Physical activity-based treatment of CIN: dance versus exercise.

Novel Interventions for chemotherapy-induced neuropathy (CIN): the relevance of intrinsic motivation.

L Worthen-Chaudhari[a], PM Schnell[b], ME Hackney[c,d], MB Lustberg[d]

[a]Department of Physical Medicine & Rehabilitation, College of Medicine; [b]Division of Biostatistics, College of Public Health, The Ohio State University, Columbus, OH; [c]Division of Geriatrics and Gerontology, Emory University, Atlanta, GA; . [d]Center for Visual and Neurocognitive Rehabilitation, United States Department of Veterans Affairs, Atlanta, GA; [e]Center for Breast Cancer, Yale Cancer Center Yale University, New Haven, CT, US

Background

- Taxane-based chemotherapy agents cause neural complications, such as chemotherapy-induced neuropathy (CIN), among up to 80% of breast cancer (BC) survivors receiving them (Song, 2017; Lustberg, 2023)
- Physical activities such as exercise (Zimmer, 2018) and partnered dance (Worthen-Chaudhari, 2019; Lantis, 2023) have emerged as nonpharmacologic treatment options
- Questions remain regarding motivating participation in physical activity (Frikkel, 2020).
- Intrinsic motivation in physical activity likely mediates participation and outcomes (Worthen-Chaudhari, 2024).

Research Objective

- To evaluate intrinsic motivation evoked among BC survivors with CIN participating in different forms of physical activity-based intervention.

Hypothesis

- Participant-reported intrinsic motivation will be higher among those randomized to partnered Adapted Argentine Tango dance (AdapTango) than among those randomized to standard-of-care home exercise.

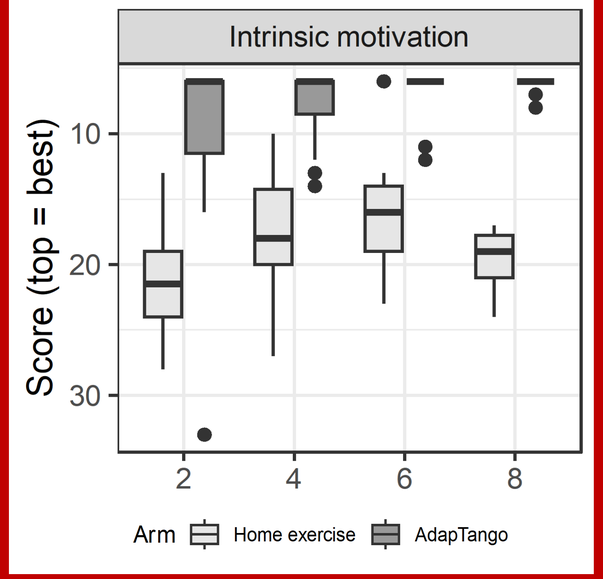

Figure 1. Box plot of intrinsic motivation by week. Middle lines represent median values. Tops and bottoms of boxes represent 1st and 3rd quartiles. Ends of whiskers represent the most outlying points within 1.5 inter-quartile range (IQR) of the 1st or 3rd quartiles. Dots represent outliers beyond 1.5 IQR. Intrinsic motivation possible score range is 6-36 (6 = best). AdapTango was more intrinsically motivating than home exercise (p<0.001 for all four timepoints tested).

UPDATE in SURVIVORSHIP: Partnered tango dance was more intrinsically motivating than standard-of-care home exercise among BC survivors with CIN.

LIse.Worthen-Chaudhari@osumc.edu

Design

- Randomized interventional clinical trial.
- Setting: Community cancer survivorship facility.

Methods

- Participants: 52 BC survivors with self-reported CIN and demonstrated postural control deficits (Worthen-Chaudhari, et al. (2018)).
- Intervention: Participants were randomized 1:1 to 8 weeks of intervention that took the form of (a) partnered, Adapted Argentine Tango or (b) best-practice home exercise program. Frequency: 2x per week. Duration: no more than 1.25 hours per session.
- Main Outcome Measure: Intrinsic Motivation Inventory (Ryan and Deci, 2000). Collected every 2 weeks over the 8-week intervention course.

Results & Conclusion

- Intrinsic motivation was higher among survivors randomized to the AdapTango intervention for all timepoints tested (p<0.001; Figure 1)
- Physical activity that took the form of partnered Tango dance was more intrinsically motivation than home exercise for this cohort of BC survivors

References

Song, et al. (2017) *Supp Care Cancer*
Lustberg, et al. (2023) *Nature Rev Clin Onc*
Zimmer, et al. (2018) *Supp Care Cancer*
Worthen-Chaudhari, et al. (2019) *Clin Biomechanics*
Lantis, et al. (2023) *Trials*
Frikkel, et al. (2020) *BMC Palliative Care*
Worthen-Chaudhari, et al. (2024) *Front Psych*
Worthen-Chaudhari et al. (2018). *Gait & Posture*
Ryan and Deci (2020) *Amer Psychologist*

Acknowledgements: Thank you to Collaborators, Participants. Supported by R21-AG068831, UL1TR001070.

Disclosures: LWC receives royalties from the start-up business "Games That Move You".

MASCC/AFSOS/ISOO ANNUAL MEETING
JUNE 27-29 · SUPPORTIVE CARE IN CANCER

THE OHIO STATE UNIVERSITY
COLLEGE OF MEDICINE