

## The Sustainable Personalised Interventions for Cognitive, Care, and Engagement (SPICE) program: Update as of 23<sup>rd</sup> January 2024

**Context:** The SPICE program runs over 12 weeks and includes 2 x 2.5 hour sessions at the University of Canberra Hospital, up to 10 in-home visits from an Occupational Therapist, and 3 appointments with the University of Canberra Dietetics Clinic. People with dementia and their care partner must participate in the program together and have the ability to travel to the University of Canberra Hospital or Village Creek Centre in Kambah.

**Progress to date:** In total, 38 people with dementia and their 38 care partners have successfully completed the SPICE program. Including two groups currently underway, 64 people with dementia and their 64 care partners have enrolled in the SPICE program. By the end of 2024, SPICE is on schedule to have delivered 14 group programs to a total of 100 people with dementia and their 100 care partners. This will have been achieved by running one program at a time from September 2022 to August 2023, and two programs concurrently from September 2023 to December 2024.

### **Interim results:**

**Attendance:** Attendance to the in-person small group components for the first six groups was 92% for people with dementia and 91% for care partners.

**Outcome measures:** On average, the 38 people with dementia and their 38 care partners improved in all psychosocial outcome measures (indicated in green below in Table 1). Care partners reported statistically significant improvements (indicated in blue below) in quality of life of the person with dementia, reduced neuropsychiatric symptoms and carer distress related to these symptoms. A statistically significant reduction in challenges relating to caring for a person with dementia were also reported by care partners. The analysis of the results for self-reported quality of life of the person with dementia and reduced difficulties with daily functioning are also promising and may reach statistical significance with a larger sample size.

Table 1. Psychosocial outcome measures (n=38)

| Outcome measure                                      | Pre                     | Post                    | Mean change | P value |
|--|-------------------------|-------------------------|-------------|---------|
|  | Mean ± SD (Range)       | Mean ± SD (Range)       |             |         |
| Dementia Health-related Quality of Life (/112)       | 88.7 ± 12.1 (48.0-108)  | 93.3 ± 9.91 (72.0-110)  | +4.53       | 0.06    |
| Dementia Health-related Quality of Life–Proxy (/124) | 88.8 ± 15.4 (57.0-109)  | 96.4 ± 12.7 (73.0-115)  | +7.53       | 0.02    |
| Carer Health-related Quality of Life (/150)          | 102 ± 17.9 (63.0-139)   | 107 ± 19.2 (76.0-149)   | +4.39       | 0.30    |
| Carer Perceived Change Index (/65)                   | 37.3 ± 43.4 (23.0-47.0) | 43.4 ± 8.58 (32.0-65.0) | +6.16       | <0.001  |
| Addenbrooke’s Cognitive Examination (/100)           | 65.3 ± 17.7 (37.0-90.0) | 67.1 ± 18.0 (31.0-96.0) | +1.87       | 0.65    |
| Neuropsychiatric Inventory-Q (/36)*                  | 10.0 ± 5.55 (1.00-27.0) | 7.21 ± 4.60 (1.00-30.0) | -2.79       | <0.001  |
| Neuropsychiatric Inventory-Q Carer Distress (/60)*   | 11.2 ± 7.41 (0.00-28.0) | 8.37 ± 6.94 (0.00-26.0) | -2.82       | 0.04    |
| WHO Disability Assessment Schedule 2.0 (/60)**       | 16.0 ± 7.00 (1.00-28.0) | 13.8 ± 6.49 (1.00-30.0) | -2.21       | 0.07    |

Key: \* = Higher scores indicated greater neuropsychiatric symptoms and distress; \*\* = Higher scores indicate higher disability or loss of function. Blue shading indicates statistically significant p values.

In the physical function outcome measures, on average, several improvements have been observed. Notably, both people with dementia and their care partners significantly improved in the Alternating Step Test, suggesting improvements in their dynamic balance from the exercise program. Care partners also significantly improved in the Timed Up and Go test.

**12 week follow-up outcome measures after program completion:** To date, 26 people with dementia and their 26 care partners have completed the 12-week follow-up outcome measures. Notably, statistically significant improvements observed from baseline to 12 weeks after the program is finished (24 weeks in total) have been maintained for quality of life of the person with dementia (both self and care partner reported), as well as reduced neuropsychiatric symptoms and reduced carer distress related to these symptoms. Analysis comparing the waiting list control groups and the intervention group is ongoing. Preliminary results suggest commencing in the program immediately compared to usual activities is associated with mean improvements in all psychosocial outcome measures compared to usual activities.

