceived improvement in the patient's quality of life.⁷ If there is the possibility for psychological changes in the body, then there may be potential in using it to treat neuropathic degenerative diseases without the harmful side effects of pharmacologic interventions and invasive procedures.

Stage of Parkinson's Disease	1	2	3	4	5
Severity of Symptoms	MILD Symptoms of PD are mild and only seen on one side of the body (unilateral involvement)	MILD Symptoms of PD on both sides of the body (bilateral involvement) or at the midline	MODERATE Symptoms of PD are characterized by loss of balance and slowness of movement	SEVERE Symptoms of PD are severely disabling	SEVERE Symptoms of PD are severe and are characterized by an inability to rise
SYMPTOMS	Tremor of one hand Rigidity Clumsy Leg	Loss of facial expression on both sides Decreased blinking Speech abnormalities	Balance is compromised Inability to make the rapid, automatic and involuntary adjustments	Patients may be able to walk and stand unassisted, but they are noticeably incapacitated	Patients fall when standing or turning May freeze or stumble when walking Hallucinations or delusions.

SEARCH METHODS



STATISTICAL SIGNIFICANCE

Article	Outcome Measures Used:	Significant/Not significant
Advocat et. Al. ⁴	DASS- 21 FMI PDQ-39 LOC HBQ	No Significant difference Significant Difference No Significant difference Significant Difference Significant Difference
Birtwell et. Al. ⁸	DASS-21 MAAS PDQ-39	Significant Difference No Significant difference No Significant difference
Cash et. Al. ⁹	Generalized anxiety disorder - 7 Everyday cognitive questionnaire Apathy Scale FFMQ PDQ -39 PD Nonmotor systems questionnaire Patient Health Questionnaire -9	No Significant difference Significant difference in subcategory No Significant difference Significant Difference Significant difference in subcategory No Significant difference Significant difference
Dissanayaka et. Al. ¹⁰	GAI HAM -D OQ-45 PD cognitive rating scale (PDCRS) MDS_UPDRS FFMQ-15 PDQ-39	Significant Difference Significant Difference Significant Difference in sub scores Significant Difference in sub scores No Significant difference No Significant difference No Significant difference
Picket et. Al. ¹¹	BDI FFMQ PDQ-39 UPDRS	No Significant difference Significant Difference in sub scores (observe) No Significant difference Significant Difference in sub scores (motor)
Son et. Al. ¹²	STAI GDS Korean Montreal Cognitive Assessment Parkinson's Disease Sleep Scale Activities of Daily Living Quality of Life of Patients with Parkinson's Disease	Significant Difference Significant Difference Significant Difference Significant Difference Significant Difference
Fitzpatrick et. Al. ¹³	Qualitative analysis	No outcome measures used

MDS_UPDRS = Movement Disorder Society Unified Parkinson's Disease Rating Scale
PDQ-39 = Parkinson's Disease Quality of Life Questionnaire
PDCRS = Parkinson's Disease Cognitive Rating Scale
HAM-D = Hamilton Depression Rating Scale
GAI = Geriatric Anxiety Inventory
FFMQ = Five Facet Mindfulness Questionnaire
BDI = Beck Depression Inventory
OQ-45 = Outcome Questionnaire
STAI = State trait anxiety inventory
GDS = Geriatric Depression scale
FMI = Freiburg Mindfulness Inventory
DASS-21 = Depression Anxiety Stress Scale
HBO = Health and Behavior questionnaire
LOC = Locus of control
UPDRS = Unified Parkinson's Disease Rating Scale
MAAS = Mindful Attention Awareness Scale

DISCUSSION

Anxiety/stress/ depression^{4,8,9,10,11,12}

- Significant decreases in stress, anxiety and depression were seen resulting in positive changes to the participants' daily life

Cognitive function^{9,10,12}

- Convincing evidence that mindfulness is useful for improving aspects of emotional and cognitive functioning
- Significant difference was found in language and executive functioning-directed attention
- Showed significant improvement for memory, alternating verbal fluency and action verbal fluency

ADL's^{10,12}

- Significant changes were seen resulting in increased independence with daily activities.
- However, the duration of the study significantly impacted the results

Sleep¹²

- Mindful meditation has been shown to decrease anxiety and therefore help patients with PD deal with insomnia
- Researchers found that being able to have a good night's sleep increased one's perceived quality of life

Mindfulness^{4,9,10,11}

- Significant difference after the study in the Five Facet Mindfulness Questionnaire subscale observation

QoL^{4,8,9,10,11,12}

- Relaxation techniques helped patients to focus their attention on the positive aspects of their life
- Participants reported some positive change in their experience of living with Parkinson's Disease
- Negatively, Picket found that pain was increased in many subjects

