

Yoga and Positive Psychology for Dementia Risk Reduction in Elderly – A Pilot Trial (YOGA-CAIDE)

Sujin Kang, Liz Joy Hardie, Erika Shapiro, Naomi Friel, Charlie Levitt, Votsika Vasiliki, Benedict Hayhoe, Miia Kivipelto, Lefkos Middleton

The Ageing Epidemiology Research Unit, School of Public Health, Imperial College London | Corresponding author: sujin.kang@imperial.ac.uk

Background

Physical activity, mindfulness, yoga, and positive psychology interventions have been associated with benefits in cognitive, emotional, and physical wellbeing among older adults, including potential reductions in dementia risk. However, limited research has explored the feasibility and preliminary effects of combining chair-based yoga with positive psychology approaches in older adults at elevated dementia risk.

Aim

This pilot study aimed to assess the feasibility and explore the preliminary effects of a home-based chair-adapted yoga intervention, with or without positive psychology components, in cognitively healthy older adults at elevated dementia risk (Cardiovascular Risk Factors, Aging, and Incidence of Dementia (CAIDE) ≥ 6).

Methods

CAIDE risk scores incorporated age, sex, education, SBP, BMI, cholesterol, and physical activity (Kivipelto et al., Lancet Neurol. 2006).

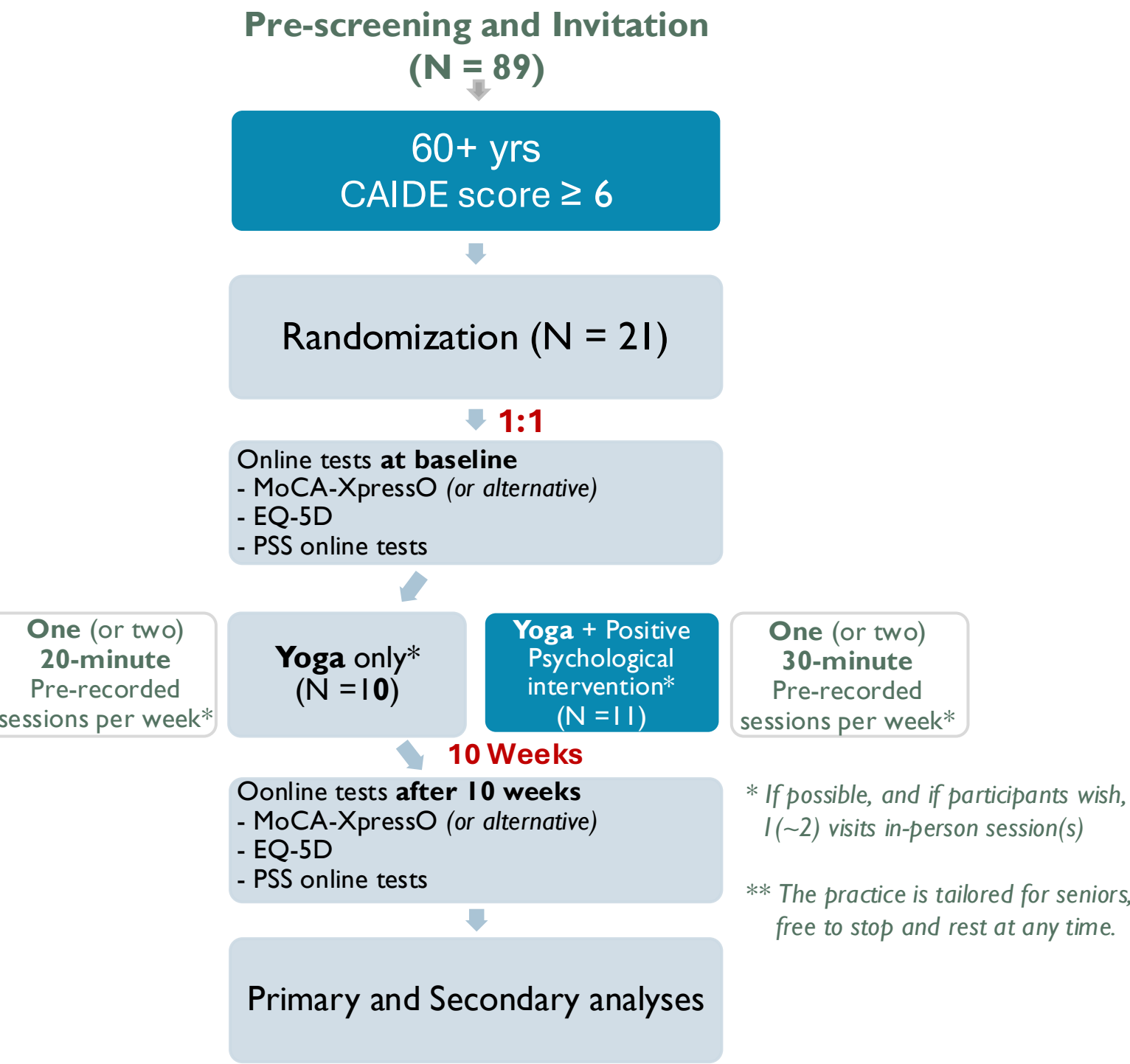


Fig 1. Study Design – Randomized, Two-Arm Pilot Study

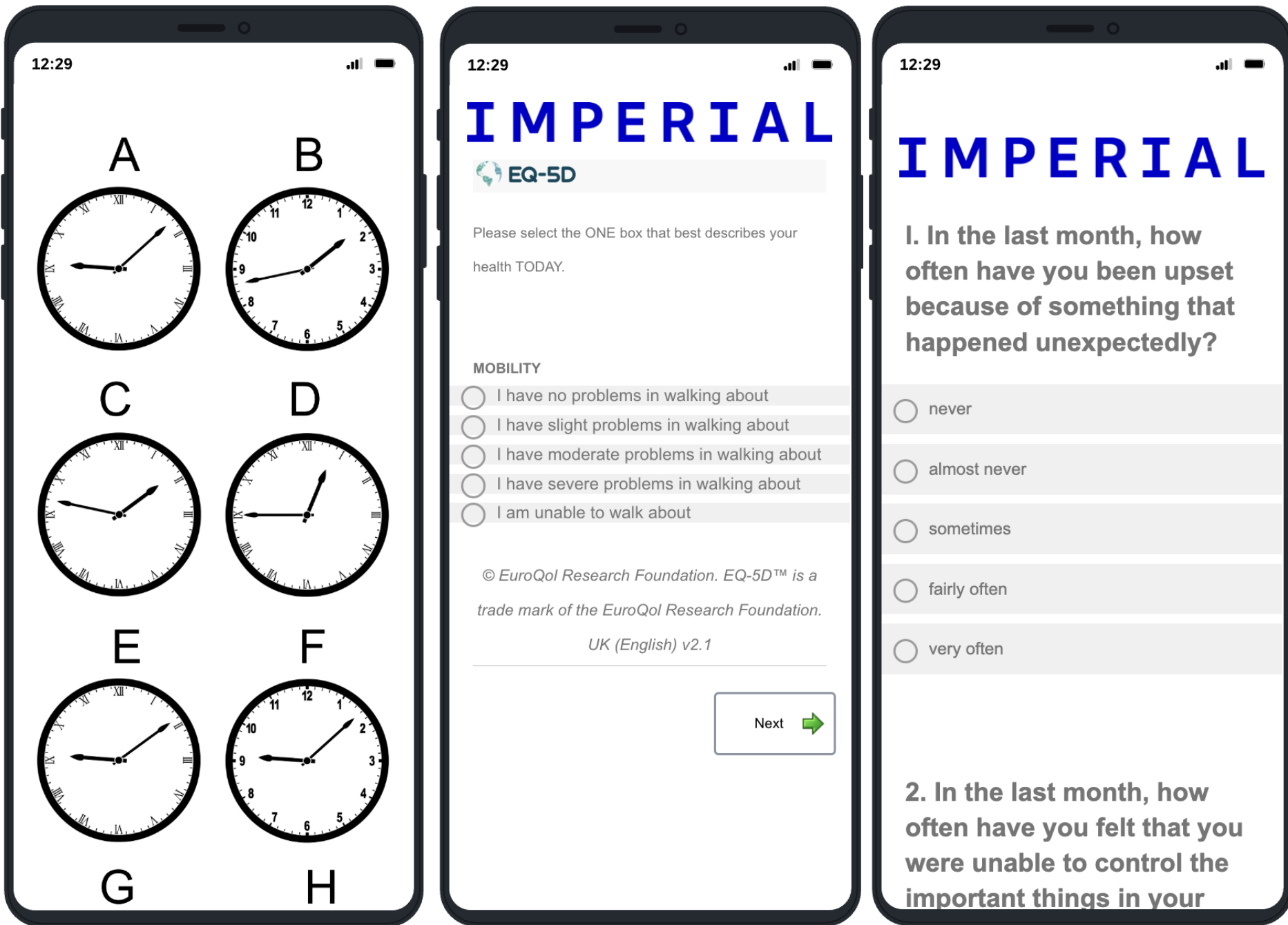
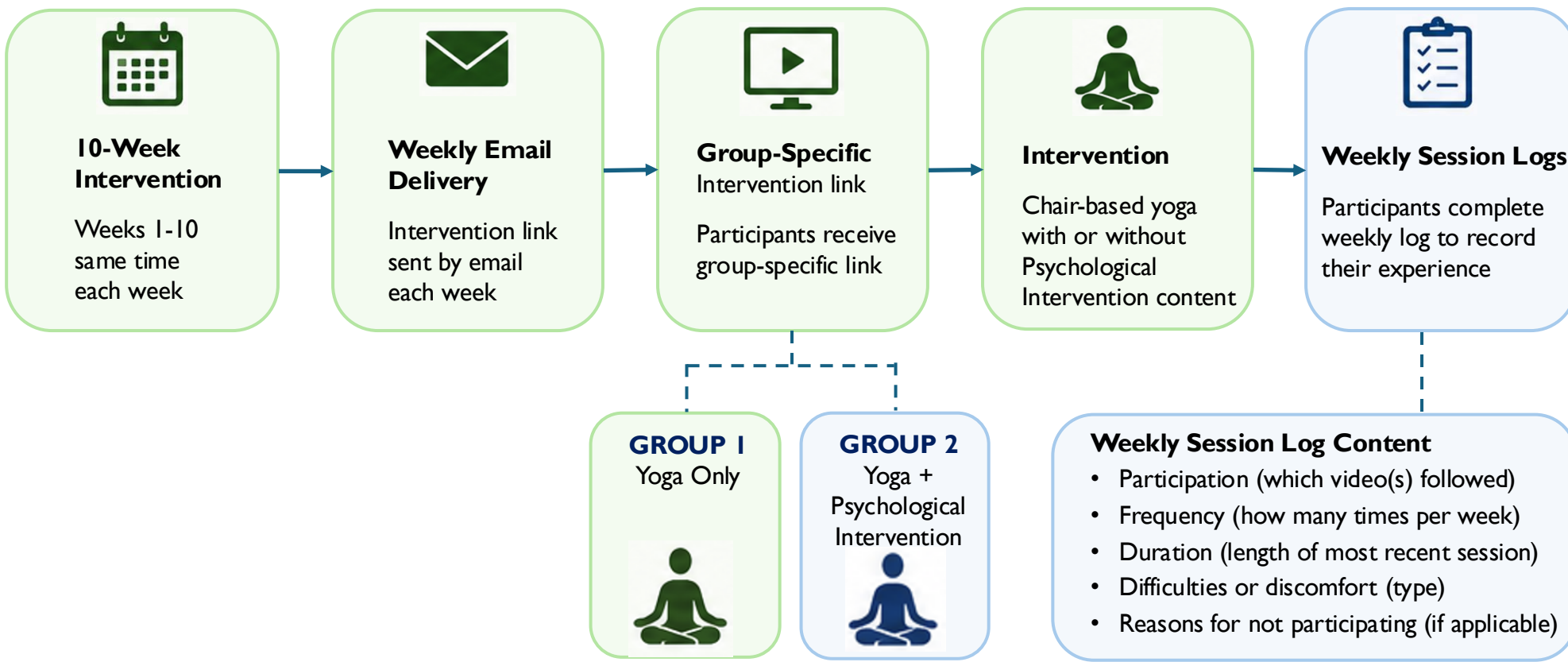