**Program satisfaction:** Program satisfaction ratings are high overall. The vast majority of participants found the program to be enjoyable, beneficial, and useful. In particular, care partner ratings are very high overall. Figures 1-4 (below) present the overall results.

Figure 1. Program satisfaction ratings (Person with dementia) (n=38)

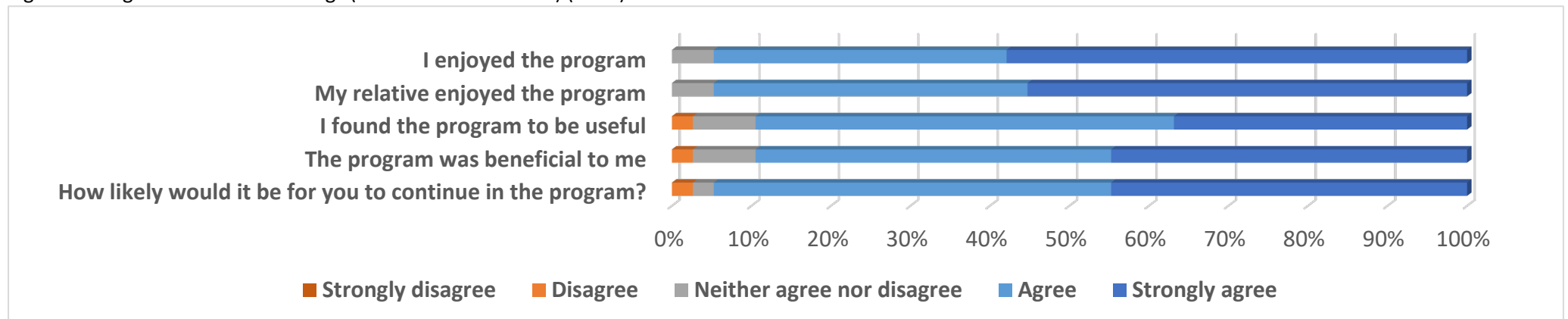


Figure 2. Program satisfaction ratings (Care partners) (n=38)

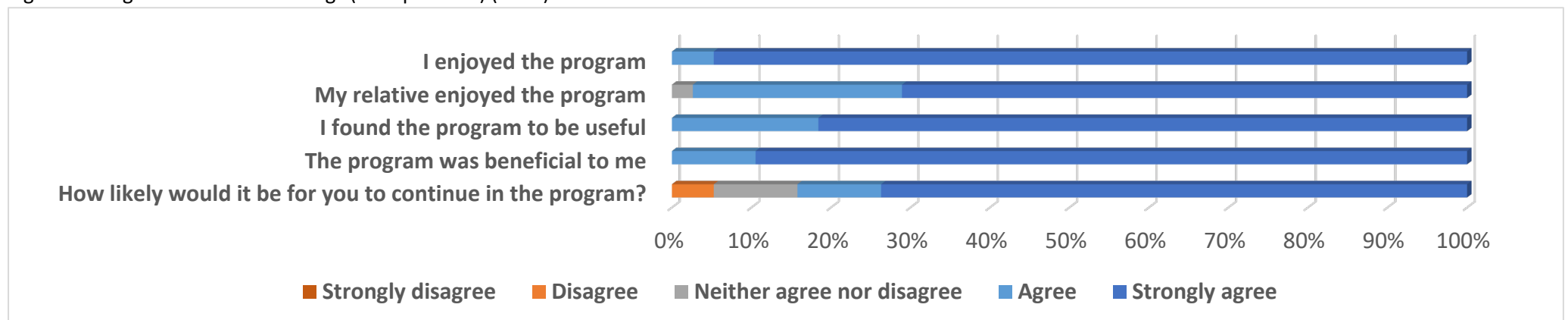


Figure 3. Program component satisfaction ratings (Person with dementia) (n=38)

