Final Research Report

Prevention of Financial Abuse Among Elders Affected by Cognitive Decline: A Randomized Controlled Trial in Rural Michigan (Grant number 2019-MU-CX-0094)

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Summary of the Project

Major Goals and Objectives

The overarching goal of this study is to test the efficacy and effectiveness of an adapted financial exploitation prevention model for elders who experience cognitive decline in rural areas of Michigan. Informed by the routine activity theory, this study targeted risk factors among three specific groups: service professionals (i.e., those who work with older adults and their family caregivers in the field such as public health, health and social care fields, dementia family caregivers (i.e., those who provide care to a relative with dementia), and older adults with cognitive decline (i.e., those with a Montreal Cognitive Assessment (MoCA) score between 18 to 25 or with subjective cognitive complaints for those with a MoCA score between 26 to 29). Specifically, this study had three specific aims. Aim 1: Develop and refine prevention programs to prevent financial exploitation of rural elders affected by cognitive decline by targeting service professionals, family caregivers and older adults with cognitive decline, respectively; Aim 2: Conduct randomized controlled trials (RCT) on each target group in rural areas of Michigan; and Aim 3: Test the efficacy of the developed prevention program on outcomes for service professionals, family caregivers and older adults with cognitive decline, respectively.

Research Questions

We have formed three research questions and relevant hypotheses.

Research Question 1: Will a psychosocial educational training intervention enhance the confidence of service professionals in addressing financial exploitation among older adults affected by dementia? Hypothesis 1: Service professionals in the intervention group would have higher confidence in addressing financial exploitation, consisting of capacity of working with adult protective services (APS), recognizing financial exploitation, and using community resources, than the control group. Additionally, compared to the control group, service professionals in the intervention group would have higher knowledge of dementia, lower levels of stigma of dementia, and less tolerance attitude toward financial exploitation.

Research Question 2: Will a combined psychosocial educational training and case management intervention for family dementia caregivers reduce the risk of financial exploitation among older adults affected by dementia? Hypothesis 2: Family caregivers in the intervention group would have higher capacity in addressing financial exploitation than the control group. Additionally, compared to the control group, service professionals in the intervention group would have better knowledge of dementia, lower levels of dementia stigma, lower tolerance of financial exploitation, and lower caregiver burden.

Research Question 3: Will a combined psychosocial educational training and case management intervention help older adults with cognitive decline reduce their risk of financial exploitation? Hypothesis 3: Older adults in the intervention group would have higher capacity in addressing financial exploitation than the control group. Additionally, compared to the control

2

group, older adults in the intervention group would have better knowledge of dementia, lower levels of stigma of dementia, lower tolerance of financial exploitation, and lower concerns about cognitive decline.

Research Design and Methods

This project primarily utilized a multi-site randomized controlled trial (RCT) design, spanning three years, and encompassing planning, implementation, and evaluation stages. During the planning stage, we used focus groups to refine intervention protocols developed to address risk factors for financial exploitation. Additionally, we identified community partner agencies and trained selected staff members as financial exploitation prevention specialists at these agencies. During the implementation stage, we recruited participants from rural communities in the Upper Peninsula and Lower Peninsula areas of Michigan. After being randomly assigned to two groups, the intervention group and the control group received different treatment. During the evaluation stage, we assessed the efficacy of the intervention on outcomes for three target groups: service professionals, family caregivers, and older adults.

Outcome measures for service professionals included competency of working APS to address financial exploitation, and competency of recognizing financial exploitation and using community resources for addressing financial exploitation. Secondary outcomes included dementia knowledge, dementia stigma and tolerance attitude toward financial exploitation. Outcomes for service professionals were assessed at four time points: baseline, 3 months, 6 months, and 12 months.

Outcome measures for family caregivers included competency of working with APS, competency of recognizing financial exploitation and using community resources relevant for financial exploitation. Secondary outcomes for caregivers included dementia knowledge, dementia stigma, tolerance attitude toward financial exploitation, and caregiver stress.

Outcome measures for older adults with cognitive decline included competency of working with APS, and competency of recognizing financial exploitation and using community resources relevant for financial exploitation. Secondary outcomes included dementia knowledge, dementia stigma, tolerance attitude toward financial exploitation, and concerns about cognitive decline. Both family caregivers and older adult groups were assessed at four time points: baseline, 3-months (right post intervention), 6 months and 9 months.

Statistical analyses were conducted using Stata 18. Descriptive analyses, t-tests, and Chi-squared tests were used to describe sample characteristics and to affirm baseline balance between the intervention group and the control group. Mixed linear model analyses were performed to identify the effects of time and group, focusing on the interaction effect of time and group on expected outcomes for three targeted groups.

Expected applicability of the research

Findings from this study support the applicability of a theory-driven intervention to prevent financial exploitation. Based on the adapted routine activity theory and stress coping theory, this intervention integrates components targeting three groups relevant for financial exploitation prevention among older adults with cognitive decline. This study also adds to the current body of literature where evidence derived from RCT designs is limited. This study found that three target groups: service professionals, family caregivers, and older adults with cognitive decline enhanced their competency in addressing financial exploitation through working with APS, utilizing community resources, and recognizing signs of financial exploitation after receiving the intervention. However, findings on secondary outcomes, which are selected risk factors for financial exploitation, are mixed, indicating the need for future studies to replicate this study. Additionally, findings of this study allude to possible underlying mechanisms leading to reductions in financial exploitation risks that should be examined in future research.

This research project generated findings that also have policy and practice implications for preventing financial exploitation in the community. Given the rising concerns of financial exploitation among frail older adults, community service agencies are seeking preventive measures that can effectively prevent the loss. Based upon findings on service professional groups in this study, training needs to be tailored to meet the specific needs of these staff members. As a critical part of the support network for vulnerable older groups, service professionals first need to be trained as effective mandatory reporters for APS. Moreover, they should be trained to form a strong alliance with APS to assist victims of financial exploitation and prevent its occurrence in the long run. Our findings also tested the differential effectiveness of providing resource sheets, brief education, and extensive training.

For family caregivers and older adults with cognitive decline, this study generated preliminary evidence supporting the promising efficacy of an intervention program that combines education, training, and case management services. Given the enormous care tasks faced by family caregivers, interventions need to be brief and tailored to their needs, focusing on enhancing their awareness of this topic and their capacity to use resources to prevent financial exploitation within the family and combat financial fraud from outside sources. For older adults with cognitive decline, particularly those living alone without a caregiver, a prolonged intervention may be necessary to raise their awareness of this issue and enhance their competence in seeking help from APS and community resources. Policy changes should include enhanced statewide funding support for training mandatory reporters, strengthening existing community resources for families affected by dementia, and supporting innovative initiatives to reduce potential risks for financial exploitation, such as lack of awareness, caregiver burden, and social isolation.

Outcomes

Activities and accomplishments

Form of a Research Team

The P.I. recruited and established a research core, an advisory core, and a community partner core. The research core consists of three investigators from social work, social epidemiology, and criminology backgrounds. Since the professor with the Criminology background is from a different institution, Arizona State University (ASU), a workplan agreement has been developed and approved by ASU. The advisory core comprises of five experts from multi-disciplinary backgrounds, and all completed a contract agreement with MSU. Lastly, the P.I. recruited a community partner core which includes a project coordinator Katie Donovan, site supervisors and caseworkers from the collaborative sites in Michigan.

Collaboration with Community Agency Partners

In the beginning, we had a partnership with three community agency partners (Manistee Senior Center, Region 3B AAA, and UPCAP). After Region 3B AAA and UPCAP later decided to leave this project because of leadership changes and Covid-19 related challenges, we were able form a partnership with Ishpeming Senior Center, Manistique Senior Center, Alpena Senior Center, Otsego County Commission on Aging, Region VII Area Agencies on Aging, and Region 9AAA. We identified one site project coordinator at each agency and one or two staff members as designated financial specialists to conduct casework for intervention groups at this site for this project.

Development and Refinement of Intervention Modules for Three Groups

The research team created and refined a set of intervention modules for the three target groups: service professionals, dementia family caregivers, and elders with cognitive decline. Each intervention module includes a group training manual with an animated video designed for the specific group, and a case management protocol detailing the contents for six home visits. Each module is accompanied by a facilitator manual and a participant handbook.

Results and Findings

Service Professionals

Service professionals were recruited from three locations and surrounding areas in Michigan: Manistee, Battle Creek, and Escanaba. Out of 101 reached out to, 10 declined to participate. The remaining 91 service professionals were enrolled, roughly equally split into two groups. However, 26 dropped out before the 3-month follow-up survey. Thus, only 65 participants remained in the analysis, with 25 in the control group and 40 in the intervention group.

As shown in Table SP0, the average age of participants was 45 years (SD=12.3), and 85% were female. Most worked in social service agencies, with about 63.6% being social workers. Approximately 64.9% had experience addressing elder abuse and neglect, and 61.4% had experience addressing abuse and neglect involving persons with dementia. There were no significant differences between the two groups at baseline in sociodemographic characteristics,

including age, gender, education, workplace type, and experience handling elder abuse, achieving baseline balance.

