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Barriers and Facilitators to MIND Diet and Forest Bathing Adherence in Older Adults: Insights from a COM-B Informed Process Evaluation

Preliminary analysis of focus groups with the MIND + Forest Bathing arm

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The clinical reality behind the trial

Clinical efficacy and behavioural adherence are distinct outcomes

THE CLINICAL REALITY

- Cardiovascular disease is a major preventable burden among older adults in Hong Kong
- Elevated LDL-C (> 3.4 mmol/L) is the primary modifiable risk factor
- A recognised clinical barrier: reluctance to initiate statin therapy

(Population Health Survey 2020-22)

THE BEHAVIOURAL GAP

Why do people struggle to sustain lifestyle change?

THE LIFESTYLE PRESCRIPTION

- Community-based preventive management
- Dietary and environmental lifestyle modification
- Non-pharmacological, low-cost, delivered where people live

Objectives:

To use the COM-B model as a framework to identify the barriers and facilitators to intervention adherence among participants who completed the 12-week RCT.

The intervention model

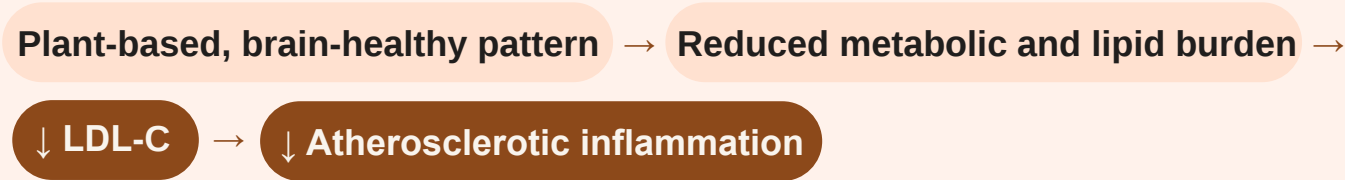
Pairing diet and nature for additive cardiovascular protection

Combining nutritional and environmental intervention, delivered adjunctively to pharmacological management

A The MIND diet

- Hybrid Mediterranean-DASH pattern
- 10 brain-healthy, plant-based food groups
- Targets metabolic syndrome
- Reduces hypercholesterolaemia

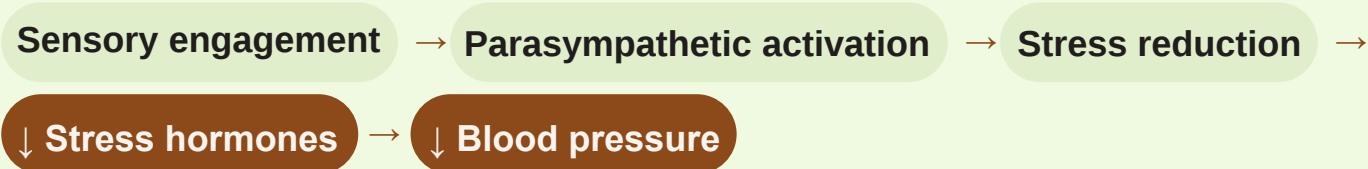
MIND DIET MECHANISM



B Forest Bathing

- Guided sessions, ANFT standard sequence
- Immersive sensory engagement
- Attention Restoration Theory
- Lowers anxiety and blood pressure

FOREST BATHING MECHANISM



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(Morris et al., 2014; Morris et al., 2015; Kheirouri & Alizadeh, 2022; Stott et al., 2024; Yau & Loke, 2020; Yau et al., 2022; Law et al., 2025; Law et al., 2026)