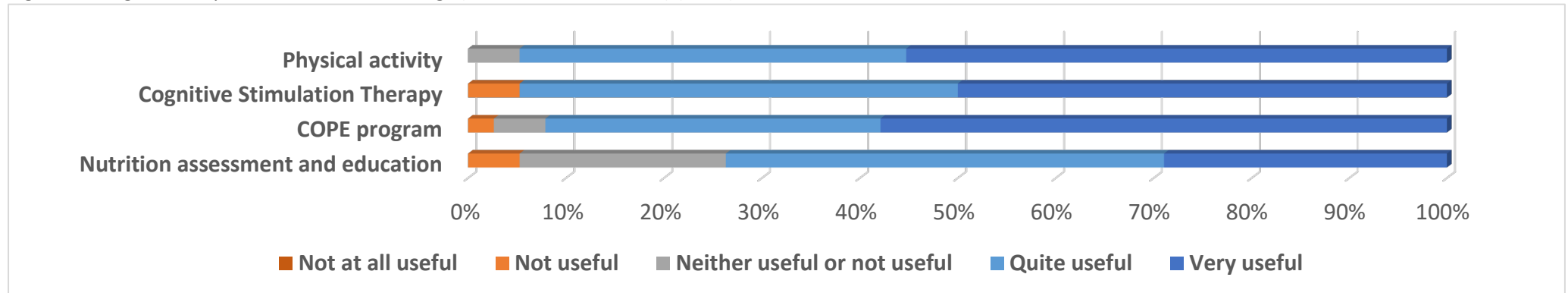
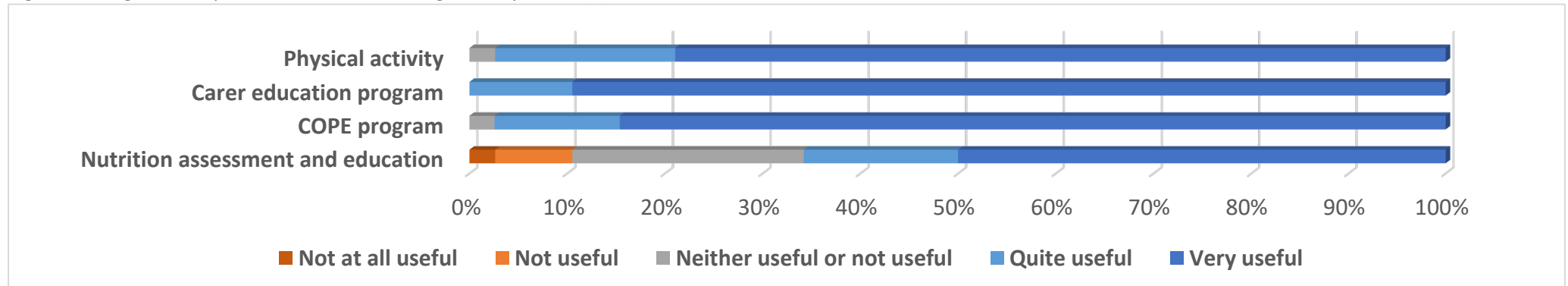


Figure 4. Program component satisfaction ratings (Care partners) (n=38)



## **Achievements**

- The Canberra Health Services SPICE team was awarded the Allied Health Team Excellence Award for 2023.
- The team published results of the first group to complete the SPICE program:  
<https://doi.org/10.1155/2023/5395080>
- The SPICE program has been presented at 5 national conferences, 2 international conferences, and 2 University of Canberra research symposiums.
- Since broad SPICE media coverage in July 2023, a steady stream of referrals is being received from geriatricians, meaning that active recruitment strategies (e.g., presentations to specialised dementia services) have been reduced. However, we do not have capacity to enrol all referrals at present.
- The SPICE program has been presented to 8 different Canberra Health Services teams, 6 different Dementia Australia staff and client groups, the University of Tasmania Wicking Centre, Lions Club Bungendore, and University of Tasmania Master of Dementia care students.
- A Medical Research Future Fund grant was submitted in November 2023 to implement and evaluate different versions of the SPICE program across different settings in Australia (funding outcome decision expected June 2024). If successful, the project will be led by the University of Canberra in collaboration with the SPICE team. Global dementia experts have agreed to be part of the project oversight committee (including from the University of Sydney, University of Queensland, University College London, and London School of Economics).

## **General Comments**

- Work is ongoing to establish a student-led clinic at the University of Canberra Health Hub to enable SPICE graduates to continue with activities once per week.
- The SPICE program is advised by a joint Canberra Health Services and the University of Canberra Steering Group comprising senior members of both organisations. The primary aim of the Steering Group is to develop strategies for the program's sustainability.
- The SPICE program receives advice from an External Advisory Committee chaired by Scientia Professor Henry Brodaty (UNSW), Professor & Geriatrician Sue Kurrle (University of Sydney & North Sydney LHD), Professor Kate Laver (Flinders University), one person with dementia, and one former care partner.
- The research and evaluation of the SPICE program received support from the Dementia Australia Research Foundation and was voted by Dementia Australia Advocates as the project most likely to provide benefits in 2022.
- The University of Canberra Deputy Vice Chancellor of Research and Engagement contributed an additional \$29,000 in 2023 towards evaluating the program and associated costs (e.g., dietetics clinic, gift cards to participants for the research component as mandated by ACT Health ethics).

## **SPICE Research Team**

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