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Yoga for Neurodiverse Individuals:

A best practice plan for therapists, teachers, and parents of children and young adults with autism spectrum disorder

Mitchell Johnston, OTD/S

Site Mentor - Erin Schirm

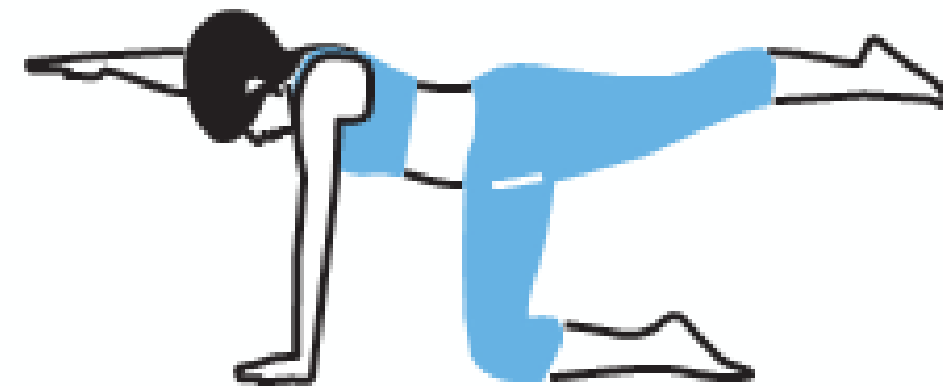
Faculty Mentor - Rajvinder Bains



University of Pacific | School of Health Sciences

Background

- People with autism spectrum disorder (ASD) and other neurodiverse issues may experience difficulties with:
 - Balance
 - Postural Control
 - Gross motor performance
 - Vestibular issues
 - Proprioception
 - Self-regulation
 - Retained-primitive reflexes
 - Restrictive and repetitive behaviors



(Morgan, 2022)

Background

- Why Yoga for this population?
 - Since 2006, yoga has been supported in literature as a form of alternative treatment for neurodiverse individuals (Ramanathan et al., 2021)
 - Yoga can help overcome persistent primitive reflexes and help integrate these reflexes that may impact motor development and learning (Morgan, 2022).
 - While the “who” and the “why” remains clear through literature, the “what” and the “how” presents questions.

