**Abstract**

Dynamic Feedback Signal Set (DyFSS)

Self-Adjusting Biofeedback with a

**Background**

Peripheral Autonomic Biofeedback Training (PABT) is a promising treatment for managing both anxiety and Autism Spectrum Disorder (ASD). Anxiety presents a major challenge for many children with Autism, impairing their ability to learn and engage effectively in interactive games and media. Feasibility was tested for youth with ASD in PABT protocols. Improvement in ASD symptoms was assessed. Initial results show that youth with ASD are readily engaged through technological interventions such as autonomic biofeedback and improve problem behaviors. Autonomic Dysregulation, exhibited as anxiety and sympathetic nervous system arousal, is a major factor in symptoms of Autism Spectrum Disorder (ASD). Our Dynamic Feedback Signal Set (DyFSS) is a strength-based, self-adjusting biofeedback with a multiple-channel and positive reinforcement to address autonomic neurodiversity in ASD youth.

**Future Directions**

- Parents report fewer problem behaviors.
- Anxiety presents a major challenge for many children with Autism, impairing their ability to learn and engage effectively in interactive games and media.
- Feasibility was tested for youth with ASD in PABT protocols. Improvement in ASD symptoms was assessed. Initial results show that youth with ASD are readily engaged through technological interventions such as autonomic biofeedback and improve problem behaviors.
- Autonomic Dysregulation, exhibited as anxiety and sympathetic nervous system arousal, is a major factor in symptoms of Autism Spectrum Disorder (ASD). Our Dynamic Feedback Signal Set (DyFSS) is a strength-based, self-adjusting biofeedback with a multiple-channel and positive reinforcement to address autonomic neurodiversity in ASD youth.

**References**


The process is not yet fully understood.

1. The framework includes a feedback to the user.
2. Heart rate variability, low frequency range (HRV, RR)
3. Six breaths per minute contributes to maximizing heart rate variability (see below).
4. A slow breathing pace contributes to feelings of comfort.
5. Increasing skin temperature indicates a calmer state.
6. Decreasing skin conductance indicates a calmer state.

How it Works

Dynamic Feedback Signal Set (DyFSS) is a method of applying an autonomic nervous system measurement (PABT) to the user's relative performance.

**Preliminary Results**

- No differences were found in pairwise comparisons.
- All signals show a decrease on average.
- Increase to 97%.
- Eighty percent of the bar's total based.
- Algorithm also fills segments if user is holding at current minimum/maximum. If other signals are performing poorly, successful signals are emphasized (each can.

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