Fig 2. Clock Drawing, EQ-5D, and Perceived Stress Scale (PSS) (Baseline and Week 10)

A 10-week randomised pilot study was conducted to evaluate the feasibility and preliminary effects of a home-based, chair-adapted yoga and wellbeing programme for community-dwelling older adults at elevated dementia risk. Sessions were delivered primarily through senior-tailored prerecorded videos, with optional in-person sessions.

Outcomes included cognitive, stress-related, and self-reported health measures assessed at baseline and post-intervention.



Q1 Which video(s) did you follow this week? (Select all that apply)

Q2 Which video(s) did you follow this week? (Select all that apply)

Q3 How many times did you follow this video(s) this week? (Select one)

Q4 Approximately how long was your most recent practice in total? (Select one)

Q5 Did you experience any difficulties or discomfort during the exercise? (Select one)

If yes, what kind of difficulties or discomfort did you experience? (Select all that apply)

Other (please specify) (Text)

If you weren't able to do the session this week, feel free to let us know why (optional).

These weekly logs were used to assess adherence, feasibility, and tolerability of the intervention. * Psychological intervention content in this study included gratitude and mindfulness awareness. We thank Devbrat Chauhan, Karina Cosby, Ruby Hall, and Jennifer Crispin for their support with recruitment and study coordination.

