

Soothing the Soul: Cost-Effectiveness Evaluation of Group Music Therapy in Reducing Clinically-Significant Agitation among People with Dementia

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OBJECTIVES

Agitation is one of the most troubling and negatively impactful neurologic symptoms of dementia, and one which can be both difficult and costly to manage.⁵⁻⁷ Music therapy has been found to be one of few safe, inexpensive, and effective interventions that help reduce agitation among people with dementia, but determining cost-effectiveness has not been completely captured in the existing literature.¹⁵

This study estimates the incremental cost-effectiveness ratio (ICER) of group music therapy (MT) in reducing clinically-significant agitation among people with dementia (PWD) as compared to treatment as usual (TAU). We aim to better define the cost-effectiveness of MT among this population by leveraging the findings of a randomized control trial¹⁶ and expand on existing literature.

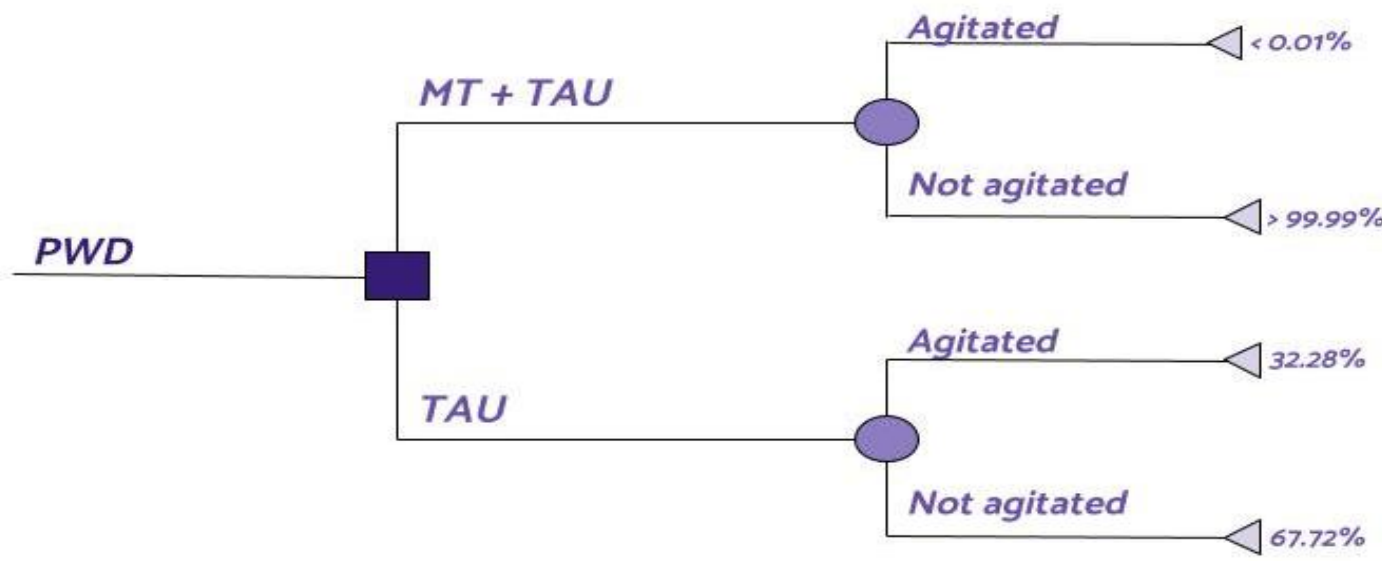
METHODS

- TREATMENTS:** Group music therapy delivered in a nursing home setting (estimated to be approximately 10 patients per group)
- TIME HORIZON:** 6 weeks (time period of intervention)
- PERSPECTIVE:** Payer (patient and their families)
- METHOD:** Decision tree with transition probabilities calculated via RCT results and assuming normal distribution of agitation scores as measured by Cohen-Mansfield Agitation Inventory (CMAI). Clinical agitation score leveraged from published literature and combined with pre and post intervention agitation probability¹⁷
- COSTS AND UTILITIES:** Derived from published literature and expressed in 2022 USD^{10, 18-19}

KEY CONCLUSIONS

- > Group music therapy is a cost-saving intervention in managing agitation in PWD
- > Qualities that lend MT to being cost-saving are:
 - > Being a low-cost intervention
 - > Resulting in no adverse events
 - > Significantly reducing clinical agitation
- > This finding is likely underestimating the value of MT for PWD as the focus is narrowed to only include its impact on agitation and subsequent institutionalization rates and not including impact on quality of life or other neurological symptoms of dementia such as depression and anxiety.

