

## **II. Title of project:** The Cognitive Kitchen: A Culinary Nutrition Intervention to Support Community-Dwelling Caregivers of Persons with Dementia

### **III. Rationale for importance of project**

Caregivers of persons with dementia are at considerable risk for reduced health outcomes and reduced quality of life when compared to those who provide care to people without dementia<sup>1</sup>. The caregiver role is essential and can be rewarding, but also presents with considerable negative health outcomes<sup>2,3</sup> and risk of compromised mental health<sup>4</sup>. Caregivers report experiencing anxiety related to nutrition care of persons with dementia.<sup>5</sup>

Caregivers increasingly assume responsibility for care of their loved one with dementia as the disease progresses.<sup>6</sup> In addition to duties of food procurement, production, and provision, caregivers are tasked with identifying and managing dementia symptoms that may impact intake, nutritional care, and nutritional health of their loved one with dementia.<sup>7</sup> Caregivers report increasing amounts of burden as the person with dementia exhibits disease-related changes impacting food and nutrition care including changes to food intake and habits, problematic eating behaviours, and increasing level of dependency for food and nutrition related tasks.<sup>5, 8, 9</sup>

Substantial evidence demonstrates the link between dietary patterns aligning with healthy eating principles and a protective mechanism against cognitive decline and dementia.<sup>10, 11</sup> Notable among these is the MIND (Mediterranean-DASH Intervention for Neurodegenerative Delay) diet, which purposely includes the core principles of the Mediterranean diet and the Dietary Approaches to Stop Sodium Hypertension (DASH) diet and key food items known to have a neuroprotective effect.<sup>12</sup> and is more impactful than the Mediterranean diet alone.<sup>13</sup> The healthy eating patterns of the MIND diet align well with general healthy eating recommendations and cardiovascular health guidelines. Older adults with an eating pattern closely aligned with the MIND diet have more favourable cognitive outcomes compared to those who eat dissimilarly and risk of cognitive decline or impairment is reduced by 35% in those who follow the MIND diet closely compared to those who do not.<sup>12</sup> Moreover, the MIND diet shows risk reduction even at a low level of adherence, making primary prevention efforts worthwhile even with low to moderate adoption of the dietary strategies.<sup>12</sup>

Poorer nutritional health a postulated mechanisms for caregivers' risk of cognitive decline.<sup>14</sup> Being a caregiver for someone with dementia increases caregivers' frailty.<sup>15</sup> Spousal caregivers of persons with dementia experience cognitive decline at a greater rate than age-matched non-caregiver peers.<sup>14, 16</sup> Incorporation of MIND dietary principles confers benefit for the caregiver and the person with dementia. Efforts to improve dietary intake for dementia must also consider interrelated factors of eating behaviour (e.g., habits) and food choice (e.g., preference, access, procurement)<sup>17</sup>. As well, strategies to support nutritional health be designed feasibly within the particular lived context of caregivers and persons with dementia.<sup>18</sup>

The Cognitive Kitchen is a novel culinary nutrition intervention designed to translate the scientific principles of dietary patterns that prevent or delay cognitive decline into practical, applied strategies communicated via community kitchen style classes. The intervention was co-designed by a team of clinicians and researchers experienced in dementia care and patient-family advisors who are older adults with lived experiences as caregivers of persons with dementia. The program includes a) recruitment and pre-screening of participants to understand current food literacy levels, health conditions, and lived context, b) tailoring the program delivery to the specific needs of the group, c) 6 program sessions delivered weekly including an educational component, a food skills/food preparation component, and a facilitated socialization component where participants can talk with one another, discuss how they might apply concepts and strategies in their routines, and provide general social support for one another.

The Cognitive Kitchen program is grounded in the Food Agency framework developed by Trubek et al., and Farmer & Cotter's adaptation of the Positive emotion, Engagement, Relationships, Meaning, and Accomplishment (PERMA) model.<sup>19, 20</sup> The Food Agency framework situates cooking as a process that is underscored by complex knowledge and skills including planning, organization, and decision-making within sociocultural and environmental contexts. As such, nutrition interventions must attend to the participant context and recognize the importance of empowering participants to develop skills and ability to effectively navigate those environments. The PERMA model emphasizes a program in which participants are supported to find meaning, and achievement in performing meal preparation (as opposed to finding it a necessary but uncomfortable chore) while promoting social engagement and role fulfillment to support overall quality of life. These are of particular importance in working with caregivers of persons with dementia – helping to overcome stigma and role-strain are essential.