Additive suppression of the inflammatory cascade

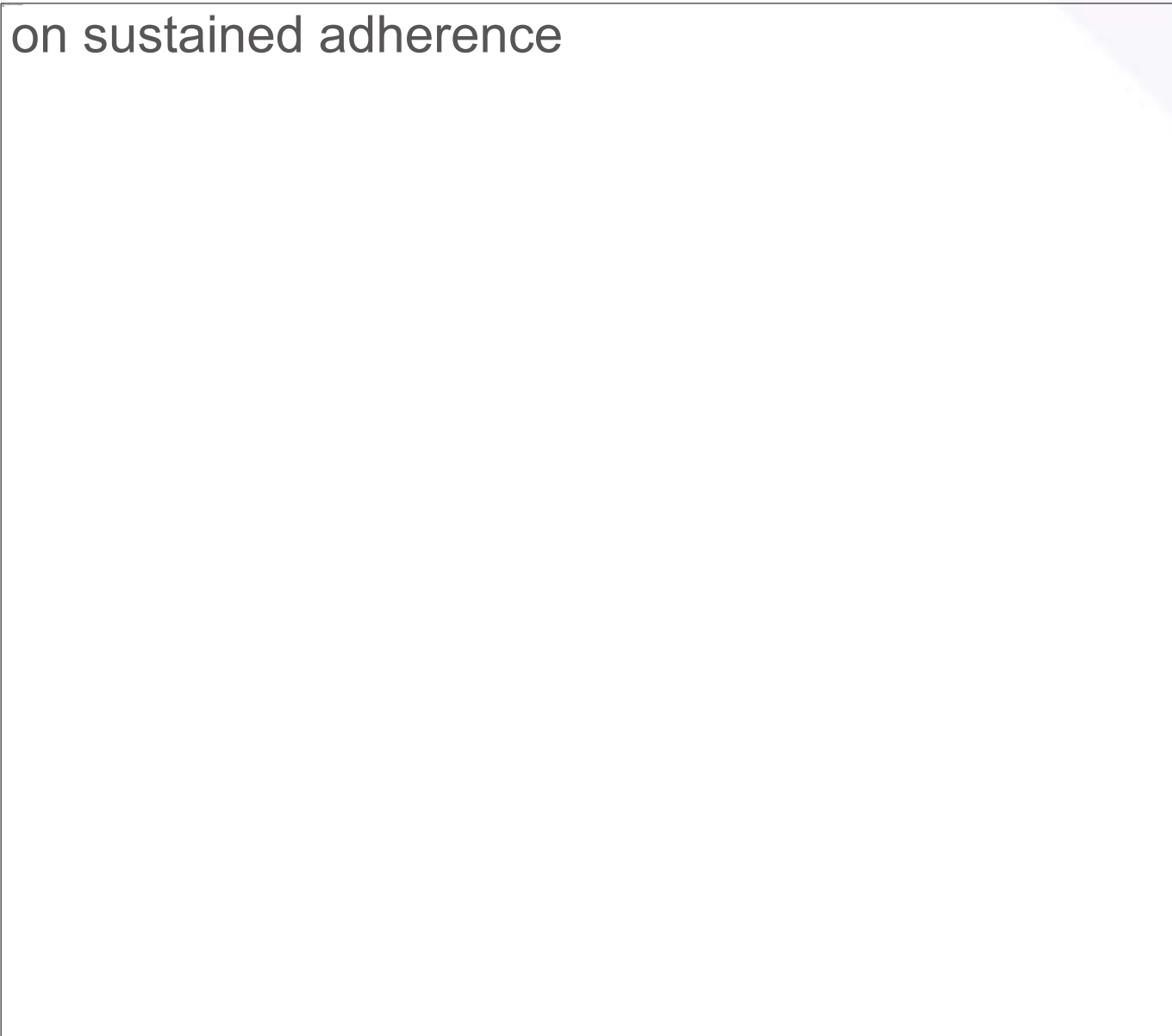
Each intervention interrupts the cycle at a different point, contributing to reduced LDL-C alongside combined cardiovascular and psychological benefit.

(Tsunetsugu et al., 2013; Miyazaki, Song & Ikei, 2015; Song et al., 2016; Hansen et al., 2017)

The diagnostic lens

Mapping adherence onto capability, opportunity and motivation

Systematically identifying the constraints on sustained adherence



This framework guides the evaluation of whether non-adherence is attributable to capability, opportunity, or motivational constraints.

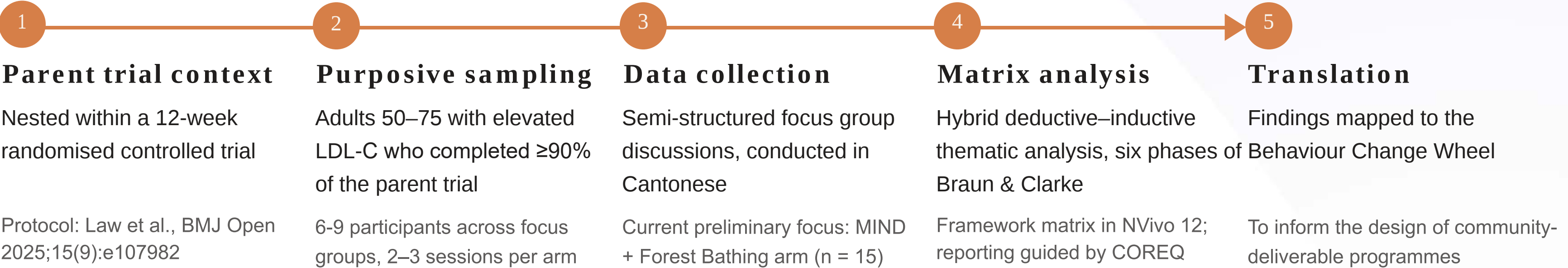
The COM-B model corresponds directly to the Behaviour Change Wheel, whereby each identified constraint indicates a corresponding intervention function.



