



Craft Pilot's Orb-ix™: Enhancing Cognition and Well-Being in Individuals Living with Dementia

Dementia, particularly Alzheimer's disease, poses significant challenges on a global scale, impacting individuals, families, and healthcare systems.

Craft Pilot's, Patent Pending Orb-ix introduces a novel approach to address cognitive and psychosocial well-being in people living with dementia through interactive puzzle play. This white paper delves into the therapeutic potential of Craft Pilot's Orb-ix, drawing upon extensive research on the cognitive, emotional, and social advantages of puzzles in the context of dementia care. By providing cognitive stimulation and serving as an emotional outlet, Craft Pilot's Orb-ix aims to improve the quality of life for individuals living with dementia. Through a multidimensional analysis, this paper delineates the cognitive, emotional, and social benefits of puzzle engagement for dementia patients, advocating for the integration of Craft Pilot's Orb-ix into dementia care programs.





Introduction

Alzheimer's disease and related dementias pose significant societal and economic challenges,¹ with millions affected globally. Statistics indicate that approximately 10.8% of individuals aged 75 and above are living with Alzheimer's disease.² As populations age, the global prevalence of dementia continues to rise, highlighting the need for effective interventions to mitigate its impact.³ Craft Pilot's Orb-ix emerges as a promising avenue for enhancing well-being in dementia patients, leveraging the cognitive, emotional, and social benefits of puzzle engagement. By integrating research-backed strategies with an innovative design, Orb-ix aims to address the multifaceted needs of individuals living with dementia.

Background

The cognitive enrichment hypothesis highlights the potential of socially and mentally stimulating activities in mitigating cognitive decline and fostering cognitive reserve in older adults.⁴ Research on puzzle engagement, particularly jigsaw puzzles, suggests that they tap into various cognitive abilities essential for maintaining cognitive health and may serve as a protective factor against cognitive aging and dementia.⁵ Similar studies on word and number puzzles indicate a favorable link between frequency of use and cognitive function.⁶ Additionally, crossword puzzle participation has also been associated with delayed onset of memory decline in individuals who later developed dementia.⁷ Similar benefits have also been reported in individuals using tablet puzzle-game apps, indicating that digital forms of puzzles can also contribute to cognitive health.⁸ In addition to their cognitive benefits, engaging in puzzles has been shown to have emotional implications for individuals living with semantic dementia (SD).⁹ Jigsaw puzzles, in particular, have been observed to become a

primary activity of daily living for a notable proportion of patients with semantic dementia (SD), indicating not only enjoyment but also skill and a sense of purpose in completing them.⁹ Furthermore, the activity of puzzling seems to provide a form of mental engagement and focus, allowing SD patients to be "in the moment" and temporarily set aside their worries.⁹ The findings suggest that puzzles, particularly jigsaw puzzles, may serve as a haven for SD patients, offering a meaningful and enjoyable activity. Moreover, the benefits observed may extend to other forms of dementia, providing opportunities for non-pharmacological interventions that promote cognitive well-being and emotional regulation in affected individuals. Building upon this foundation, Craft Pilot's Orb-ix offers dementia patients a therapeutic outlet for cognitive engagement and emotional regulation. By providing individuals with enjoyable and stimulating activities, Craft Pilot's Orb-ix aims to enhance cognitive function, emotional well-being, and social interaction in dementia patients.

1 Aranda et al., 2021; Nandi et al., 2024; Tay et al., 2024

2 Alzheimer's Association, 2023; Rajan et al., 2022; Reiman et al., 2012

3 Nichols et al., 2022

4 Cegolon & Jenkins, 2022; Hertzog et al., 2008; Oveisgharan et al., 2020; Wu et al., 2023

5 Fissler et al., 2017; Fissler et al., 2018; Lee et al., 2018; Vemuri et al., 2012

6 Brooker et al., 2019a; Brooker et al., 2019b

7 Pillai et al., 2011

8 Givon Schaham et al., 2022; Urwyler et al., 2023

9 Green & Patterson, 2009

Problem Statement

Dementia poses multifaceted challenges, impacting cognitive, emotional, and social domains of functioning.¹ Current interventions often focus on pharmacological approaches, overlooking the potential of non-pharmacological interventions in improving quality of life for dementia patients. There is a need for accessible and engaging activities that can provide cognitive stimulation and emotional fulfillment for individuals living with dementia, addressing both their cognitive and psychosocial needs.