Table SP0. Sample characteristics of service professionals at baseline

Variables	Overall		Control		Intervention	
	N=65	Mean ±SD/%	N=25	Mean ±SD/%	N=40	Mean ±SD/%
Age	64	45.45±12.33	24	45±11.62	40	45.73±12.87
Gender						
Male	9	15.52	2	9.09	7	19.44
Female	49	84.48	20	90.91	29	80.56
Ethnicity						
Caucasian	53	91.38	21	95.45	32	88.89
Other	5	8.62	1	4.55	4	11.11
Education level						
High School or below	9	15.79	2	9.52	7	19.44
Some College	14	24.56	5	23.81	9	25
Bachelor's degree or Higher	34	59.65	14	66.67	20	55.56
Workplace type						
Health Care Agency	4	6.15	2	8.00	2	5.00
Social Service Agency	15	23.08	7	28.00	8	20.00
Financial Agencies	5	7.69	1	4.00	4	10.00
Government Departments	6	9.23	1	4.00	5	12.50
Non-Profit Agency	35	53.85	15	60.00	20	50.00
Legal and Justice Services	5	7.69	1	4.00	4	10.00
Profession						
Social Worker	35	63.64	13	65.00	22	62.86
Other	20	36.36	7	35.00	13	37.14

6

Experience of addressing elder abuse						
Yes	37	64.91	6	28.57	22	61.11
No	20	35.09	15	71.43	14	38.89
Experience of addressing abuse and neglect in people with dementia						
Yes	35	61.40	7	33.33	21	58.33
No	22	38.60	14	66.67	15	41.67

Note. Differential tests were conducted to examine variances between the control and intervention groups across variables. Chi-square test was employed for categorical variables, while t-test was utilized for continuous variables. Significance levels were annotated on the first column of variable names; ^+p <0.1, $^*p < 0.05$, $^{**}p$ <0.01.

<u>Service professional primary outcomes: Competency</u>

Service professionals in the intervention group and the control group showed improvement in their competency of working with APS to address financial exploitation. But there was no significant group difference. In terms of their confidence of recognizing financial exploitation and using community resources to prevent financial exploitation, service professionals in the intervention group showed more significant improvement at 3 months and 6 months than the control group, but the improvement was not significant at 12 months. Detailed results are in Tables SP1 and SP2. To better illustrate the relationship, we depicted two plots (See Figures SP1 and SP2).

Table SP1. Mixed linear model results of competence in working with APS

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time(ref: baseline)					
3 months	1.11	0.33	**0.00**	0.47	1.76
6 months	1.22	0.36	**0.00**	0.52	1.92
12 months	1.81	0.38	**0.00**	1.06	2.55
Group (ref: Control)					
Intervention	-0.23	0.80	0.77	-1.81	1.34
Gender (ref: Male)					
Female	-0.69	1.10	0.53	-2.84	1.46
Age	-0.01	0.03	0.76	-0.08	0.06
Ethnicity (ref: Caucasian)					

Others	0.71	1.40	0.61	-2.03	3.45
Education level (ref: High School or Below)					
Some College	0.10	1.28	0.94	-2.40	2.60
Bachelor's degree or Higher	-0.39	1.11	0.73	-2.56	1.78
Experience of addressing elder abuse/neglect (ref: No)					
Yes	1.65	1.28	0.20	-0.86	4.16
Experience of addressing abuse/neglect in dementia cases (ref: No)					
Yes	0.63	1.22	0.60	-1.76	3.02

Table SP2. Mixed linear model results for competency in recognizing financial exploitation and using community resources.

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time (ref: baseline)					
3 months	0.08	0.32	0.80	-0.55	0.71
6 months	0.43	0.36	0.23	-0.28	1.13
12 months	0.61	0.40	0.12	-0.16	1.39
Group (ref: Control)					
Intervention	-0.48	0.38	0.21	-1.24	0.27
Time X Group					
3 months #Intervention	1.20	0.40	**0.00****	0.41	1.99
6 months #Intervention	0.81	0.44	0.07*	-0.06	1.68
12 months #Intervention	0.52	0.48	0.28	-0.42	1.46
Gender (ref: Male)					
Female	-0.51	0.48	0.29	-1.46	0.43
Age	-0.01	0.02	0.39	-0.04	0.02
Ethnicity (ref: Caucasian)					
Others	0.02	0.62	0.97	-1.20	1.25
Education level (ref: High school or below)					
Some College	-0.38	0.56	0.49	-1.47	0.71

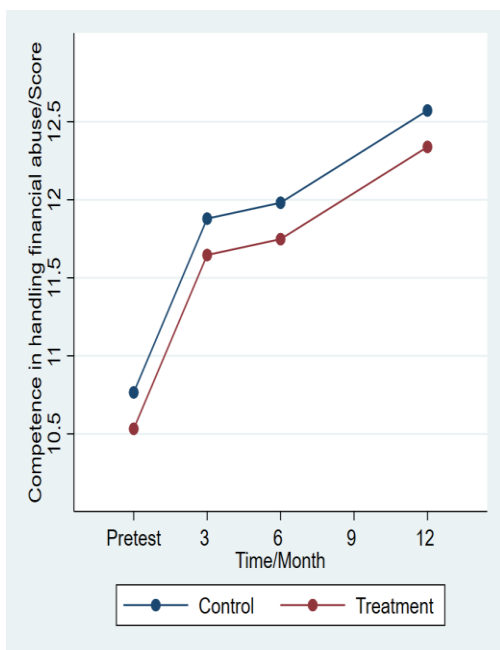|					
Bachelor's degree or Higher	-0.84	0.48	0.08+	-1.78	0.10
Experience of elder abuse/neglect (ref: No)					
Yes	-0.38	0.56	0.50	-1.48	0.72
Experience of abuse/neglect in dementia/MCI cases (ref: No)					
Yes	1.00	0.54	0.06	-0.05	2.05

Figure SP1. Competency in working with APS
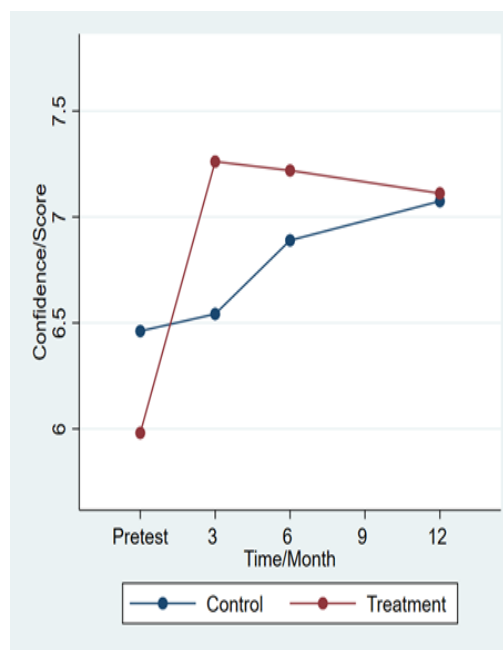
Figure SP2. Competency of recognizing financial exploitation & using community resources

<u>Service professional secondary outcomes: Dementia knowledge, dementia stigma, and tolerance attitude toward financial exploitation</u>

For dementia knowledge, both groups tended to show an increase in dementia knowledge over time, with statistically significant changes observed at 12 months (see Tables SP3 and Figure SP3). However, the differences in dementia knowledge between the groups were not significant. For dementia stigma, there were no significant differences between groups or across time for dementia stigma (see Tables SP4 and Figures SP4).

For their tolerance attitude toward financial exploitation, the findings were somewhat unexpected. The intervention group has shown an increase in their tolerance attitude toward financial exploitation immediately after the intervention, peaking at 3 months and then declining

9

until 6 months. Similar patterns were then observed from 6 months to 12 months for both groups, indicating the intervention temporarily increased the empathic attitude of the intervention group (see Tables SP5 and Figure SP5). The tolerance of financial exploitation consists of two parts: attitude toward financial exploitation behaviors of family members, and attitude toward addressing financial exploitation through making reports to authorities. Post hoc analyses indicated that the changes in the intervention group immediately after the intervention were primarily due to their belief in making reports to authorities as an ideal way to address financial exploitation.