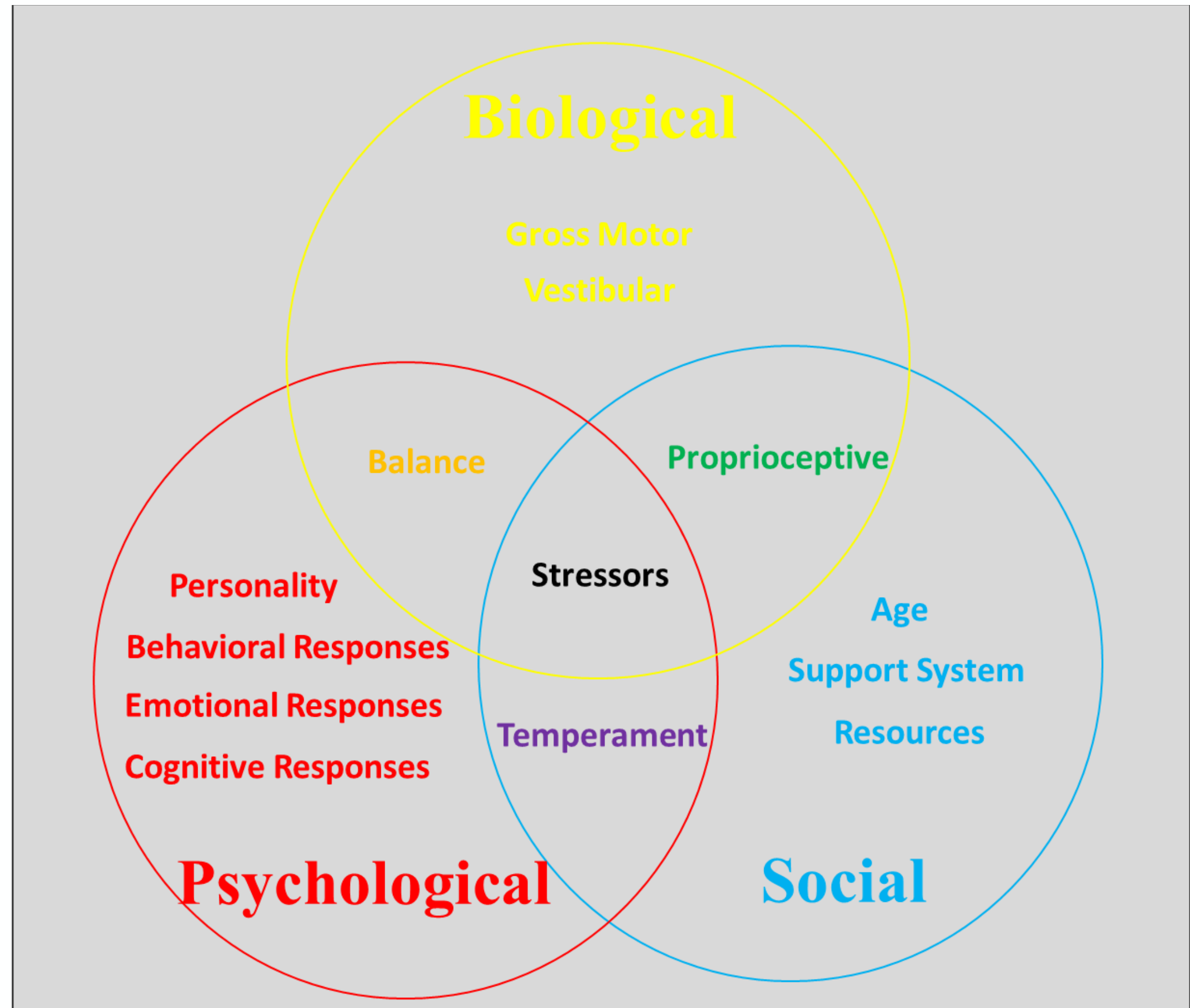
Program Purpose

- To meet the needs of neurodiverse individuals through an alternative therapeutic approach using yoga.
- To develop a best practice manual to provide an easy resource for therapists, teachers, and parents of neurodiverse individuals within therapy sessions, at school, or within the home.