Social^{4,9,13}

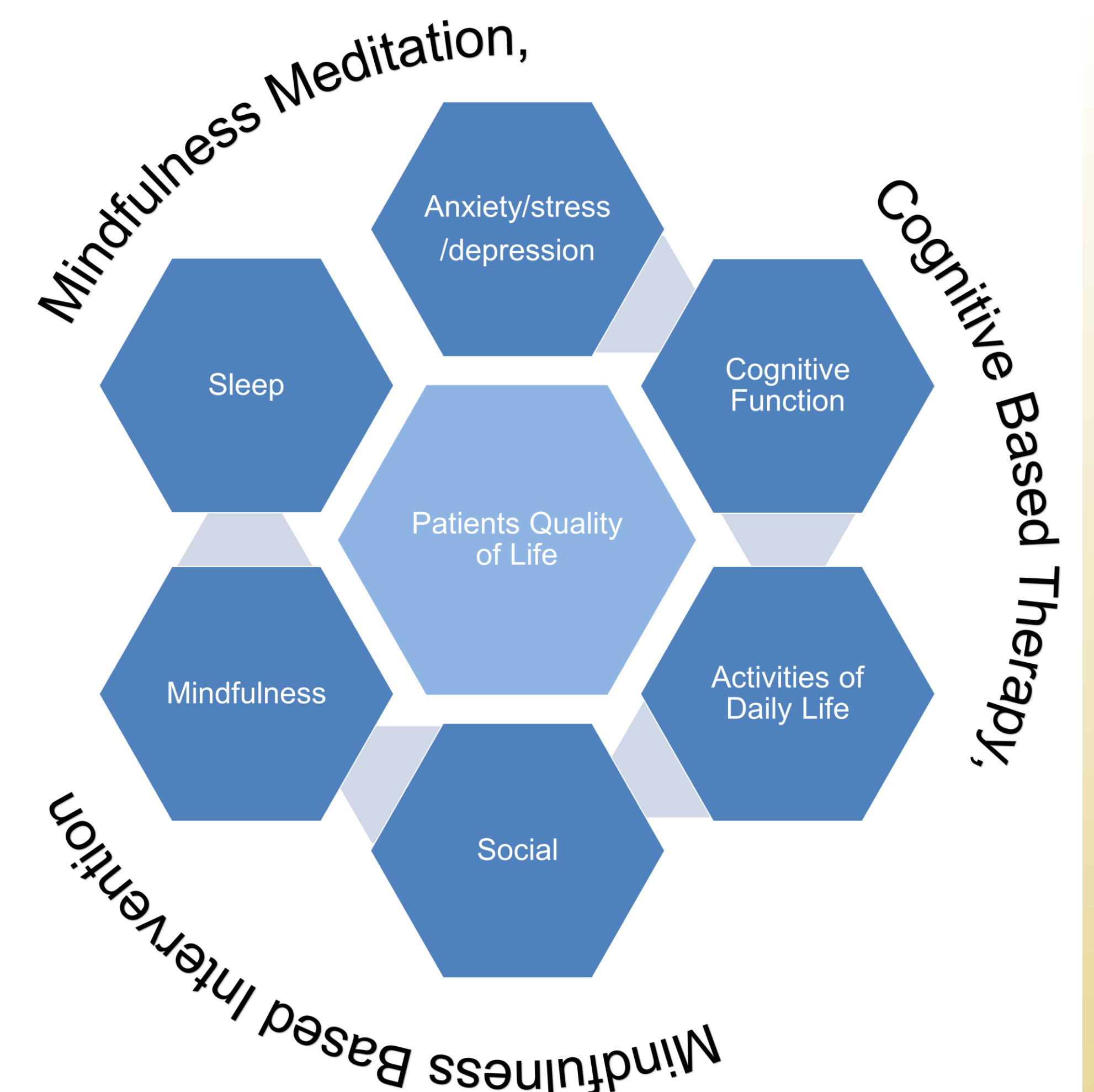
- After attending a mindfulness course, patients noticed a decrease in their tendency to avoid social events

CONCLUSION

Throughout these review articles, mindful meditation and MBI, show promise in reducing non-motor symptoms such as: cognitive change, anxiety, depression, stress management, behavior, mindfulness and quality of life. Using MBI's, along with traditional methods of physical therapy, may improve quality of life in patients with Parkinson's Disease. Shorter, daily sessions of mindfulness meditation appear to be better suited for people with Parkinson's Disease. Further research is needed to look at larger sample sizes, including equal gender distribution and programs of duration that last longer than 8 weeks. This systematic review and others like it were very limited due to the amount of research on this given topic at this time. More research of the effects of mindfulness based interventions of patients with PD for quality of life purposes is warranted at this time.

IMPLICATIONS FOR PRACTICE

Mindfulness based interventions can be used along with other treatments to help reduce the progression of non-motor symptoms in patients with Parkinson's Disease. In some cases, mindfulness based interventions may help to reduce the need for more invasive procedures, while also improving the quality of life of patients who have Parkinson's Disease.



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