Table SP3. Mixed linear model results for dementia knowledge

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time (ref: baseline)					
3 months	0.19	0.13	0.14	-0.06	0.43
6 months	0.17	0.13	0.21	-0.10	0.43
12 months	0.28	0.14	**0.05***	0.00	0.57
Group (ref: Control)					
Intervention	0.29	0.18	0.11	-0.07	0.65
Gender (ref: Male)					
Female	-0.22	0.25	0.40	-0.71	0.28
Age	0.00	0.01	0.65	-0.02	0.01
Ethnicity (ref: Caucasian)					
Others	-0.14	0.33	0.67	-0.80	0.51
Education level (ref: High School and Lower)					
Some College	-0.44	0.29	0.13	-1.00	0.12
Bachelor's degree or Higher	0.07	0.25	0.77	-0.42	0.56
Experience of elder abuse/neglect (ref: No)					
Yes	-0.54	0.27	**0.05**	-1.08	0.00
Experience of abuse/neglect in dementia/MCI cases (ref: No)					
Yes	0.60	0.26	**0.02**	0.09	1.11

Table SP4. Mixed linear model results for dementia stigma

Variables	Coefficient	S.E.	P-value	[95% conf. interval]

	Coefficient	S.E.	P-value	[95% conf. interval]	
Time (ref: baseline)					
3 months	0.27	0.51	0.59	-0.73	1.27
6 months	0.51	0.54	0.35	-0.56	1.58
12 months	-0.13	0.59	0.82	-1.28	1.02
Group (ref: Control)					
Intervention	0.04	0.94	0.97	-1.81	1.89
Gender (ref: Male)					
Female	-2.45	1.31	**0.06**+	-5.02	0.11
Age	-0.01	0.04	0.80	-0.09	0.07
Ethnicity (ref: Caucasian)					
Others	-0.16	1.69	0.92	-3.47	3.15
Education level (ref: High School or Below)					
Some College	0.70	1.48	0.64	-2.20	3.61
Bachelor's degree or Higher	1.40	1.31	0.28	-1.16	3.96
Experience of elder abuse/neglect (ref: No)					
Yes	0.71	1.41	0.61	-2.06	3.48
Experience of abuse/neglect in dementia cases (ref: No)					
Yes	-2.18	1.34	0.10+	-4.81	0.44

Table SP5. Mixed linear model results for tolerance attitude toward financial abuse

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time(ref: baseline)					
3 months	-1.06	0.49	**0.03***	-2.02	-0.10
6 months	-0.88	0.53	0.09+	-1.91	0.15
12 months	-0.72	0.61	0.23	-1.91	0.47
Group(ref: Control)					
Intervention	-0.79	0.53	0.14	-1.83	0.25
Time X Group					
3 months #Intervention	1.73	0.62	**0.01****	0.52	2.93
6 months #Intervention	0.94	0.66	0.16	-0.35	2.23

|					
12 months #Intervention	1.07	0.73	0.15	-0.37	2.50
Gender (ref: Male)					
Female	-1.64	0.65	**0.01****	-2.91	-0.37
Age	0.00	0.02	0.84	-0.04	0.04
Ethnicity (ref: Caucasian)					
Others	0.72	0.85	0.39	-0.94	2.39
Education level (ref: High School and Lower)					
Some College	1.00	0.75	0.18	-0.47	2.46
Bachelor's degree or Higher	0.76	0.64	0.24	-0.50	2.02
Experience of elder abuse/neglect (ref: No)					
Yes	-0.51	0.74	0.50	-1.96	0.95
Experience of abuse/neglect in dementia cases (ref: No)					
Yes	-0.49	0.71	0.49	-1.88	0.90
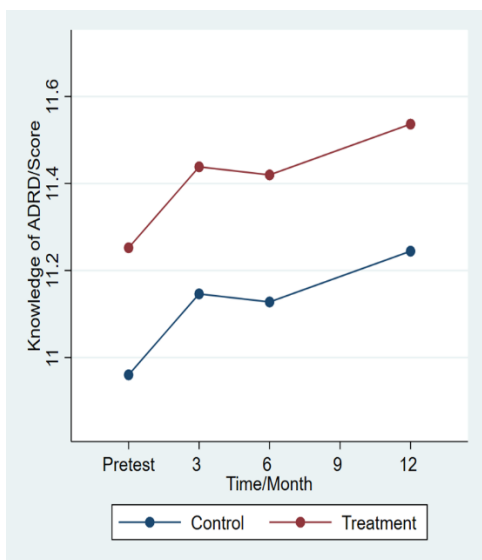
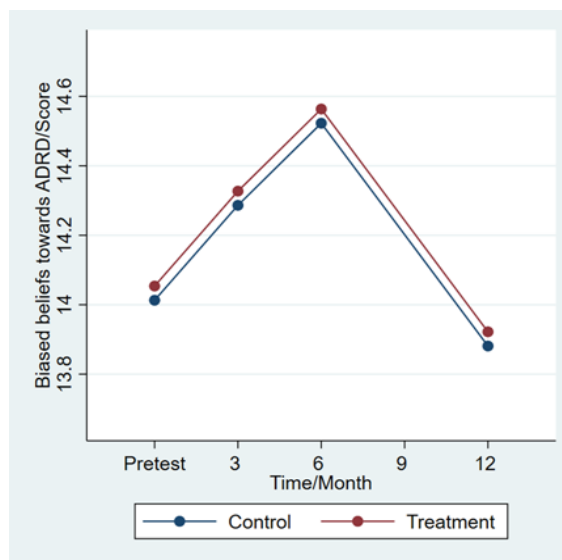Figure SP3. Dementia knowledge changes
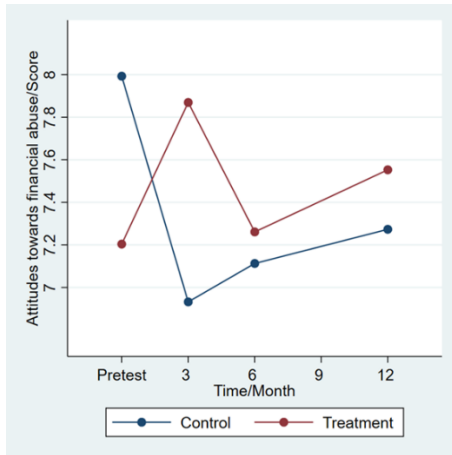

Figure SP4. Demetnia Stigam changes

12

Figure SP5. Tolerance attitude toward fiancial exploitation

An alternative control group design for service professionals

   We also included a different control group design for service professionals at a newly added research site for two reasons. First, due to a significant drop in the control group in the original design, we found that providing only a resource sheet was insufficient. Second, the community agencies we partnered with expressed a need for their service professionals to receive some training on this topic, regardless of the group they are in.

   In response, in a newly recruited site, the Region VII AAA catchment area, we implemented a control group with a 60-minute training session. The intervention group received 2.5 hours of training, as in the previous design. Like previously, the intervention group received intensive content on risk factors for financial exploitation and various strategies to address it, while the control group only received basic knowledge of dementia and signs of financial exploitation. Both groups received a list of community resources. Baseline demographics of 30 participants were provided in Table SP6.

   For competency outcomes, both groups increased their competence in working with APS, recognizing financial abuse, and using community resources to prevent financial exploitation at 3 months and 6 months, with no significant differences between the groups. For dementia knowledge, the intervention group enhanced their knowledge more than the control group at 3 months, but this difference disappeared at 6 months. Regarding dementia stigma, the intervention group consistently had lower stigma at both 3 months and 6 months, but the control group showed a sharper decrease in dementia stigma at 3 months, indicating a more substantial impact on the control group, though the group effect disappeared at 6 months. For the tolerance attitude toward financial exploitation, the intervention group showed an increase in tolerance of financial abuse, while the control group showed a steady decrease in tolerance.

   These findings imply that a one-hour training on dementia knowledge, financial abuse signs, and community resources could be at least effective as a 2.5-hour training for most outcomes

expected in this study. For dementia stigma and tolerance toward financial exploitation, the control group tened to have better results. However, this explanation may need to be further affirmed in future studies. The preliminary evidence suggests that the design of training for service professionals needs to be geared toward the specific needs of their organizations and the roles of service professionals (see Appendix Tables 1 to 5 and Figures 1 to 5).

Table SP6. Characteristics of Service Professionals at Baseline for Region 7AAA

Variables	Overall		Control		Intervention	
	N=30	Mean±SD/%	N=15	Mean±SD/%	N=15	Mean±SD/%
Age	30	44.73±12.84	15	47±13.42	15	42.47±12.28
Gender						
Male	2	6.67	0	0.00	2	13.33
Female	28	93.33	15	100.00	13	86.67
Ethnicity						
Caucasian	27	90.00	15	100.00	12	80.00
African American	2	6.67	0	0.00	2	13.33
Other	1	3.33	0	0.00	1	6.67
Education level						
High School and Lower	1	3.33	1	6.67	0	0
Some College	14	46.67	6	40	8	53.33
Bachelor's degree or Higher	15	50	8	53.33	7	46.67
Workplace type						
Health Care Agency	9	30.00	2	13.33	7	46.67
Social Service Agency	2	6.67	0	0.00	2	13.33
Financial Agencies	0	0.00	0	0.00	0	0.00
Government Departments	4	13.33	4	26.67	2	13.33
Non-Profit Agency	20	66.67	11	73.33	9	60.00
Other	2	6.67	0	0.00	2	13.33

	Overall N	Overall %	Control N	Control %	Intervention N	Intervention %
Job types						
Social Workers	15	50.00	6	40.00	9	73.33
Other	15	50.00	9	60.00	6	26.67
Experience of addressing elder abuse						
Yes	20	66.67	9	60.00	11	73.33
No	10	33.33	6	40.00	4	26.67
Experience of addressing abuse and neglect in dementia cases						
Yes	19	63.33	9	60.00	**10**	66.67
No	11	36.67	6	40.00	5	33.33

Note. Differential tests were conducted to examine variances between the control and intervention groups across each variable. The control group received 60 minutes training while the intervention group received 2.5-hour training. Chi-square test was employed for categorical variables, while t-test was utilized for continuous variables. $^+p<0.1,$ $^*p<0.05,$ $^{**}p<0.01.$

Family Caregivers

A total of 72 dementia family caregivers were recruited and assigned to two groups; however, 17 dropped out of the study. About 77% of the participants (n=55) participated in the baseline survey and at least one follow-up survey. The average age of caregivers was 66.1 years (SD=12.4), and 83.2% were female. The majority self-identified as Caucasian, with an average of 5.34 years (SD=9.59) of caregiving experience. Approximately 41% were spousal caregivers, and 37% were adult-children caregivers.

