Appendix 1: DPA-8 Scale Administration & Scoring Guidelines

- **Target population:** Adults considering their own dementia risk, with midlife adults (ages 40–65) as the primary application in the author's earlier work. The draft is not intended for clinical screening or for classifying individuals.
- **Scoring instructions:** Items are scored on a 5-point agreement scale (1 = strongly disagree to 5 = strongly agree). DPA-5 is reverse-scored (6 minus the response) so that higher scores always indicate greater agency.
- **Subscale calculations:** Interpretive capacity (IC): mean of DPA-1 to DPA-3. Personal significance (PS): mean of DPA-4 and the reverse-scored DPA-5. Perceived feasibility (PF): mean of DPA-6 to DPA-8.
- **Total score and cut-offs:** Not recommended. The components are expected to interact and may be domain-specific (P5), so an unweighted total would hide the structure the construct claims. No cut-off scores are proposed, and scores should not be used to classify or label individuals. Researchers should report contextual constraints alongside subscale scores (Section 8).
- **Status:** Provisional draft. The items have not been reviewed by experts or tested with respondents.

Appendix 2

Carey, P. (2026a). Beyond Information Delivery: Towards a Realist-informed Conceptual Framework for the Evaluation of Digital Dementia Education. Journal of Preventive Medicine & Healthcare, 8(2), 1048. https://doi.org/10.47739/preventivemedicine.1048

Carey, P. (2026b). Reconceptualising Dementia Education: From Information Transfer to Behavioural and Contextual Change. International Internal Medicine Journal (IIMJ): OA, 4(2), 01–09. https://doi.org/10.33140/IIMJ.04.02.03

Carey, P. (2026c). A Conceptual Framework for Understanding Dementia Prevention Literacy: Bridging the Translation Gap Between Epidemiological Evidence and Public Action. Epidemiology and Public Health, OA, 2(1), 01–12. https://doi.org/10.65157/EPHOC.2026.008

Carey, P. (2026d). From Dementia Prevention Literacy to Realist-informed Digital Dementia Education: An Integrated Theoretical Perspective. International Journal of Natural Sciences and Interdisciplinary Research: OA, 1(2), 01–07. https://doi.org/10.33140/IJNSIR.01.02.14

Carey, P. (2026e). Understanding How Digital Dementia Risk-Reduction Education Works: A Realist-informed Mixed-methods Study of Engagement, Interpretation and Behavioural Readiness in Midlife Adults. Biomedical Science and Clinical Research: OA, 5(3), 01–25. https://dx.doi.org/10.33140/BSCR.05.03.01

Carey, P. (2026g). Public Understanding of Dementia and Modifiable Risk Factors: A Conceptual Public Health Review. International Internal Medicine Journal, 4(2), 01–10. https://doi.org/10.33140/IIMJ.04.02.04

Carey, P. (2026h). From Information to Impact: Building a Research Programme in Dementia Risk-Reduction Education. Advances in Medicine and Rehabilitation Sciences, 1(1), August, pp. 1–8. https://www.globalmeetx.com/journals/jamr/articles/JAMR-26-8238-61.pdf

Carey, P. (2026i). From Conceptual Scholarship to Realist Programme Theory: Establishing the Foundation for Digital Dementia Risk-Reduction Education. Journal of Frontier Research across Disciplines Sciences, 1(1), August, pp. 10–19. https://www.globalmeetx.com/journals/jfrd/articles/JFRD-26-8380-55.pdf

Carey, P. (2026j). Extending Context–Mechanism–Outcome Theory for Digital Dementia Risk-Reduction Education: A Realist-Informed Conceptual Framework for Future Theory Development. International Journal of Natural Sciences and Interdisciplinary Research, 1(2), 01–30. https://doi.org/10.33140/IJNSIR.01.02.18

Subsequent Scholarly Development

Carey, P. (2026k). The Midlife Dementia Risk-Management Paradox: Developing the Concept of Preventive Capacity for Dementia Prevention. International Journal of Natural Sciences and Interdisciplinary Research, OA, 1(2), 01–12. https://doi.org/10.33140/IJNSIR.01.02.20

Carey, P. (2026l). Mind the Knowledge Gap: Mapping Critical Deficits in Global Dementia Education and Care Infrastructure. International Journal of Natural Sciences and Interdisciplinary Research, OA, 1(2), 01–11. https://doi.org/10.33140/IJNSIR.01.02.21

Carey, P. (2026m). From Knowing to Recognising: When Does Dementia Prevention Evidence Become Personally Relevant? Rethinking the Translation of Dementia Prevention Evidence in Midlife. Biomedical Science and Clinical Research, OA, 5(3), 01–12. https://doi.org/10.33140/BSCR.05.03.06