Craft Pilot's Orb-ix™ Solution

Craft Pilot's Orb-ix offers a tailored solution to address the cognitive and emotional needs of dementia patients through engaging puzzle play. Its spherical design and tactile experience make it accessible and enjoyable for individuals at various stages of dementia. By promoting cognitive engagement, problem-solving, and spatial reasoning, Craft Pilot's Orb-ix stimulates neural pathways and supports cognitive reserve in dementia patients. Additionally, the emotional satisfaction derived from completing puzzles contributes to mood regulation and overall emotional well-being.



Analysis

Craft Pilot's Orb-ix is specifically designed to cater to the unique needs of dementia patients:



Cognitive Stimulation

Craft Pilot's Orb-ix engages multiple cognitive abilities, including visual perception, constructional praxis, mental rotation, and working memory, essential for maintaining cognitive function in dementia patients.



Emotional Fulfillment

Completing Orb-ix puzzles provides a sense of accomplishment and satisfaction, promoting positive emotions and mood regulation in dementia patients.



Social Engagement

Orb-ix puzzles can be enjoyed collaboratively, fostering social interaction and a sense of connection among dementia patients and their caregivers or peers.

¹ Aranda et al., 2021; Cipriani et al., 2020

Benefits of Puzzle Engagement for Dementia Patients

Research on puzzle engagement highlights several benefits for individuals living with dementia,¹ including:



Cognitive Preservation

Regular engagement in puzzles may help preserve cognitive function and delay the onset of dementia symptoms by promoting cognitive reserve and neural plasticity.²



Emotional Regulation

Puzzle solving can serve as a coping mechanism, offering a psychological timeout from stressors and enhancing emotional well-being in dementia patients.³ This is particularly relevant for Alzheimer's prevention and management, as chronic stress is known to negatively impact cognitive health and contribute to the progression of dementia.⁴



Quality of Life

The sense of purpose, accomplishment, enjoyment and social engagement derived from puzzle engagement contributes to the overall quality of life for dementia patients, promoting feelings of agency and dignity.⁵



Craft Pilot's Orb-ix™ emerges as a promising avenue for enhancing cognitive well-being in dementia patients

¹ Fissler et al., 2018; Green & Patterson, 2009; Lee et al., 2018; Vemuri et al., 2012

² Lee et al., 2018; Fissler et al., 2018; Vemuri et al., 2012

³ Fissler et al., 2018; Lin et al., 2022

⁴ Wilson et al., 2013

⁵ Green & Patterson, 2009; Ziebuhr et al., 2023



Recommendations

To maximize the benefits of Orb-ix for dementia patients, caregivers and healthcare professionals are encouraged to:

- Incorporate puzzle play into daily routines and therapeutic activities for dementia patients.
- Provide guidance and support to ensure meaningful engagement and enjoyment of puzzle-solving activities.
- Foster social interaction by encouraging group puzzle sessions and collaborative play among dementia patients.

Conclusion

Craft Pilot's Orb-ix represents a transformative approach to enhancing cognitive, emotional, and social well-being in dementia patients. By harnessing the benefits of puzzle engagement, Craft Pilot's Orb-ix offers a holistic solution to address their multifaceted needs. Through its accessible design and therapeutic potential, Craft Pilot's Orb-ix holds the promise of significantly improving the quality of life for individuals living with dementia and making valuable contributions to the development of comprehensive dementia care programs.

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