Table FC0. Overall sample characteristics and comparison of baseline characteristics between two groups

Variables	Overall		Control		Intervention	
	N=55	Mean±SD/%	N=25	Mean±SD/%	N=30	Mean±SD/%
Age	55	66.18±12.38	25	64.92±12.52	30	67.23±12.37
Gender						
Male	9	16.98	4	16	5	17.86
Female	44	83.02	21	84	23	82.14
Ethnicity						
Other	3	3.64			3	10
Caucasian	52	94.55	25	100	27	90

Education level						
High School or Below	13	23.64	5	20	8	26.67
Some College	20	36.36	11	44	9	30
Bachelor's degree or Higher	22	40	9	36	13	43.33
Household income						
Less than $10,000	1	1.89	0	0	1	3.45
$10,000 - $19,999	2	3.77	1	4.17	1	3.45
$20,000 - $29,999	5	9.43	1	4.17	4	13.79
$30,000 - $39,999	5	9.43	3	12.5	2	6.9
$40,000 - $49,999	9	16.98	5	20.83	4	13.79
$50,000 - $59,999	8	15.09	5	20.83	3	10.34
$60,000 - $69,999	6	11.32	3	12.5	3	10.34
$70,000 - $79,999	3	5.66	1	4.17	2	6.9
$80,000 - $89,999	4	7.55	1	4.17	3	10.34
$90,000 - $99,999	5	9.43	1	4.17	4	13.79
$100,000 or more	5	9.43	3	12.5	2	6.9
Year of care	47	5.34±9.59	20	5.05±8.53	27	5.56±10.45
Relationship						
Spouse	19	41.3	7	35	12	46.15
Parent/Grandparents	17	36.96	8	40	9	34.62
Others	10	21.74	5	25	5	19.23
Someone else who can help[+]						
No	19	35.85	5	21.74	14	46.67
Yes	34	64.15	18	78.26	16	53.33
Who can help[+]						
Nobody	26	47.27	9	36	17	56.67
Adult children	12	21.82	5	20	7	23.33
Friend	2	3.64	2	8	0	0
Siblings	5	9.09	4	16	1	3.33

Other relatives	1	1.82	0	0	1	3.33
Paid caretaker	3	5.45	3	12	0	0
Others	6	10.91	2	8	4	13.33

Note: Differential tests were conducted to examine variances between the control and intervention groups across each variable. Chi-square test was employed for categorical variables, while t-test was utilized for continuous variables. $^+p<0.1, ^*p <0.05, ^{**}p <0.01$.

Family caregiver primary outcomes: Competency

For competency of working with APS to address financial exploitation, both groups showed an upward trend. However, family caregivers in the intervention group showed a significantly greater increase in their competency than the control group at 3 months and 6 months at .10 level. In terms of the confidence of recognizing financial exploitation and using community resources to prevent financial exploitation, both groups increased over time, reaching significance at 6 months and 9 months. But there was no significant difference between the groups. Detailed results are in Tables FC1 and FC2. To better illustrate the relationship, we depicted two plots (See Figures FC1 and FC2).

Table FC1. Mixed linear model results for competence in working with APS

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time (ref: baseline)					
3 months	0.90	1.13	0.43	-1.32	3.12
6 months	1.30	1.30	0.32	-1.25	3.86
9 months	2.46	1.45	0.09+	-0.39	5.31
Group (ref: Control)					
Intervention	-0.83	1.19	0.49	-3.17	1.51
Time X Group					
3 months #Intervention	2.63	1.58	0.10+	-0.47	5.73
6 months #Intervention	3.08	1.76	0.08+	-0.37	6.53
9 months #Intervention	1.26	1.90	0.51	-2.47	4.99
Gender (ref: Male)					
Female	3.32	1.34	0.01**	0.69	5.95
Age	-0.01	0.05	0.91	-0.10	0.09
Ethnicity (ref: others)					

17

Caucasian	1.15	2.06	0.58	-2.90	5.19
Education level (ref: High School or Below)					
Some College	-2.81	1.10	0.01**	-4.98	-0.65
Bachelor's degree or Higher	-0.91	1.28	0.48	-3.43	1.61
Household income	-0.30	0.19	0.11	-0.66	0.07
Years of care	0.00	0.05	0.93	-0.11	0.10
Relationship (ref: Spouse)					
Parent/Grandparents	-0.25	1.33	0.85	-2.86	2.35
Others	-0.96	1.21	0.43	-3.32	1.41

Table FC2. Mixed linear model results for recognizing financial exploitation and using community resources

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time (ref: baseline)					
3 months	0.67	0.51	0.19	-0.32	1.66
6 months	1.53	0.60	0.01**	0.35	2.71
9 months	1.75	0.67	0.01**	0.43	3.07
Group (ref: Control)					
Intervention	-0.05	0.53	0.92	-1.08	0.98
Time X Group					
3 months #Intervention	0.35	0.72	0.63	-1.06	1.75
6 months #Intervention	0.52	0.82	0.52	-1.08	2.12
9 months #Intervention	-0.10	0.89	0.91	-1.84	1.64
Gender (ref: Male)					
Female	1.88	0.62	0.00	0.66	3.11
Age	0.03	0.02	0.15	-0.01	0.07
Ethnicity (ref: others)					8.07
Caucasian	0.07	0.96	0.95	-1.81	1.94

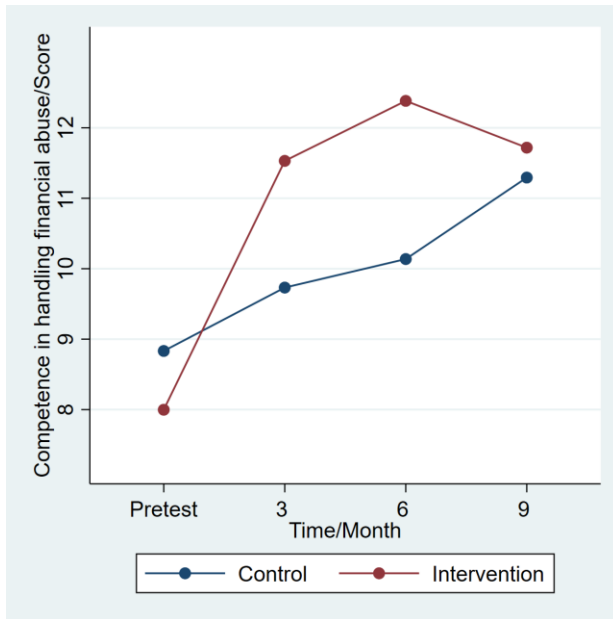| Education level (ref: High School and Lower)					
Some College	-1.03	0.51	0.04	-2.02	-0.03
Bachelor's degree or Higher	-0.23	0.57	0.69	-1.34	0.89
Household income	-0.09	0.08	0.27	-0.26	0.07
Year of care	-0.01	0.02	0.76	-0.05	0.04
Relationship (ref: Spouse)					
Parent/Grandparents	0.16	0.62	0.79	-1.04	1.37
Others	-0.70	0.54	0.20	-1.76	0.37

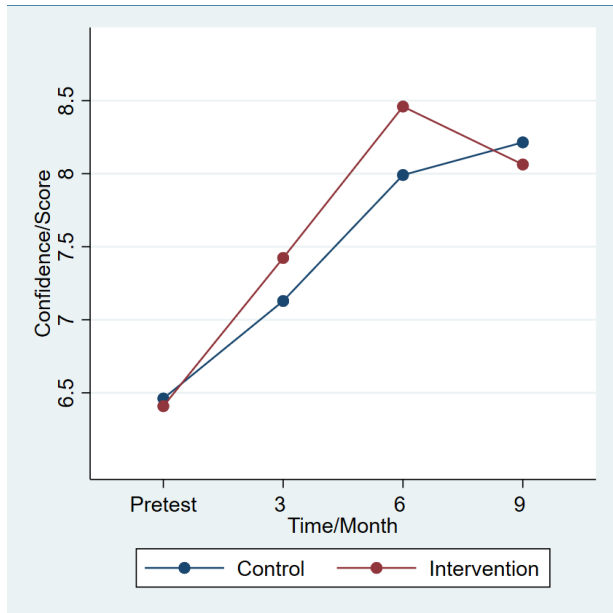

Figure FC1. Competence of working with APS

Figure FC2. Confidence in recognizing financial exploitation and using community resources