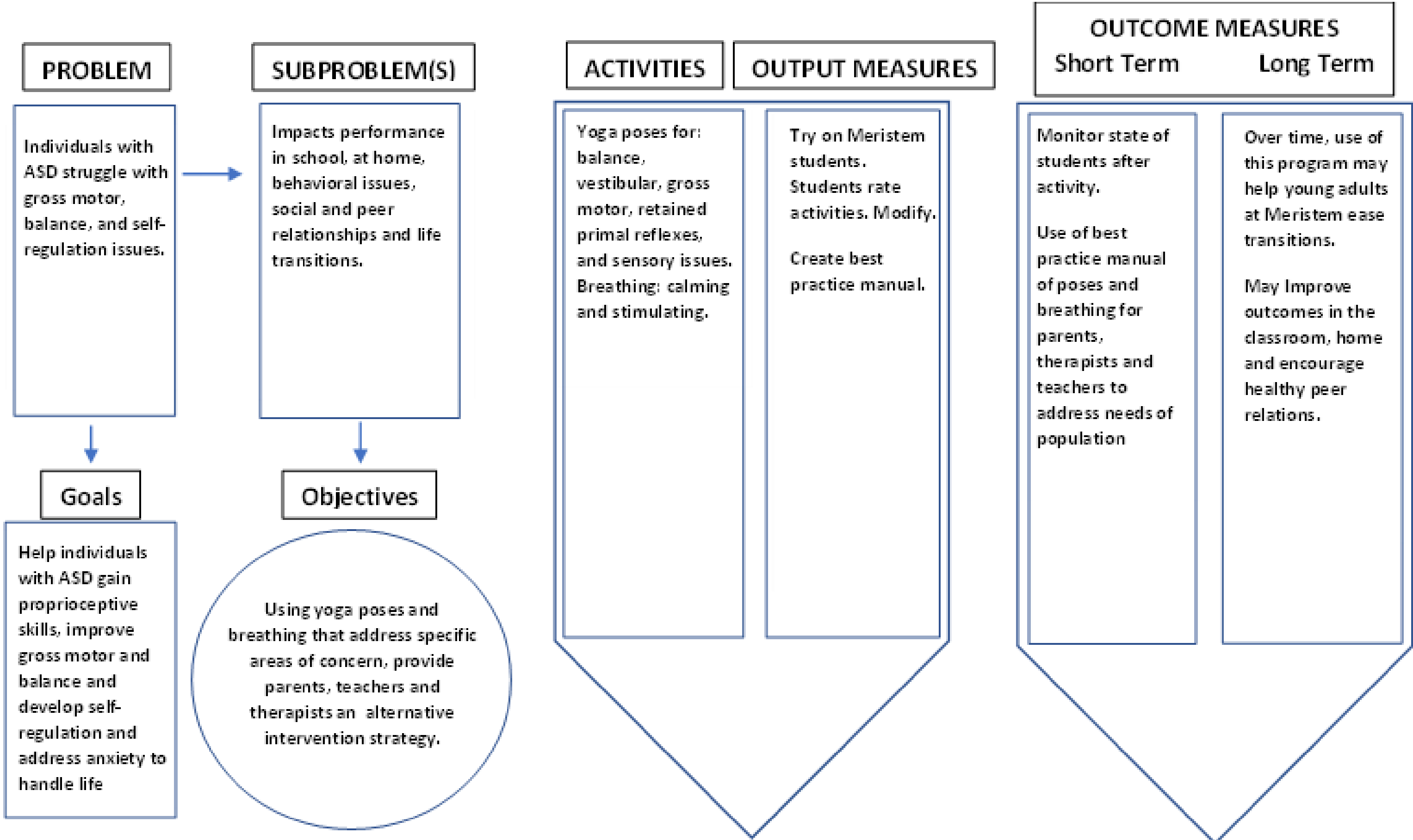


Guiding Theory: Biopsychosocial Model (BPS)

- Client-Centered
- Holistic
- Positive Outcomes
- Individualized



Logic Model Template



(Adapted from Capital Office of Juvenile Justice and Delinquency Prevention Generic Logic Model, 2008.)

Literature Review and Needs Assessment

- ASD affects 1 in 44 in US.
 - (Centers for Disease Control and Prevention, 2021) .
- Issues with gross motor skills and proprioception.
 - (Ahmed et al., 2021; Kaur & Bahat, 2019; Morgan, 2022, Roley et al., 2015)
- Balance and vestibular issues.
 - (Morgan, 2022; Mickel et al., 2011; Roley et al, 2015; Rosario et al., 2018; Stins Villaneuva, 2017)
- Issues with emotional regulation and anxiety.
 - (Hardy, 2022; Ramanathan et al., 2021; Wan, 2022; Wijnhoven et al., 2018)



Literature Review and Needs Assessment

- Retained primitive reflexes reported in 64%-100% of school-aged children with ASD (depending on the type of reflex) and problems exist if not integrated.
 - (Bilbilaj et al., 2017)
- Retained primitive reflexes linked to problems with learning, writing, reading, gross and fine motor skills, balance and spatial orientation, academic success, and socialization.
 - (Bilbilaj et al. 2017; Morgan, 2022; Sigafos et al., 2021; TACA, 2023)
- Alternative approaches for remediation for this population are needed.

Outcomes

- 6 Breathing Exercises:
 - 3 Calming; 3 Stimulating
- 7 Gross Motor Poses
- 7 Balance Poses
- 4 Vestibular Poses
- 9 Proprioceptive Poses
- Warm Up and Warm Down Poses
- Poses that Address Other Neurodiverse Issues:
 - Sensory Processing
 - Crossing Midline
 - Laterality
 - Directionality
- Poses that Address Retained Primitive Reflexes
- Modifications for young children

Discussion

Suggested Yoga Plan (15-60 minutes):

