

# Purrble's Soothing Touch for Eating Disorders and Autism: A Pilot Study on Integrating a Social Robot into Sensory Wellbeing Workshops



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## Study Rationale & Objectives

- Sensory and Emotion Regulation Challenges in ED and Autism Comorbidity
- The Need for Adjunct Therapeutic Interventions Targeting Sensory and Emotion Regulation
- PEACE Pathway Innovations and the Need for Additional Therapeutic Tools and Multimodal Activities

### Study Objectives:

- (a) The level of engagement and acceptability of intervention device within treatment programs for EDs
- (b) The perceived impact of the intervention device on participants' sensory and emotional well-being

**More info on Sensory Wellbeing Workshops:**

*Tchanturia, et al. (2022) & Li, et al. (2023)*





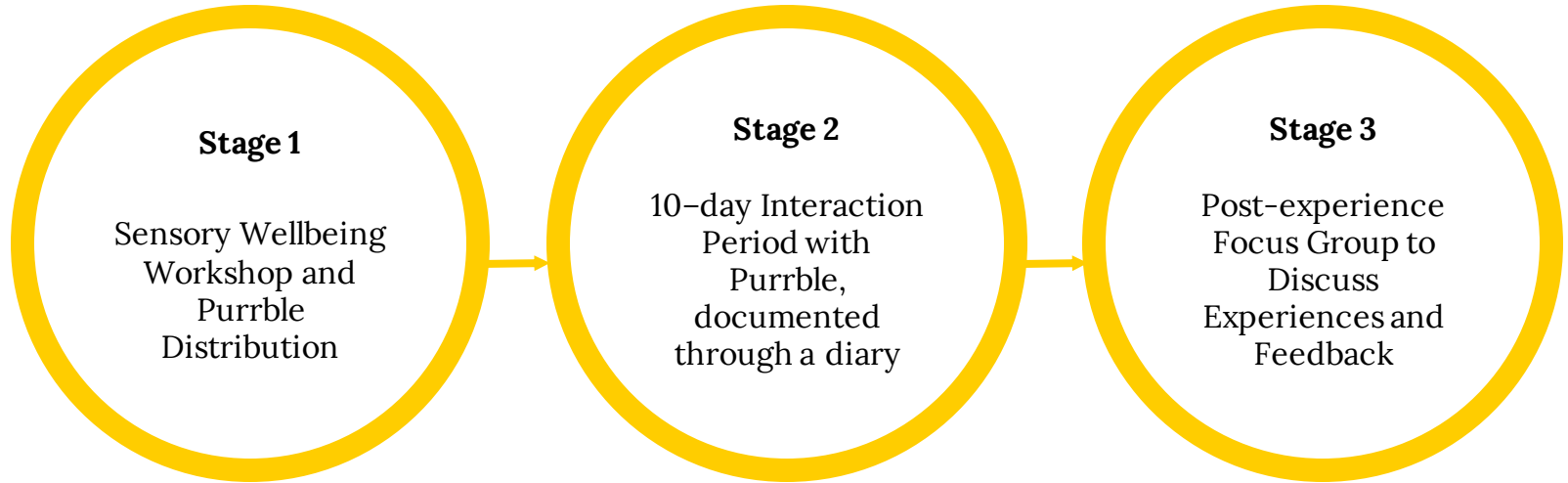
# Purrble!

## *Socially Assistive Robot*

- Compact, affordable sensory device shaped like a plush animal
- Designed as an anxious creature
- Designed for in-the-moment support
- Simulates an emotional state with a variable heartbeat, responsive to touch
- Calming process typically under a minute, varying by interaction
- Features include soft, cuddly design, neutral colours, gentle sensory feedback (vibrations, purring sounds), and portability



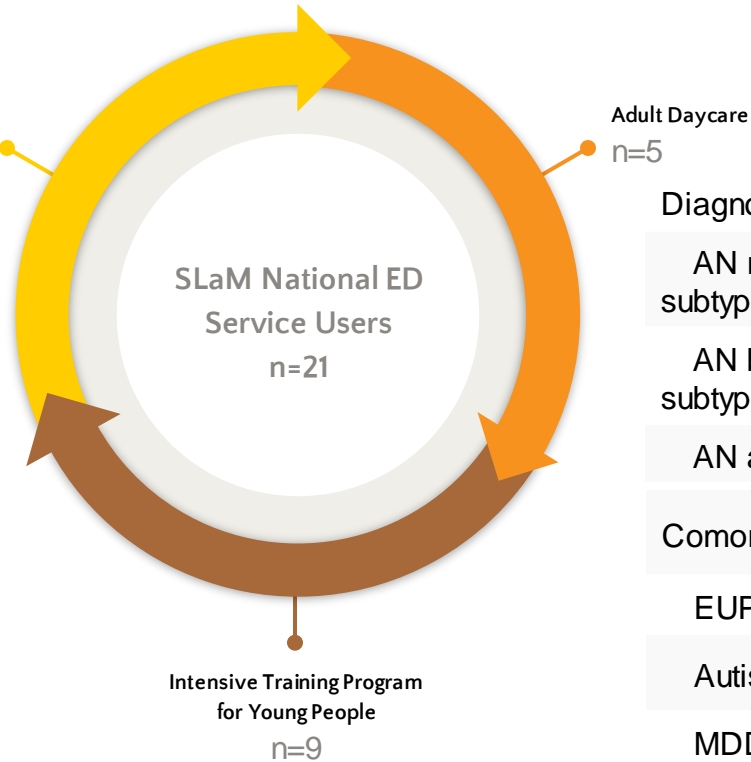
# Study Design





# Results

Age, mean (SD)	21.9 (7.4)
Gender, female <i>n</i> (%)	20 (95.2%)
Ethnicity, <i>n</i> (%)	
White British	16 (76.2%)
White Other	1 (4.8%)
Black British	1 (4.8%)
Asian	1 (4.8%)
Mixed	2 (9.5%)