Caregiver secondary outcomes: Dementia knowledge, dementia stigma, tolerance attitude toward financial exploitation, and caregiver burden

For dementia knowledge, both groups showed an increase over time, with significant changes observed at 9 months (see Tables FC3 and Figure FC3). However, the differences in dementia knowledge between the groups were not significant. For dementia stigma, there were no significant differences between the groups. At six months, both groups showed some decrease

19

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time (ref: baseline)					
3 months	-0.03	0.30	0.92	-0.61	0.55
6 months	0.34	0.34	0.32	-0.32	0.99
9 months	0.85	0.37	0.02*	0.13	1.57
Group (ref: Control)					
Intervention	0.01	0.27	0.96	-0.52	0.54
Gender (ref: Male)					
Female	0.22	0.42	0.61	-0.61	1.04
Age	0.00	0.01	0.94	-0.03	0.03
Ethnicity (ref: others)	0.68	0.67	0.31	-0.63	1.98
Caucasian					
Education level (ref: High School or below)					
Some College	0.80	0.34	0.02*	0.14	1.46
Bachelor's degree or Higher	1.39	0.38	0.00***	0.64	2.15
Household income	0.10	0.06	0.09+	-0.02	0.21
Year of care	-0.01	0.02	0.65	-0.04	0.02
Relationship (ref: Spouse)					
Parent/Grandparents	0.68	0.42	0.10+	-0.13	1.50
Others	0.11	0.36	0.77	-0.60	0.82

in their stigma compared to baseline, approaching significance at the .10 level (see Tables FC3 and Figure FC4).

For their tolerance attitude toward financial exploitation, there were no significant differences between the groups or across time (see Tables FC5 and Figure FC5). For caregiver burden, both the intervention group and the control group showed a similar downward trend from baseline up to six months. After six months, the intervention group continued to decrease, while the control group showed an increasing trend, which was significant at the .05 level.

Table FC3. Mixed linear model results for dementia knowledge

Table FC4. Mixed linear model results for dementia stigma

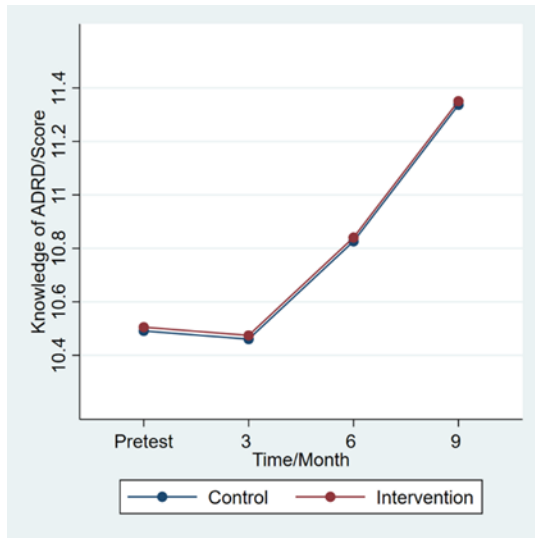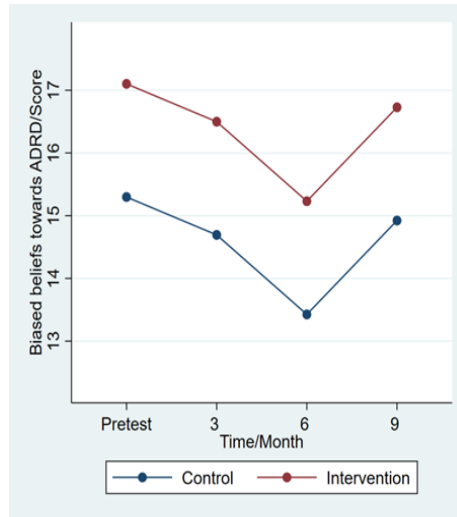| Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time(ref: baseline)					
3 months	-0.60	1.01	0.55	-2.57	1.37
6 months	-1.87	1.14	0.10+	-4.11	0.37
9 months	-0.37	1.25	0.76	-2.82	2.07
Group(ref: Control)					
Intervention	1.81	0.96	0.06+	-0.07	3.68
Gender(ref: Male)					
Female	-2.42	1.50	0.11	-5.36	0.52
Age	0.05	0.05	0.31	-0.05	0.15
Ethnicity(ref: others)					
Caucasian	3.83	2.34	0.10+	-0.76	8.42
Education level (ref: High School or below)					
Some College	-0.58	1.20	0.63	-2.94	1.77
Bachelor's degree or Higher	-1.29	1.36	0.34	-3.95	1.38
Household income	0.02	0.21	0.93	-0.38	0.42
Year of care	-0.05	0.06	0.38	-0.16	0.06
Relationship (ref: Spouse)					
Parent/Grandparents	2.13	1.47	0.15	-0.76	5.01
Others	0.78	1.29	0.55	-1.75	3.31

Figure FC3. Dementia knowledge changes

Figure FC4. Dementia stigma changes

Table FC5. Mixed linear model results for tolerance attitudes toward financial exploitation

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time (ref: baseline)					
3 months	-0.21	0.56	0.70	-1.31	0.88
6 months	-0.30	0.64	0.64	-1.56	0.96
9 months	-0.65	0.70	0.35	-2.01	0.72
Group (ref: Control)					
Intervention	1.25	0.89	0.16	-0.50	3.00
Gender (ref: Male)					
Female	0.12	1.34	0.93	-2.52	2.75
Age	-0.01	0.05	0.75	-0.11	0.08
Ethnicity (ref: others)					
Caucasian	2.60	2.05	0.20	-1.42	6.62
Education level (ref: High School or Below)					
Some College	-0.74	1.13	0.51	-2.95	1.48
Bachelor's degree or Higher	-2.06	1.26	0.10	-4.52	0.40
Household income	-0.28	0.19	0.13	-0.64	0.08

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Year of care	-0.06	0.06	0.27	-0.17	0.05
Relationship (ref: Spouse)					
Parent/Grandparents	-0.42	1.37	0.76	-3.10	2.26
Others	1.40	1.23	0.26	-1.01	3.81

Table FC6. Mixed linear model results for caregiver burden

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time (ref: baseline)					
3 months	-2.42	1.26	0.06 +	-4.89	0.05
6 months	-0.89	1.23	0.47	-3.30	1.51
9 months	2.28	1.27	0.07+	-0.21	4.78
Group (ref: Control)					
Intervention	3.07	1.80	0.09+	-0.46	6.59
Time X Group					
3 months #Intervention	-0.35	1.86	0.85	-4.00	3.29
6 months #Intervention	-0.70	1.80	0.70	-4.22	2.83
9 months #Intervention	-3.93	1.85	0.03*	-7.55	-0.31
Gender (ref: Male)					
Female	-3.97	1.80	0.03	-7.49	-0.44
Age	-0.12	0.08	0.14	-0.27	0.04
Ethnicity (ref: others)					8.07
Caucasian	2.35	2.92	0.42	-3.37	
Education level (ref: High School or below)					
Some College	0.31	1.33	0.82	-2.29	2.91
Bachelor's degree or Higher	-0.25	2.07	0.90	-4.32	3.81
Household income	-0.15	0.37	0.68	-0.87	0.56
Year of care	-0.02	0.08	0.85	-0.17	0.14
Relationship (ref: Spouse)					
Parent/Grandparents	2.05	1.90	0.28	-1.67	5.77

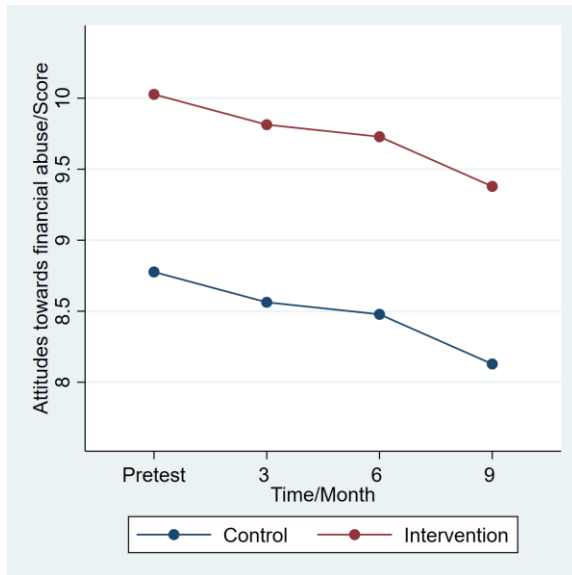|			1.95	1.84	0.29	-1.66	5.55
Others							

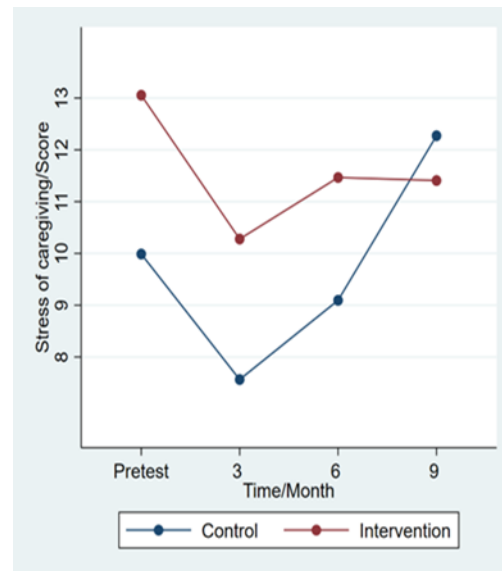Figure FC4. Tolerance toward financial exploitation