Carey, P. (2026n). Designing Digital Interventions for Midlife Dementia Risk Reduction: A Realist Framework Incorporating Futures Theory and Interpretative Engagement. International Internal Medicine Journal (IIMJ), OA, 4(2), 01–13. https://shorturl.at/BvgWq

Carey, P. (2026o). Fear, Fatalism and Avoidance: An Affective-Appraisal Extension of Realist Context–Mechanism–Outcome Reasoning for Digital Dementia Risk-Reduction Education. Biomedical Science and Clinical Research, OA, 5(4), 01–13. https://shorturl.at/rgBT3

Carey, P. (2026p). Beyond the Clinical Horizon: A Critical Futures Policy Delphi Framework for Dementia Prevention Literacy, Adult Vaccination and Digital Health Equity, 2030–2045 [Journal contribution]. Figshare. https://doi.org/10.6084/m9.figshare.34412445

Associated Scholarly and Educational Outputs

Carey, P. (2026f). Dementia awareness and support in midlife (ages 40–65): Evidence-informed educational infographic [Educational infographic]. Figshare. https://doi.org/10.6084/m9.figshare.32888588

Appendix 3: Targeted literature search record

Purpose and limits

This appendix reports a first targeted search, run on 17 October 2026, to test the claim in Section 3 that no existing construct combines the interpretation of uncertain evidence, personal and emotional significance, and the calibration of perceived against actual feasibility. It used a general web search tool with AI assistance and not bibliographic databases. It is not a systematic review and cannot show that no relevant work exists. Results were screened by title and abstract for relevance to the three features above, and Table A1 lists the findings that bear on the gap claim. The search should be replicated in PubMed, PsycINFO, Scopus and Web of Science, using the strings given below, before the novelty claim is relied upon.

Table A1: Targeted Search Record and Implications for the Gap Claim

Focus	Search as run	Main findings	Implication for the gap claim
Perceived behavioural	"dementia risk reduction" "perceived behavioural	Ajzen's own account aligns perceived behavioural control with	The nearest relative of perceived feasibility.

Focus	Search as run	Main findings	Implication for the gap claim
control and the theory of planned behaviour in dementia	control" theory of planned behaviour	self-efficacy and treats it as a proxy for actual control when accurate (Ajzen, 1991). A meta-analysis notes that most studies use it as a proxy (Hagger et al., 2022). A cross-sectional study of dementia screening willingness (n = 439, Guangzhou; PMID 39793765) found it the strongest predictor of intention.	Agency must show that accuracy against actual feasibility adds something (P1, P6). No dementia study of the perceived–actual gap was found.
"Preventive agency" as a construct	"preventive agency" dementia OR "brain health" agency risk reduction concept	No study defining preventive agency as a construct was found. "Agency" appears informally, for example in describing literacy programmes as helping people develop greater agency over cognitive health (PMCID PMC12434244).	The term appears unoccupied in these results. This is weak evidence given the limits of the search.
Calibration of self-efficacy	calibration of self-efficacy accuracy overestimation underestimation health behaviour perceived versus actual capability	Calibration of self-efficacy against performance is established in education research (Talsma et al., 2019). Bandura (1997) argued that modest overestimation can be adaptive. These studies compare belief with personal performance and not with external opportunity. No dementia or health-behaviour application was found.	Calibration as such is not new. The distinct step is calibration against external opportunity. P6 allows modest overestimation to be neutral or helpful.
Health behaviour models in dementia risk reduction	dementia risk reduction behaviour change COM-B OR "health belief model" OR "protection motivation" midlife adults intention action gap	Health Belief Model scales and studies are well developed, including an Australian scale with perceived barriers and self-efficacy subscales (Kim et al., 2014) and a Korean midlife study (Choi & Seo, 2022). An intention–action gap in dementia risk reduction is reported (PMCID PMC12983342). Barriers and self-efficacy are measured as perceptions.	These models contain close relatives of perceived feasibility, and the intention–action gap in this domain is documented. Accuracy against actual feasibility was not evident.
Structural and equity critiques	capability approach dementia prevention OR "brain health" conversion factors structural barriers risk reduction equity	Critiques of individual-focused dementia prevention and calls for population-level and equity-focused approaches are established (Walsh et al., 2022, 2024; Milne et al., 2021; Daly et al., 2026). No dementia study	The responsibilisation concern is not new. Building conversion factors into a behavioural account of dementia prevention appears less developed in these results.