The evaluation design

A nested qualitative evaluation within the parent trial

Designed to isolate the behavioural drivers of adherence



Current status of data collection

Two focus groups with the MIND + Forest Bathing arm have been completed (n = 15, mid-June 2026) and transcribed verbatim. Findings presented here derive from the initial coding of one transcript (n = 8). The MIND-only arm is scheduled for September 2026; a between-arm comparison is therefore not yet available.



Observation 1 — Who adherence belongs to

The household, not the individual, is the unit of adherence

"If I were the only one in the programme, I'd deliberately buy only certain foods and stop him eating others — that could cause friction. Joining together, we were really in tune."

— P15, FG2 (Excerpt 16); translated from Cantonese

Preliminary analysis · theme review against the full dataset (Braun & Clarke Phase 4) not yet undertaken

Opportunity — Social

The finding

- Where a partner shared the goal or joined the programme, participants described markedly less friction at home
- A simple household structure made dietary control easier
- Where household members had divergent needs, participants described ongoing negotiation and separate food preparation

Evidence base: 4 extracts from 4 participants, including one contrasting case

Observation 2 — How the behaviour became easy

Participants arranged their environment rather than monitored it

"Don't make it something extra. It should be internalised — into your flesh and bones. It starts from the moment you buy the food."

— P14, FG2 (Excerpt 27c); translated from Cantonese

Preliminary analysis · theme review against the full dataset (Braun & Clarke Phase 4) not yet undertaken

Opportunity + Automatic Motivation, via Capability

The finding

- Controlling food at the point of purchase, rather than at the point of eating
- Not scheduling the practice, so that it settled into routine
- Reducing guidance to workable rules rather than precise measurement

Self-monitoring, a core programme technique, was contested: used by one participant, attempted and abandoned by another, actively rejected by a third

Evidence base: 8 extracts from 5 participants

Observation 3 — What survived outside the programme

Forest Bathing continued beyond the guided session

"Sometimes I pass a park while pushing my grocery trolley and I'll go in — not the full forty-five minutes like with the instructor. I pace it myself, maybe five or six minutes of fresh air."

— P12, FG2 (Excerpt 25); translated from Cantonese

Preliminary analysis · theme review against the full dataset (Braun & Clarke Phase 4) not yet undertaken

Capability (skill transfer) + Automatic Motivation

The finding

- Two participants independently distilled the practice to breathing and visual attention to surroundings, dropping duration and sequence
- One argued the technique could be applied wherever they happened to be
- Practice was typically cue-triggered — passing a park — rather than planned

No participant in this focus group described Forest Bathing as burdensome

Evidence base: 6 extracts from 4 participants

Comparing anticipated and observed findings

Concordance and divergence between anticipated and observed findings

COM-B DOMAIN	ANTICIPATED	WHAT THE DATA SHOWED
Capability	Health literacy, structured guidance, tracking tools	Partly supported. Self-monitoring proved contested; participants preferred broad, workable rules over meticulous tracking
Opportunity	Green space access; family and caregiving as potential barriers; peer support	A clearer shift than anticipated. The household, rather than the individual, appeared to act as the unit of adherence
Motivation	Self-empowerment, self-efficacy, sustaining new habits	Supported, with new dimensions: an affective, time-ordered trajectory of habit formation, and a preference for moderation over abstinence

The findings of greatest programmatic relevance were not those initially anticipated.

Preliminary analysis · theme review against the full dataset (Braun & Clarke Phase 4) not yet undertaken



Implications for programme design

Implications of these findings for community programme design

Translating behavioural findings into programme design considerations

RECRUITMENT AND GOAL-SETTING

- Shift from individual to couple- or household-based recruitment
- Frame dietary goals around practical moderation rather than rigid abstinence

PROGRAMME TIMELINE AND SEQUENCING

- Front-load support in the early weeks, when behavioural friction appears to peak
- Provide early tangible feedback, and prepare participants for natural fluctuation

PROFESSIONAL ROLE AND POSITIONING

- From prescribers to facilitators, educators and resource allocators
- Clients as active agents in their own cardiovascular health

Next steps: MIND-only focus groups in September 2026; full comparative analysis and Behaviour Change Wheel mapping by end 2026. Participants themselves suggested extending the programme to younger populations.

Acknowledgement

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