Figure FC6. Caregiver stress changes

Older Adults with Cognitive Decline

We recruited 80 older adults living with cognitive decline, who provided informed consent to be screened. Of these, 63 who met the criteria for inclusion using screening assessment tools (MoCA, Dementia Worry, and self-rated cognitive health) were enrolled in the project. The eligible older adults exhibited mild cognitive decline, with MoCA scores between 18 and 25. For those with scores of 26 or above, they rated their cognitive health as fair and expressed some concerns about their cognitive health. A total of 58 older adults completed the baseline survey and had at least one follow-up survey. The final sample included 27 participants in the control group and 31 in the intervention group. The average age of this group as 7.36 (SD-7.1), and 70% of them were female. About 60% of them lived alone, and 17.7% received a formal diagnosis of cognitive impairment. Overall, there were no differences in sociodemographic characteristics between the two groups at baseline.

Table OA0. Overall sample characteristics and group characteristics at baseline

Variables	Overall		Control		Intervention	
	N=58	Mean±SD/%	N=27	Mean±SD/%	N=31	Mean±SD/%
Age	58	73.64±7.13	27	73.81±8	31	73.48±6.41
Gender[+]						

24

Male	17	29.82	11	40.74	6	20
Female	40	70.18	16	59.26	24	80
Education level						
High School and Lower	20	35.09	8	29.63	12	40
Some College	18	31.58	9	33.33	9	30
Bachelor's degree and Higher	19	33.33	10	37.04	9	30
Household income						
Less than $10,000	9	16.98	2	7.41	7	26.92
$10,000 - $19,999	13	24.53	8	29.63	5	19.23
$20,000 - $29,999	9	16.98	4	14.81	5	19.23
$30,000 - $39,999	5	9.43	2	7.41	3	11.54
$40,000 - $49,999	3	5.66	3	11.11		0
$50,000 - $59,999	4	7.55	3	11.11	1	3.85
$60,000 - $69,999	1	1.89	1	3.7	0	0
$70,000 - $79,999	2	3.77	1	3.7	1	3.85
$80,000 - $89,999	1	1.89	1	3.7	0	0
$90,000 - $99,999	1	1.89	0	0	1	3.85
$100,000 or more	5	9.43	2	7.41	3	11.54
Hard to pay your daily living expense						
Very difficult	4	7.02	2	7.41	2	6.67
Difficult	8	14.04	3	11.11	5	16.67

Not very difficult	21	36.84	10	37.04	11	36.67
Not difficult at all	24	42.11	12	44.44	12	40
Living status						
At home in the community	38	66.67	21	77.78	17	56.67
Public housing	10	17.54	4	14.81	6	20
An independent living care facility	4	7.02	2	7.41	2	6.67
Others	5	8.77	0		5	16.67
Living alone						
No	21	39.62	10	40	11	39.29
Yes	32	60.38	15	60	17	60.71
Received a formal diagnosis of memory-related problems						
No	42	82.35	19	79.17	23	85.19
Yes	9	17.65	5	20.83	4	14.81
Involved in any support groups						
No	48	85.71	23	88.46	25	83.33
Yes	8	14.29	3	11.54	5	16.67
Currently receive regular care[+]						
No	33	60.00	19	73.08	14	48.28
Yes	22	40.00	7	26.92	15	51.72
Currently providing care to someone						
No	46	83.64	22	84.62	24	82.76
Yes	9	16.36	4	15.38	5	17.24
How often are you concerned about your memory or cognitive status						
All the time	2	3.92	1	4.17	1	3.7
Often	8	15.69	4	16.67	4	14.81
Sometimes	20	39.22	9	37.5	11	40.74
Rarely	15	29.41	7	29.17	8	29.63

| Never | 6 | 11.76 | 3 | 12.5 | 3 | 11.11 |

Note: Differential tests were conducted to examine variances between the control and intervention groups across each variable. Chi-square test was employed for categorical variables, while t-test was utilized for continuous variables. $^+p <0.1, ^*p <0.05, ^{**}p <0.01$.

Older adult primary outcome: Competency

For competency in working with APS to address financial exploitation, both groups significantly increased their competency at the 9-month follow-up assessment at the .05 level. The intervention group showed a better improvement at 3 months compared to the control group, also at the .05 level.

In terms of confidence in recognizing financial exploitation and using community resources to address financial exploitation, both groups increased over time, reaching significance at 3 months, 6 months, and 9 months. However, there was no significant difference between the groups. To better illustrate the changes, we depicted two plots (see Figures OA1 and OA2).

Table OA1. Mixed linear model results for competence of working with APS

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time (ref: baseline)					
3 months	0.02	0.64	0.98	-1.24	1.27
6 months	1.04	0.68	0.12	-0.29	2.37
9 months	1.40	0.65	**0.03***	0.12	2.68
Group (ref: Control)					
Intervention	-0.14	0.84	0.87	-1.79	1.52
TimeXGroup					
3 months #Intervention	1.66	0.90	**0.06***	-0.10	3.42
6 months #Intervention	0.54	0.97	0.58	-1.36	2.43
9 months #Intervention	-0.12	0.93	0.90	-1.94	1.70
Gender(ref: Male)					
Female	2.05	0.81	**0.01****	0.47	3.64
Age	-0.07	0.05	0.19	-0.17	0.03
Education level (ref: High School and Lower)					
Some College	1.50	0.92	0.10	-0.30	3.31

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Bachelor's degree and Higher	-0.04	0.88	0.97	-1.76	1.69
Household income	0.13	0.15	0.40	-0.17	0.43
Live alone					
Yes	1.79	0.89	**0.04***	0.05	3.53
Formal diagnosis of memory-related problems					
Yes	0.81	1.08	0.45	-1.31	2.93
Involved in any support groups					
Yes	-0.66	1.18	0.57	-2.98	1.65

Table OA2. Mixed linear model results for recognizing financial exploitation and using community resources

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time (ref: baseline)					
3 months	3.60	0.25	**0.00****	3.10	4.09
6 months	3.77	0.27	**0.00****	3.25	4.30
9 months	3.90	0.26	**0.00****	3.39	4.41
Group (ref: Control)					
Intervention	-0.21	0.35	0.55	-0.90	0.48
Gender (ref: Male)					
Female	0.29	0.43	0.50	-0.55	1.13
Age	0.00	0.03	0.98	-0.05	0.05
Education level (ref: High School or Below)					
Some College	0.54	0.47	0.26	-0.39	1.47
Bachelor's degree or Higher	0.63	0.45	0.17	-0.26	1.52
Household income	0.01	0.08	0.86	-0.14	0.17
Live alone					
Yes	0.81	0.46	**0.08+**	-0.09	1.70
Formal diagnosis of memory-related problems					
Yes	-0.18	0.57	0.75	-1.30	0.94

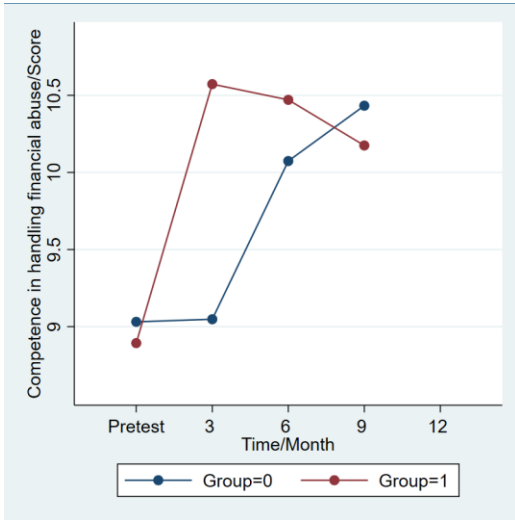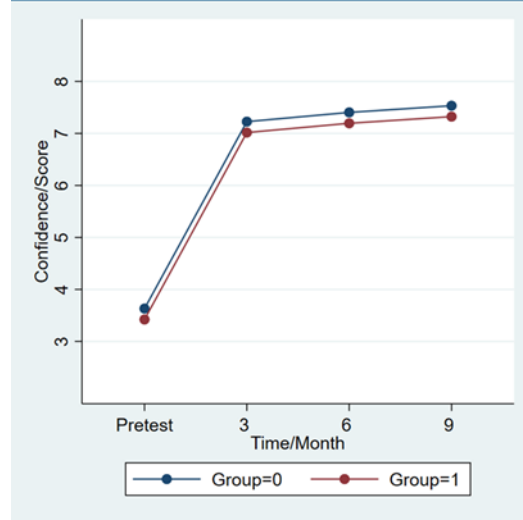| Involved in any support groups					
Yes	0.53	0.60	0.38	-0.65	1.70

Figure OA1. Competence in working with APS

Figure OA2. Confidence in recognize financial mistreatment/community resources

Older adult secondary outcomes: Dementia Knowledge, dementia stigma, and attitude toward financial exploitation

For dementia knowledge, the control group showed an increase at 3 months, followed by a decline until 9 months. The intervention group experienced a slight downward trend until 3 months but then began to increase until 9 months. Significant group differences started to appear at 6 months, with the intervention group showing an increasing trend while the control group showed a decreasing trend (see Tables OA3 and Figure OA3). However, these significant differences were primarily at the .10 level.