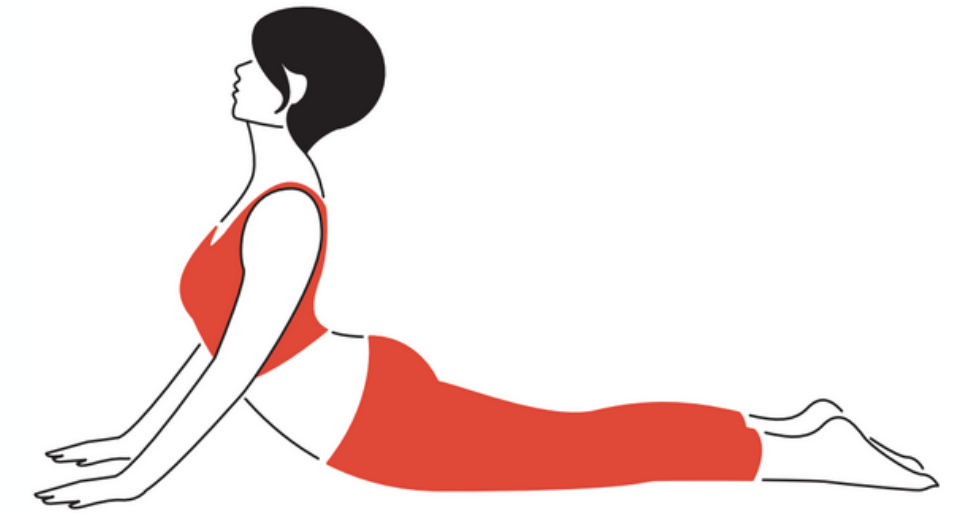
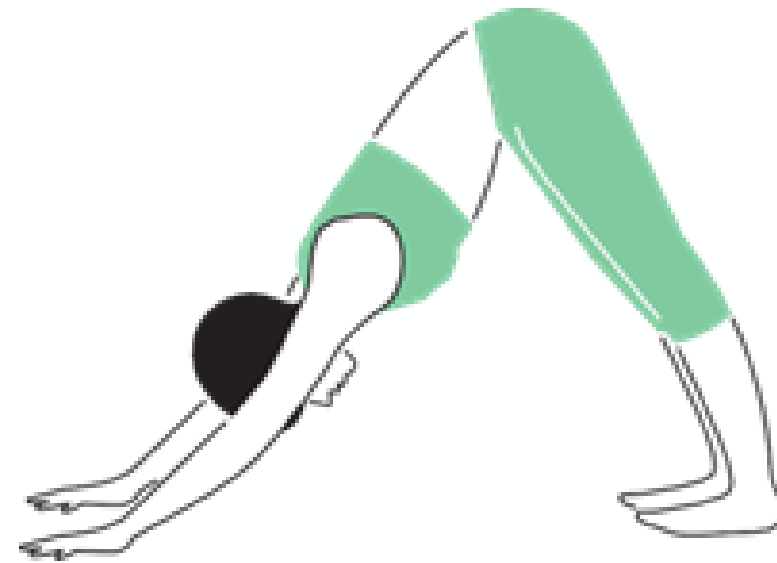
- Choose 1 breathing exercise (stimulating or calming).
- Choose poses that address needs of individual.
- If time is limited, choose poses that address multiple target areas of concern.
- Some issues are inter-related.
- Address other sensory issues or retained primitive reflexes.
- Adapt for younger population if needed.
- If session is 30 minutes or longer, include a warm up and warm down sequence.

End in Savasana (resting pose).



Discussion

BREATHING EXERCISES CALMING	YELLOW
BREATHING EXERCISES STIMULATING	ORANGE
WARM UP POSES	WHITE
WARM DOWN POSES	BLACK
POSES FOR GROSS MOTOR	GREEN
POSES FOR BALANCE	BLUE
POSES FOR VESTIBULAR	VIOLET
POSES FOR PROPRIOCEPTIVE	PINK
POSES FOR OTHER NEURODIVERSE ISSUES	GREY
POSES FOR PRIMITIVE REFLEXES	RED



Impact

- To facilitate more seamless transitions for young adults as they transition to postsecondary schools, independent living, and employment.
- Improved engagement and participation in the classroom and at home.
- Broaden the window of tolerance for neurodiverse children and young adults.



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