DECISION TREE MODEL



Transition probabilities were calculated from Lin et al. results and using an assumption of a normal distribution of CMAI agitation scores around the mean.

KEY MODEL INPUTS

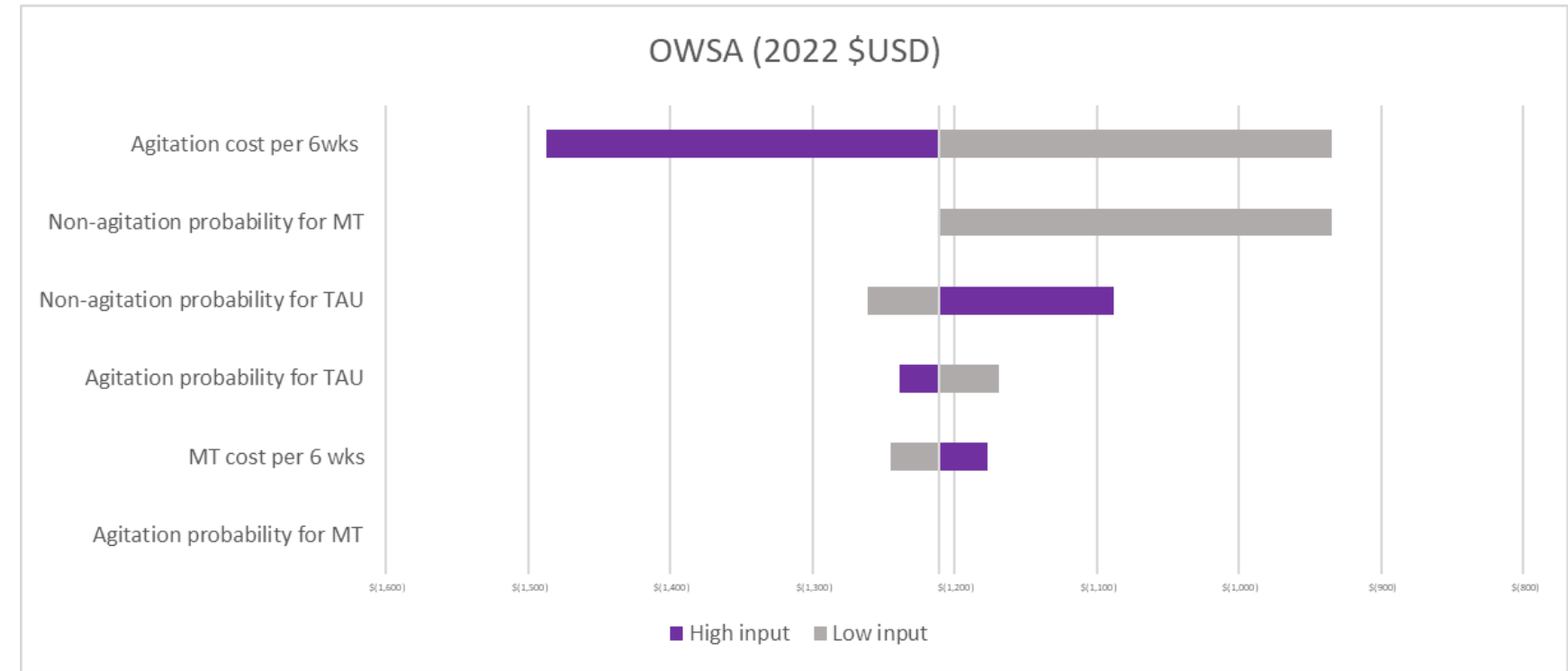
Parameter	Value	Reference
Risk of agitation with MT	0.000032	Calculated from Lin et al. results
Risk of no agitation with MT	0.999968	Calculated from Lin et al. results
Risk of agitation with TAU	0.3271	Calculated from Lin et al. results
Risk of no agitation with TAU	0.6729	Calculated from Lin et al. results
Cost of MT	\$55	[19]
Cost of TAU	\$8,880	[18]
Cost of agitation	\$1,381	[10]

RESULTS

The calculated ICER shows that MT costs -\$1,213 per 6 agitation-free weeks (Table 4). A negative ICER demonstrates that MT dominates TAU as a treatment strategy and is a cost-saving intervention. We can therefore interpret the resulting ICER as MT saves \$1,213 for every 6 weeks of avoided agitation.

Decision	Non-agitated probability	Sum weighted costs	ICER
Group Music Therapy	0.999968	\$8,934.74	
Treatment as Usual	0.6729	\$9,325.58	
Incremental	0.322768	-\$390.84	-\$1,210.89

SENSITIVITY ANALYSIS



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