For dementia stigma, there were significant differences over time. Both groups showed a significant drop at 3 months. Although there was a slight increase afterward, at 9 months, both groups remained significantly lower than their baseline scores at the .05 level, indicating that the training had a relatively long-term impact on their dementia stigma for both groups (see Tables OA4 and Figure OA4).

For their tolerance attitude toward financial exploitation, there were significant differences between the two groups, mainly attributable to their baseline differences. Over time, both groups showed an increase in their tolerance of financial exploitation until 6 months, after which this effect disappeared (see Tables OA5 and Figure OA5).

Table OA3. Mixed linear model results for dementia knowledge

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time(ref: baseline)					
3 months	0.31	0.32	0.33	-0.31	0.93
6 months	0.00	0.32	1.00	-0.63	0.63
9 months	-0.61	0.31	**0.05***	-1.21	0.00
Group(ref: Control)					
Intervention	-0.53	0.37	0.15	-1.27	0.20
Time X Group					
3 months #Intervention	-0.51	0.44	0.25	-1.37	0.36
6 months #Intervention	-0.20	0.46	0.66	-1.11	0.70
9 months #Intervention	0.68	0.45	**0.12**+	-0.20	1.56
Gender(ref: Male)					
Female	0.78	0.33	**0.02***	0.14	1.43
Age	0.00	0.02	0.84	-0.04	0.04
Education level(ref: High School or Below)					
Some College	0.87	0.37	**0.02***	0.14	1.61
Bachelor's degree or Higher	1.44	0.36	**0.00****	0.74	2.15
Household income	0.20	0.06	**0.00****	0.08	0.32
Live alone					
Yes	0.17	0.36	0.64	-0.54	0.88
Formal diagnosis of memory-related problems					
Yes	-0.55	0.44	0.21	-1.42	0.32
Involved in any support groups					
Yes	0.34	0.48	0.49	-0.61	1.28

Table OA4. Mixed linear model results for dementia stigma

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time(ref: baseline)					
3 month	-1.87	0.55	**0.00****	-2.95	-0.80
6 month	-1.50	0.57	**0.01****	-2.62	-0.38
9 month	-1.16	0.56	**0.04***	-2.25	-0.07
Group(ref: Control)					
Intervention	0.93	0.76	0.22	-0.56	2.42
Gender(ref: Male)					
Female	-3.46	0.90	**0.00**	-5.22	-1.70
Age	0.07	0.06	0.19	-0.04	0.18
Education level(ref: High School or Below)					
Some College	-0.82	1.02	0.42	-2.81	1.18
Bachelor's degree or Higher	-2.44	0.98	**0.01****	-4.35	-0.53
Household income	-0.38	0.17	**0.03***	-0.72	-0.05
Live alone					
Yes	-0.92	0.98	0.35	-2.85	1.00
Formal diagnosis of memory-related problems					
Yes	0.88	1.21	0.47	-1.49	3.24
Involved in any support groups					
Yes	0.27	1.31	0.84	-2.30	2.85

Table OA5. Mixed linear model results for tolerance attitude toward financial exploitation

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time(ref: baseline)					
3 months	0.68	0.59	0.25	-0.47	1.83
6 months	1.13	0.61	**0.07+**	-0.08	2.33
9 months	0.14	0.60	0.81	-1.03	1.31
Group(ref: Control)					

Intervention	1.76	0.62	**0.00****	0.55	2.98
Gender(ref: Male)					
Female	-2.55	0.73	**0.00****	-3.99	-1.11
Age	0.02	0.05	0.69	-0.07	0.11
Education level(ref: High School and Lower)					
Some College	-1.19	0.83	0.15	-2.82	0.44
Bachelor's degree and Higher	-1.65	0.80	**0.04***	-3.22	-0.09
Household income	-0.37	0.14	**0.01****	-0.65	-0.10
Live alone					
Yes	-0.17	0.80	0.83	-1.75	1.41
Formal diagnosis of memory-related problems					
Yes	2.64	0.98	**0.01****	0.72	4.56
Involved in any support groups					
Yes	-2.49	1.06	**0.02****	-4.56	-0.41
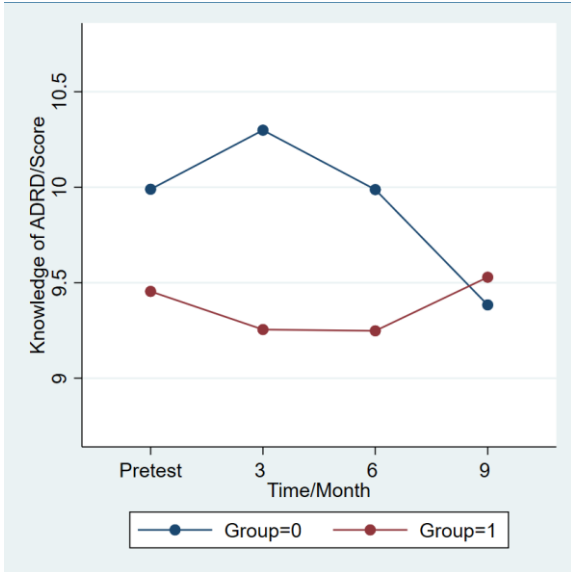
Figure OA3. Knowledge of dementia changes
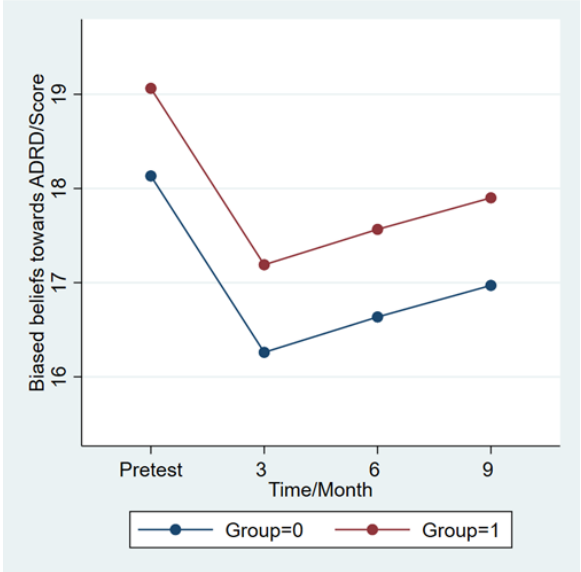
Figure OA4. Dementia stigma changes

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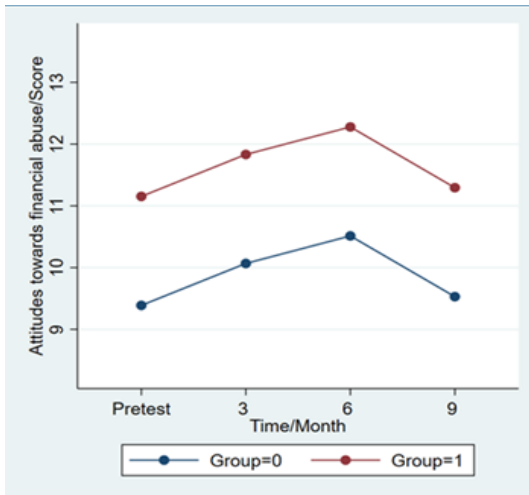
Figure OA5. Changes in tolerance attitude toward financial exploitation

Summary of Findings

For service professionals, both the intervention group (who received 2.5 hours of training) and those who received community resource sheets reported improved competency in preventing financial exploitation via working with adult protective services, recognizing financial exploitation, and utilizing community resources. However, the intervention group showed a greater increase in their ability to recognize financial exploitation and utilize community resources to prevent it compared to the control group. The intervention had a lagged effect on dementia knowledge for both groups and minimal impact on addressing stigma toward dementia. This calls for more effective intervention to tackle the stigma toward dementia. An empathetic attitude toward financial exploitation depends on the training content. Training that includes alternative strategies to prevent financial exploitation, rather than merely making referrals to APS, enables service professionals to adopt a more curative rather than punitive approach to deal with financial exploitation.