Focus	Search as run	Main findings	Implication for the gap claim
		using the capability approach or conversion factors was found.	
Public understanding of risk reduction	Sweeney et al. 2021 public perceptions dementia risk reduction systematic review	The reference as cited in an earlier draft could not be found and was removed. Related work was identified: a qualitative synthesis of general-population perspectives with an integrated model for intervention (Curran et al., 2021), and a review of population surveys (Cations et al., 2018).	These describe public beliefs and barriers. They do not address calibration of feasibility.

Searches still to be run

(a) COM-B and the Behaviour Change Wheel applied to dementia risk reduction; (b) adaptive preferences and health behaviour; (c) brain health literacy and sense of agency; (d) health capability and conversion factors in ageing; (e) forward and backward citation searching from Ajzen (1991), Kim et al. (2014) and Curran et al. (2021). Suggested database strings: (dementia OR "cognitive decline") AND ("risk reduction" OR prevent*) AND (agency OR "perceived control" OR "perceived behavio?ral control" OR "self-efficacy") AND (calibrat* OR accura* OR "perceived feasib*" OR "actual control" OR "perceived barriers"); and ("self-efficacy" OR "perceived control") AND (calibrat* OR accura* OR overestimat* OR underestimat*) AND ("health behavio?r" OR prevention).

Result

The search did not identify a construct that combines all three features, but it showed that each feature has precedent. The gap claim in Section 3 is therefore limited to the combination and to calibration against external opportunity, and it remains provisional until the database searches are done.

Appendix 4: Pre-specified pilot protocol (not yet conducted)

Status

This protocol is proposed and not completed. No data have been collected. Human research ethics approval would be required before recruitment, and the protocol should be registered (for example on the Open Science Framework) before data collection.

Aims

(1) To test whether items written for the three components of preventive agency form a reliable and distinguishable structure. (2) To test discriminant validity from domain-specific self-efficacy, perceived behavioural control and intention (P1). (3) To test whether agency predicts later action beyond those constructs (P1). (4) To explore whether the perceived–actual feasibility gap predicts action (P6, exploratory).

Design and sample

Two-wave online survey, with the second wave four to six weeks after the first. Participants would be adults aged 40–65 living in Australia without a dementia diagnosis, recruited through an online panel or community

networks, with quota targets for education and remoteness so that the sample is not limited to highly educated volunteers. For a hierarchical test of incremental variance ($\Delta R^2 = .03$, base $R^2 = .25$, $\alpha = .05$, power = .80, three agency components), about 270 complete cases are needed at the second wave. Allowing for about 25% attrition, the target is 360 at the first wave. The calculation assumes the stated effect sizes and should be revisited once reliability is known. A pilot of this size can examine item behaviour and discriminant validity but cannot support a full factor analysis, which is the purpose of the larger validation sample in Section 7.

Measures

Preventive agency: the draft DPA-8 items, revised after expert review and cognitive interviews, with additional items for informed choice and exercise with others. Comparators: a risk-factor knowledge measure (literacy); domain-specific self-efficacy and perceived behavioural control items constructed following Ajzen's guidance; intention; and the Motivation to Change Lifestyle and Health Behaviours for Dementia Risk Reduction scale (Kim et al., 2014) as a benchmark health-belief measure. Actual feasibility: objective indicators (distance to the nearest relevant service, using a remoteness index such as ARIA+, and an area-level disadvantage index such as SEIFA) together with self-reported cost, time and caring constraints. Outcomes at the second wave: self-reported action in three domains chosen for their different dependence on services (a hearing check, a blood pressure check and weekly physical activity).

Analysis plan

(1) Confirmatory factor analysis comparing a three-factor agency model with a one-factor model and with models that merge agency items with self-efficacy or perceived behavioural control items, using changes in CFI and RMSEA. (2) Discriminant validity from the heterotrait–monotrait ratio and from correlations corrected for unreliability. (3) Hierarchical regression (linear or logistic as appropriate) for action: demographics and literacy first, then self-efficacy, perceived behavioural control and intention, then the agency components. (4) For P6, polynomial regression with response surface analysis using perceived and actual feasibility as separate predictors (Edwards & Parry, 1993), with curvature allowed because modest overestimation may be adaptive. Missing data would be handled by multiple imputation. Results would be reported for each domain separately as well as pooled (P5).

Decision rules (proposed thresholds)

The pilot would support P1 if the agency components add at least $\Delta R^2 = .02$ with a 95% confidence interval excluding zero and the heterotrait–monotrait ratio against self-efficacy and perceived behavioural control is below .85. It would count against the construct if the increment is below .01 or the ratio is .90 or higher. Intermediate results would be reported as inconclusive. P6 is exploratory in a pilot of this size.

Limitations of the design

Self-reported action, a short follow-up, a volunteer sample and a new, unvalidated measure limit what a pilot can show. A positive result would justify a larger validation study. A negative result would be informative about whether the construct should be refined or abandoned.