Fig 4. Intervention Delivery and Weekly Logs

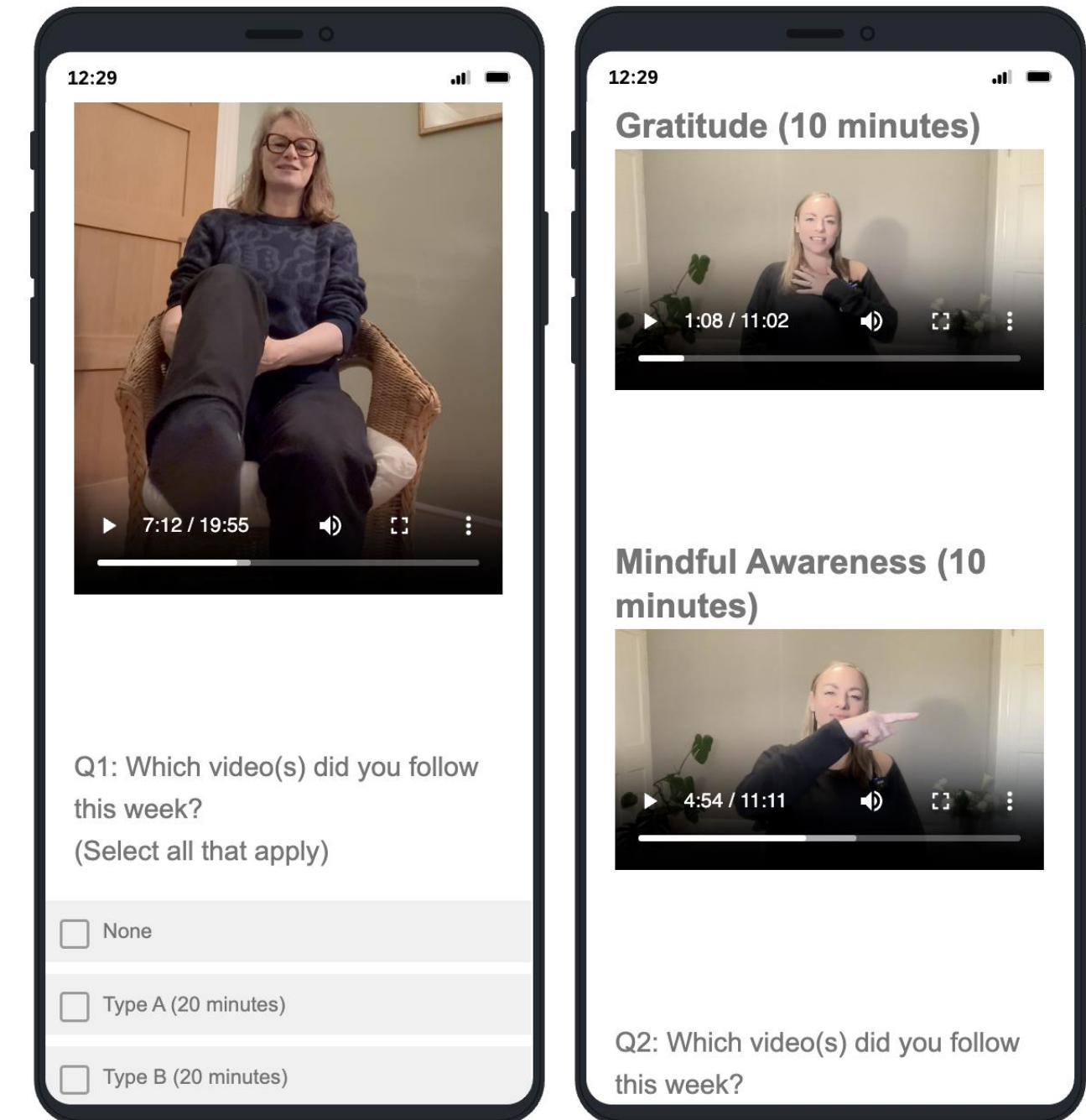


Fig 3. Pre-recorded Intervention Videos by a Qualified Yoga Therapist and Instructors



