

DIVIDAT partners with YMCA of Metro Denver to assess value-added programming for members with Parkinson's Disease and Balance Challenges



Background

The prevalence of Parkinson's disease (PD) in Colorado is alarming, with an estimated 17,000 individuals living with the condition and a mortality rate of 11%, one of the highest in the country. The inadequate current state of care leads to increased need for full-time care, adverse outcomes such as cognitive impairment and falls, and a higher risk of long-term care placement. To address these issues, it is essential to promote non-clinical therapeutic programs that can mitigate or manage these problems, as well as provide support for the psycho-social consequences of PD, including depression and anxiety.



Case Study Overview and Objectives

The case study was not meant to assess the scientific credentials of DIVIDAT Senso, rather the focus was to examine the suitability of Senso in a non-clinical, fitness community environment setting such as the YMCA. We studied whether the Senso technology can offer members living with PD and severe balance concerns an enhanced non-clinical, therapeutic program that can evidentially contribute to the mitigation or management of adverse physical and psycho-social outcomes, in combination with the ensemble of therapies they undergo.

Determine if the DIVIDAT program and technology meet the needs of YMCA members for Parkinsons' and Balance Therapy.



Among the variety of PD programs and service providers in the Metro Denver area, what is the unique value-added of a YMCA <>DIVIDAT program ?

Determine if DIVIDAT has strong marketability for the YMCA beyond a specific audience for Parkinsons' and Balance Therapy.



How can DIVIDAT be used by other YMCA members, and for what benefits? In determining if the YMCA adopts DIVIDAT what would be the 'GO<>NO-GO' factors?



Case Study Details



Participants
27 enrolled
19 completed



Age range
55-85
years old



Diagnosis
PD: 17
Balance
challenges: 7



Gender
Male: 16
Female: 11



Training Expectation
10 minutes
2 times/week
for 8 weeks



Evaluation Points
Pre & post
assessments

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Data Output



Pre and post Dividat Senso digital assessment values



The game "Targets" dynamic balance results



The game "Flexi" cognitive results



The completed participants increased their expected participation by 14%. Each completed participant averaged just under 3 hours of the training effect.



The game "Evolve" static balance results



The Sway test physical function



The Stroop test cognitive function



Results (% reflects the overall completed participants group average)

The Game "Targets"

Trained functions: action planning, anticipatory reaction, goal-directed stepping

92%

Improved Game Score

The Game "Evolve"

Trained functions: anticipatory reaction, inhibition, selective attention, static balance and weight shifts

115%

Improved Game Score

The Game "Flexi"

Trained function: task switching

32%

Improved Reaction Time

Sway Test (Romberg)

Measures static balance and postural control

Eyes Open (Static Function)

4%

Increase in Fall Risk

Eyes Closed (Vestibular Function)

26%

Decrease in Fall Risk

Stroop Test

Measures attention & processing speed using average reaction time in milliseconds as well as measuring error rate

11%

Improved Reaction Time

16%

Decrease in Errors

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Case Study Summary

1

The completed participation rate exceeded expectations by 14%, which suggests acceptance and enthusiasm among YMCA members for the cognitive motor technology as a complement to existing fitness programs. This is further reinforced by an overall compliance rate of 70.4%.

2

The ease of use and adoption of the Senso device appears to facilitate the learning of skills to improve reaction time, cognition, balance, and overall movement, with participants being able to use it independently without assistance.

3

By gaining a deeper understanding of physical-cognitive interplay, the YMCA trainers expressed it was a rewarding stimulus to their role and career development as a personal trainer.

4

Some logistical constraints had a modest impact on operations. These include the somewhat isolated location of the device and occasional internet connection issues. These issues are easily mitigated.

5

The training effect from the small dose and frequent training sessions was notable, suggesting that the technology's specificity was well-suited for this population. The results showed significant improvements in reaction time and motor control, indicating that the training was effective in enhancing the participants' cognitive and motor skills.

6

The results demonstrated a modest improvement in balance function, more so in the eyes-closed phase of the SWAY assessment, indicating enhanced vestibular function and suggesting a positive impact on the participants' ability to maintain balance and equilibrium.

7

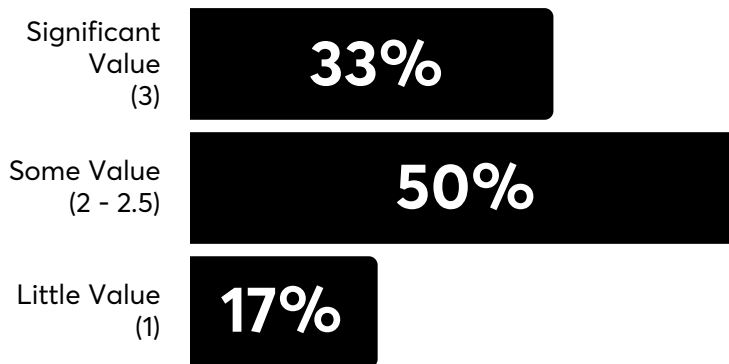
The results confirmed that the training was effective in improving cognitive function, verifying that the Think & Move® strategy can indeed achieve specific neuroplasticity improvements with a minimal dose and frequency of training, offering a promising approach for enhancing cognitive abilities.

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Observations: Perceptions on Usefulness and Future Use

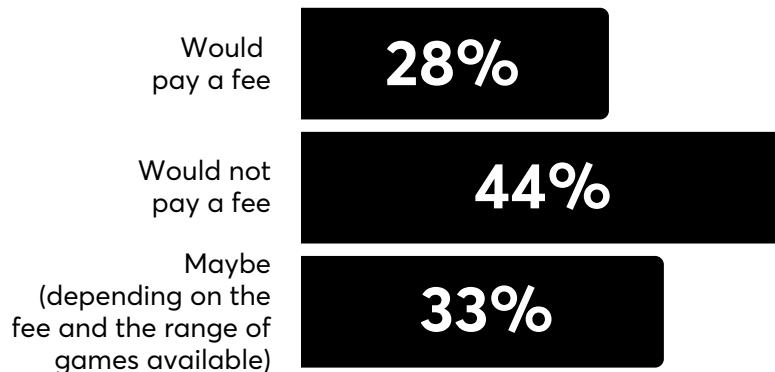
On a scale of 1 to 3, do you feel that the DIVIDAT Senso program added significant value to your overall health and wellness regime?



“

I have enjoyed the Dividat machine very much. It definitely added significantly to my health and wellness. I would definitely use it if it became available.

If the YMCA included the Senso platform and its programs as a fee-based option (similar to EGYM), would you use it? Yes, No, Maybe. Why? Why not?



“

I would continue to use it if it were available, probably once or twice a week. Three if I could get my motivation to go to the gym more frequently.

Personal Stories and Insights

Ted (64) has been diligent about the Senso sessions as part of his overall regime to manage the PD. He feels that the YMCA environment is highly suited to more targeted PD programs both in scope and scale.

For Bob (58) one key feature of DIVIDAT is the community element – the Y is not a clinic, it doesn't have the institutional feel. As his days become more filled with medical and neurological care [hope] to come to the Y for the community atmosphere even while doing therapy. The YMCA is an environment that nurtures physical, social, and emotional arena.

Jane (73) has been a member of the YMCA for 40 years and is doing DIVIDAT because she likes being in a study to further research and secondly it's fun.