#### **IV. Research project hypothesis/objectives**

We propose a study to examine the Cognitive Kitchen culinary intervention. The objectives are to:

1. Determine the feasibility and acceptability of the program to a diverse sample (age, gender, ethnicity, SES) of community-dwelling older adult caregivers of persons with dementia
2. Examine changes in nutrition knowledge and food literacy skills among participants
3. Examine participant experiences of participating in a culinary nutrition intervention, and explore outcomes (e.g., self-perceived increased food literacy, increased confidence, increased coping), with a comparison of virtual and in-person experiences

#### **V. Description of approach/methodology for project**

Funding to deliver 6 in-person and 9 virtual Cognitive Kitchen programs between March 2023-June 2024 has been secured from a federally funded New Horizons on Seniors Health program called 'Dementia Supports in Rural Saskatchewan'. This funding includes equipment and rental fees for facilities, printing of participant program manuals, providing food for all participants, and salary for a Registered Dietitian to deliver the program. The funding does not, however, include research to examine the program or participants' experiences; CFDR funding will support research activities. Program delivery will be focused in a rural region of Saskatchewan to target those who have less access to supportive services and care. Both in-person and virtual iterations of the program will be delivered to increase accessibility and reach of the program.

Research on community or collective kitchen programs shows dual outcomes of enhanced nutrition (knowledge, abilities, intake) and enhanced social support (Farmer, et al., 2018; Iacovou, et al., 2012; Lee, et al., 2010).<sup>21</sup> Little research has been done using a virtual platform for delivery of culinary interventions. This project will be one the first to gather evidence about the efficacy of this approach (Adam, et al., 2015).<sup>22</sup>

**Objective 1:** We will measure recruitment, participant attendance, participant engagement, and experience of each session in each program via fieldnotes (e.g., any issues that arose, technical issues in virtual sessions).

**Objective 2:** We will examine pre- post- intervention measures and within intervention observation and post intervention interviews. To assess the nutrition intervention, we will adapt a Food Skills Questionnaire to determine acquisition of food skills as a result of participation. A modified version of the Questionnaire for Cooking Skills Programmes (Barton, et al., 2011)<sup>23</sup> will be used to examine nutrition behaviour changes as a result of the program. A change of > 10% is considered meaningful

**Objective 3:** We will conduct individual interviews with a sub-set of 30 participants approximately 1 month post-intervention. Participants will be randomly selected for invitation to participate in a virtual- or telephone-administered semi-structured interview, and efforts will be made to ensure a diverse representation of participants. Effort to include those who do not complete the full program

will be made to capture their experiences and better understand their needs and barriers to participation alongside the experiences of those who did complete the full program.

**VI. Significance/relevance of project findings to dietetic practice**

Little research exists on supporting community-dwelling caregivers of persons with dementia in nutritional care and health. There is a need for applied interventions to support caregivers for persons with dementia. Translation of evidence-based dietary patterns into applied strategies to support caregivers in supporting overall health and well-being while delaying cognitive decline is crucial. As well, there is little research on culinary nutrition interventions with older adults. Data collected in this research will help to inform dietetic practice in the field of dementia care in the community, particularly in rural communities. The ongoing COVID-19 pandemic has created a need for virtual programming and innovative strategies for knowledge translation. This project will enable direct comparison of in-person and virtual program delivery for dietetic practice.

**VII. Time required to complete the project**

The project will span two years. Work is underway to develop a fieldnote template and a semi-structured interview guide. Data collection for objectives 1 and 2 will occur 2023-2025, beginning as soon as ethical approval and informed consent of program participants is obtained. Participant interviews (objective 3) will take place in fall-winter 2023/24. Analysis will be completed by 2025.

| Activity   | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 |
|--|----|----|----|----|----|----|----|----|
| Ethical Approval; Develop Fieldnote Template and Interview Guide |    |    |    |    |    |    |    |    |
| Data Collection – Objective 1                                    |    |    |    |    |    |    |    |    |
| Data Collection – Objective 2                                    |    |    |    |    |    |    |    |    |
| Data Collection – Objective 3                                    |    |    |    |    |    |    |    |    |
| Analysis   |    |    |    |    |    |    |    |    |
| Conference Presentation and Manuscript                           |    |    |    |    |    |    |    |    |

**VIII. Budget projections**

*In-kind Support:* \$150,000 to deliver 15 Cognitive Kitchen programs from ‘Dementia Supports in Rural Saskatchewan’; use of the USask College of Pharmacy and Nutrition’s Foods Research Lab; secure virtual Zoom licence, NVivo software licence, and SPSS licence.

*Requested Funds:*

| Budget Category   | Year 1 (23/24)          | Year 2 (24/25)          | Total Request   |
|---|-------------------------|-------------------------|-----------------|
| Research Staff<br>-Graduate Student Research Assistant  | \$6500                  | \$6500                  | \$13,000        |
| Equipment<br>-Digital Recorder and telephone adapter  | \$150                   | 0                       | \$150           |
| Supplies and Services<br>-Transcription<br>-Office Supplies (paper, pens, printing)<br>-Interview participant honoraria (30 x \$25 gift card) | \$1200<br>\$60<br>\$375 | \$1200<br>\$60<br>\$375 | \$3270          |
| Fieldwork   | 0                       | 0                       | 0               |
| Conference Travel and Dissemination<br>-Dietitians of Canada conference   |                         | \$1000                  | \$1000          |
| <b>TOTAL BUDGET REQUEST</b>   |                         |                         | <b>\$17,420</b> |

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