Scan for the Study

Results

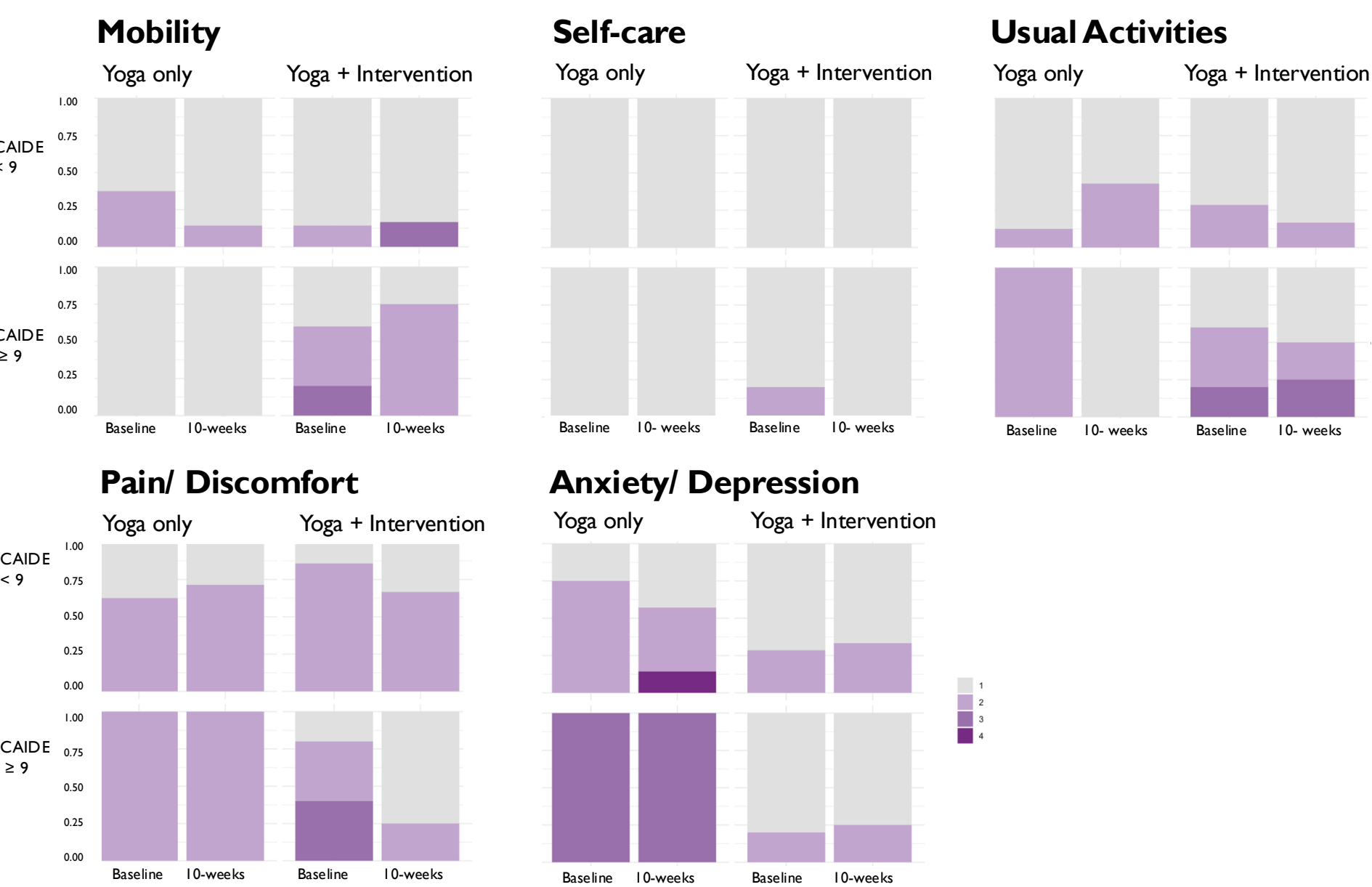


Fig 5. EQ-5D Response Distributions by Time, Group, and CAIDE risk group (N = 21)