Diagnosis, <i>n</i> (%)	
AN restrictive subtype	17 (80.9%)
AN binge-purge subtype	3 (14.3%)
AN atypical	1 (4.8%)
Comorbidity, <i>n</i> (%)	
EUPD	2 (9.5%)
Autism	8 (38.1%)
MDD	1 (4.8%)



# Key Findings

## Engagement and Relationship Dynamics



- ✓ Evolution from curiosity to meaningful interaction, with Purrble seen as an empathetic companion offering emotional support.

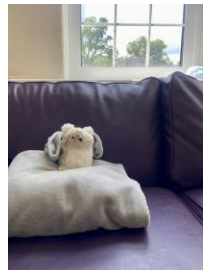
*"I love my Purrble. His name is Arlo. Now he comes everywhere I go. I hold him close before a meal, I love his softness I can feel. First his sound and feel gave me joy, Now just sitting next to me, He is more than just a toy."*

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## Acceptability and Ubiquity



- ✓ Purrble's integration into daily life, both at home and in clinical settings, enhancing comfort and support across environments.



## Anxiety, Distress and Discomfort Management



- ✓ Effective use of Purrble in managing emotional challenges, including during clinical procedures and therapy sessions.



### Mealtime Companion



- ✓ Purrble's role in addressing pre- and post-mealtime anxieties, acting as a supportive presence during meals.

## Sensory Tuning



- ✓ Participants' efforts to align Purrble's sensory outputs with their emotional states, serving both as a therapeutic tool and a personal challenge.

*If I may not expect having purrble nearby during times of stress or anxiety or that needed something to support my concentration. Purrble was perfect for me.*

*Purrble was fantastic at helping me with the slow breathing technique. Purrble had the best quality personally it didn't let me out when I needed to slow down, it would slow down & breathe with me, making noise when I was.*

*Personally I found the little ball I used to use when I was really down felt like my own real pet.*





# Practical Applications of Purrble

## Settings & Scenarios

- Home Environments: Living rooms and bedrooms
- Leisure Activities
- Academic and Work Environments: Enhancing focus, managing stress, and improving task performance.
- Clinical Settings: Offering comfort during procedures like Naso Gastric feeding.

## Therapy Aid

- Facilitating Expression: Assisting in the verbalization of traumatic or difficult experiences.
- Emotional Regulation: Helping users manage overwhelming emotions, anger, and sadness.
- Sensory Tuning: Allowing users to align their emotional state with Purrble's sensory feedback for grounding.

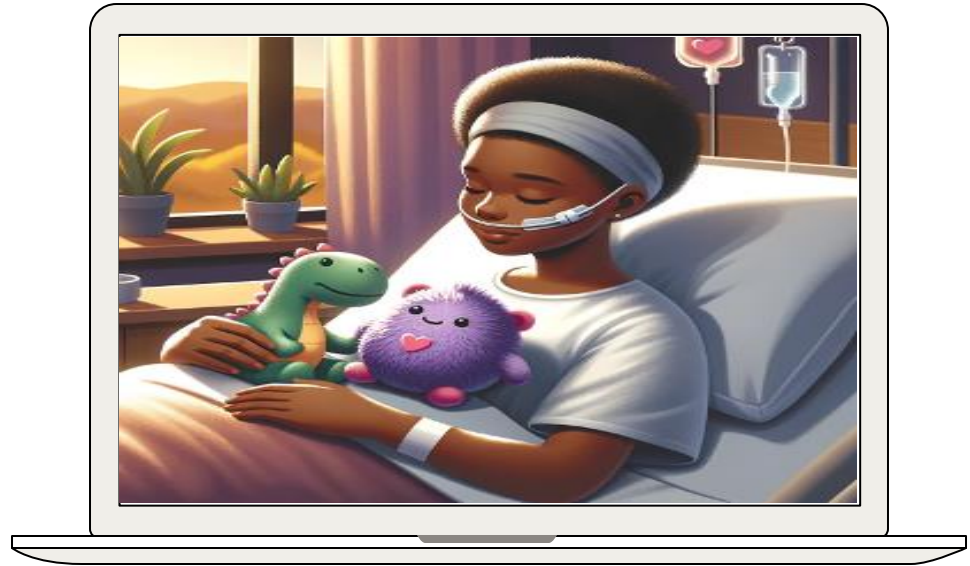
## Psychological States Addressed

- Anxiety and Stress
- Loneliness
- Pain Management
- Mealtime Challenges



## Considerations for Purrble's Use

- Empathetic Engagement and Caregiving Relationship
- Need for Multimodal Features and Feedback







# Thanks!



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# Publication

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