**Supplementary material**

*Table S1.* Overview of outcome measures used in the included studies

| Domain       | Measure                                                                 | Studies                                                                 | Total |
|--------------|-------------------------------------------------------------------------|------------------------------------------------------------------------|-------|
| BPSD         | Geriatric Depression Scale (GDS)                                        | Massimi et al. (2008); Silva et al. (2017); Subramaniam and Woods (2016) | 3     |
|              | Apathy Evaluation Scale (AES)                                           | Massimi et al. (2008); Navarro et al. (2015; 2016)                     | 3     |
|              | Neuropsychiatric Inventory (NPI)                                        | Navarro et al. (2015; 2016)                                            | 2     |
|              | Cohen-Mansfield Agitation Inventory (CMAI)                              | Davison et al. (2016)                                                  | 1     |
|              | Cornell Scale for Depression in Dementia (CSDD)                        | Davison et al. (2016)                                                  | 1     |
|              | Rating Anxiety in Dementia (RAID)                                       | Davison et al. (2016)                                                  | 1     |
|              | Observational Measurement of Engagement                                | Davis and Shenk (2015)                                                 | 1     |
|              | Positive response schedule                                              | O’Connor et al. (2011)                                                 | 1     |
| Memory       | Autobiographical Memory Interview (AMI)                                 | Massimi et al. (2008); Subramaniam and Woods (2016)                    | 2     |
|              | Free recall memory index                                                | Karlsson et al. (2014)                                                 | 1     |
|              | Recognition memory index                                               | Karlsson et al. (2014)                                                 | 1     |
| Cognition    | Mini-mental state examination (MMSE)                                    | Karlsson et al. (2014); Massimi et al. (2008)                          | 2     |
|              | Informant Questionnaire of Cognitive Decline in the Elderly (IQCODE)    | Massimi et al. (2008)                                                 | 1     |
| Well-being   | Philadelphia Geriatric Centre Morale Scale (PGCMS)                      | Karlsson et al. (2014)                                                 | 1     |
|              | WHO-5 Well-being Index                                                  | Laird et al. (2018)                                                   | 1     |
| Relationships| Mutuality Scale                                                          | Laird et al. (2018)                                                   | 1     |
|              | Quality of the Carer Patient Relationship (QPCR)                        | Laird et al. (2018)                                                   | 1     |
| Quality of Life | WHO Quality of Life- Old (WHOQOL-OLD)                                  | Silva et al. (2017)                                                   | 1     |
|              | Quality of Life in Alzheimer’s Disease (QOL-AD)                         | Subramaniam and Woods (2016)                                           | 1     |
| Identity     | Self-image Profile Adult (SIP-AD)                                       | Massimi et al. (2008)                                                 | 1     |
|              | Twenty Statements Test (TST)                                           | Massimi et al. (2008)                                                 | 1     |
| Goal setting | Goal Attainment Scale (GAS)                                             | Massimi et al. (2008)                                                 | 1     |
| Functioning  | Adults and Older Adults Functional Assessment Inventory (IAFAI)         | Silva et al. (2017)                                                   | 1     |