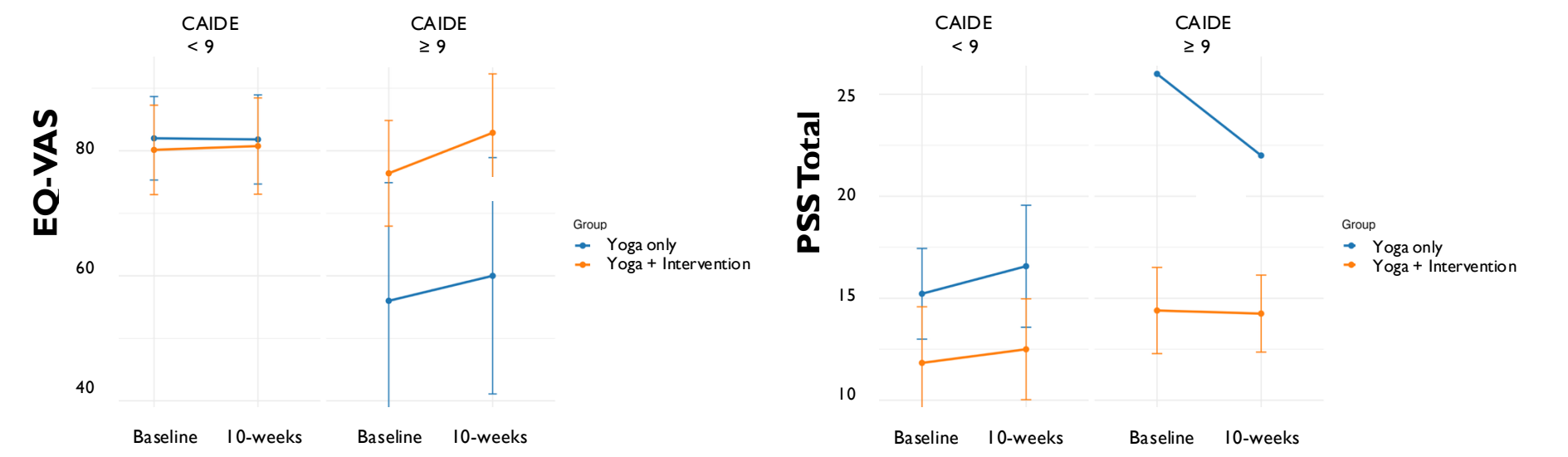


Fig 6. EQ-VAS and PSS by Time, Group, and CAIDE risk group (N = 21)

Feasibility	Weekly response logs were maintained across all 10 intervention weeks, indicating sustained engagement throughout the intervention period.
Adherence	Most responses reported at least one weekly session (99.4%), with 19.3% indicating participation three or more times weekly.
High CAIDE Participation	Sessions lasting 20–29 minutes were most commonly reported, while 27.8% of responses indicated practice durations of ≥ 30 minutes.
Tolerability	Most responses reported no discomfort during the intervention sessions (88.6%), supporting good tolerability.

Table 1. Process Evaluation Findings (N = 19)

Theme	Key Message	Sub-Themes	Quote
Psychological Benefits Despite Limited Physical Challenges	Participants reported relaxation, calmness, and improved breathing awareness, but the physical component was perceived as insufficiently challenging.	• Relaxation • Calming effect • Breathing awareness • Low physical intensity • Lack of challenge	“ It slowed me down and calmed me down ... the breathing was very helpful. It wasn't challenging at all... it was quite pleasant. ”
Repetition as a Barrier to Engagement	Repetition was a dominant factor affecting engagement. Most participants described repeated content as monotonous and disengaging over time.	• Repetition • Boredom • Predictability • Reduced engagement	“ The biggest problem ... was boredom, doing the same moves. It was the same thing over and over again. ”
Mismatch Between Programme Design and Participant Needs	Participants felt the programme did not align with their needs, as many were already active. It was considered more suitable for less active or more vulnerable groups.	• Target mismatch • Already active participants • Lack of relevance • Suitability for other populations	“ If you're already active ... you're trying to fit this in. This might be more suitable for people who aren't already active ”
Flexibility as a Key Requirement for Engagement	Flexibility in delivery was highly valued. Pre-recorded sessions allowed participants to engage at their convenience, while live sessions were less practical.	• Flexibility • Time constraints • Preference for pre-recorded • Scheduling difficulty	“ I like the flexibility of doing it when I have time. Live sessions would be difficult... you wouldn't know if you were available. ”
Need for Greater Variety and Progression	Participants emphasised the importance of variety, progression, and personalisation to maintain engagement and motivation.	• Need for variety • Progression • Increased challenge • Personalisation	“ You get bored... I've already done each of them several times. More variety, more challenge would help. ”

Conclusion

The intervention demonstrated encouraging feasibility, adherence, and tolerability over the 10-week period. Higher CAIDE risk was associated with lower self-reported health status, while qualitative findings highlighted psychological benefits alongside challenges related to repetition and programme fit. Future interventions may benefit from greater variety, progression, and tailoring to target populations.