For family caregivers and older adults with cognitive decline, those in the intervention group received 2.5-hour group training, a community resource sheet, and six sessions of case management services addressing their unique risk factors for financial exploitation. The control group received 1.0-hour group training and a community resource sheet. Overall, caregivers in both the intervention and control groups reported improved competency in preventing financial exploitation by working with adult protective services, recognizing financial exploitation, and utilizing community resources. However, the intervention group showed a greater increase in their ability to work with APS compared to the control group. The same pattern was found in older adults with cognitive decline, indicating that families affected by dementia need education and assistance navigating APS services.

Regarding dementia knowledge and stigma, caregivers in both groups showed a steady increase trend until 9 months and some reduction in dementia stigma at 6 months, indicating similar advantages of the two approaches in addressing dementia literacy for caregivers. However, caregiver stress was reduced in the intervention group, highlighting the benefits of the intervention. For dementia knowledge and stigma among older adults, those in the control group showed an immediate increase in knowledge right after the intervention, but this did not last. The intervention group, however, showed a steady increase over time. For dementia stigma, both groups experienced a drop immediately after the intervention, which persisted until 9 months. For the tolerance of financial exploitation, caregivers in both groups showed a downward trend, indicating less tolerance, but the effect was not statistically significant. For older adults, their attitude toward financial exploitation tended to become more lenient after the intervention until 6 months, and then returned to previous levels. Overall, these findings suggest that the intervention has some advantages over the control condition. However, there remains a need to design effective dementia education training programs that are both impactful and long-lasting. Additionally, further exploration is needed into beliefs toward financial exploitation, perpetrators, and current approaches to address financial exploitation committed by family members.

Limitations

This study has several limitations. First, the small sample size in the family caregiver and older adult groups may limit the power to identify statistical significance in the outcomes, which is why we included .10 levels in the report. Second, we conducted the project during the COVID-19 pandemic, which not only posed challenges to participant recruitment and retention but may also affect the generalizability of our findings to similar demographic populations outside the context of a public health crisis. Since our project is community-based and relies on the buy-in of local community stakeholders, we should have included their perspectives in designing the intervention, particularly for interventions targeting their staff members. That is why we had a different control group design for service professional groups in a later added site (Region VII). Third, we did not explore or elaborate on any moderation effects of significant covariates, that is, how the intervention effects might differ across subgroups based on sex, living arrangement, education levels or location. For a similar reason due to the sample size, we did not examine any underlying mechanisms that may have led to the outcome changes. Despite these limitations, we believe the findings of this study shed new light on approaches that can potentially reduce financial exploitation risks for rural older adults affected by cognitive decline.

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Artifacts

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List of products

Conference Presentations

Sun, F (2022). Prevention of Abuse and Neglect Among Individuals affected by Cognitive Impairment or Dementia. Presented at the 33th annual conference of National Adult Protective Service Association (NAPSA) in Grand Rapids, Michigan on August 30, 2022.

Sun, F., Kim, H., Zhang, Z., Wang, X , & Tuckers, B. (2022). Prevention of financial exploitation among older adults with dementia in rural Michigan: Preliminary outcomes and lessons learned. Presented at the 77th annual conference of American Society of Criminology in Altana, from November 16 to 19, 2022.

Wang X, **Sun, F**., Zhang, Z., Tucks, B., Kim, H. et al. (2022) Financial abuse and fraud prevention and intervention programs for older adults with dementia: An integrative review. Presented at the 77th annual conference of American Society of Criminology in Altana, from November 16 to 19, 2022.

Sun, F(2023). Presentation Presented at the NIJ Research Conference in Washington D.C. May 22nd to May 25th, 2023. Prevention of Financial Mistreatment Among Older Adults with Dementia/Cognitive Decline in Rural Michigan: Pilot Findings and Lessons Learned

Sun, F., Zhang, Z., & Wang, X (2023)Prevention of Financial Exploitation Among Older Adults with Dementia in Rural Michigan of the U.S.A: Pilot Findings from a RCT Design. Poster presented at the 2023 International Psychogeriatrics Association (IPA) International Congress, 29 June -2 July 2023, Lisbon, Portugal.

Sun, F., Zhang, Z. Kim, H., Xiong, Y., Yang, H., & Wang, X. Enhancing Capacity of Service Professionals to Prevent Financial Exploitation in Rural Older Adults with Dementia. Presented at the 75th annual conference of Gerontological Society of America (GSA) on November 8 to 12, 2023. https://doi.org/10.1093/geroni/igad104.3304

Sun, F, Shen, Y, Feng, Y, Kennedy, T. Prevalence of Elder Abuse and Neglect of Persons with Dementia: A Systematic Review and Meta-Analysis. Presented at the 75th annual conference of GSA on November 8 to 12, 2023. https://doi.org/10.1093/geroni/igad104.2129

Two manuscripts under review

Shen Y., **Sun, F**., Feng, Y, Meng, H., & Kennedy, T. Prevalence of elder abuse and neglect of persons with dementia: a systematic review and meta-analysis. Under review by International Journal of Geriatric Psychiatry

Wang X, **Sun, F**., Zhang, Z., Tucks, B., Kim, H. et al. Financial abuse and fraud prevention and intervention programs for older adults with dementia: An integrative review. Under review by Dementia.

Data sets generated

We developed an intervention handbook for participants: service professionals, family caregivers, and older adults with cognitive decline. Each handbook includes training modules on the following components: an overview of dementia and financial abuse/fraud, risk factors for financial abuse, strategies to mitigate these risks, and community resources and support. Additionally, we created three animated videos showcasing case studies on financial abuse and fraud, which are embedded in the group training module for each target group.

Additionally, we developed a facilitator manual including a home visit practice protocol covering home environment scans, financial vulnerability and capacity assessments, the design of person-centered intervention goals and plans, strategy coaching, and evaluation of the intervention. Qualitative data from case notes provided by caseworkers in the intervention group and qualitative feedback from participants were collected.

For each target group, we generated a STATA file and an SPSS file containing all the data at baseline and various follow-up assessment points, along with a Word file with the questionnaire and coding details.

Dissemination activities

We presented preliminary findings of this project at multiple national and international conferences. For example, we presented two papers at the 77th annual conference of American Society of Criminology. One paper is entitled Prevention of Financial Mistreatment Among Older Adults with Dementia in Rural Michigan: Pilot Findings and Lessons Learned, and the other is entitled Evidence on Practice and policy efforts in addressing financial fraud and abuse among elders with dementia: A systematic review. We also presented the findings at IPA International Congress, GSA conferences and NIJ research conferences in 2023 as shown in the products section.

We were reached out by a correspondent from WalletHub to share insights regarding financial fraud prevention to the public. https://wallethub.com/edu/states-with-best-elder-abuse-protection/28754#expert=Fei_Sun. The P.I. also shared findings via the network of community partners such as Michigan Dementia Coalition, the Michigan Associations of Area Agency on Aging, and Michigan Health Endowment Fund.

Participants and other collaborating organizations

Research team

Name: Fei Sun Project Role: P.I. Zhenmei Zhang Project Role: Co-Investigator; Xia Wang Project Role: Co-Investigator

Research assistants Lucas Prieto (2020 to 2021); Ha-Neul Kim (2021 to 2023); Yuan Xiong (2022 to 2023);

Project assistant: Katie Donovan (2020 to 2022) and Brittany Tuckers (Consultant, 2020 to 2024)

Other community partner agencies

Participated in all three parts: Manistee Human Services Collaborative Location of Organization: 1672 US 31 South, Manistee, MI; Region VII Area Agency on Aging 1615 South Euclid Avenue, Bay City, MI, 48706

Participated in the part for service professionals only: The Upper Peninsula Commission for Area Progress (UPCAP): 2501 14th Avenue South, Escanaba, MI, 49829; Region 3B Area Agency on Aging: 200 W Michigan Ave, Battle Creek, Mi, 49017

Participated in the part for family caregivers and older adults: Alpena Senior Citizens Center, 501 River Street, Alpena, MI 49707; Otsego County Commission on Aging, 1165 Elkview Avenue, P.O. Box 430 Gaylord MI 49735; Region 9 Area Agency on Aging, 2569 US South Alpena, 49707

Other collaborators

Michigan Dementia Coalition –The End of Abuse and Neglect of Persons with Dementia Subcommittee. The P.I. serves as Co-chair for this subcommittee, which consists of a group of multidisciplinary professionals including physicians, social workers, nurses, aging service administrators, and other community stakeholders (APS, police). Dr. Peter Lichtenberg from Wayne State University provided consultation for curriculum developed and delivered training to our community agency staff involved in this project.

Changes in approach from original design and reason for change, if applicable

This study was launched during the COVID-19 pandemic, which necessitated three changes described below. The primary change was shifting the group education training component from in-person to online. Because of the concerns about the spread of the virus, moving from in-person format to an online format was necessary.

Another change was the sample size for family caregivers and older adults with cognitive decline, which was lower than originally planned. In the original proposal, we targeted 106 elders, 78 caregivers, and 70 service professionals. In this project, we enrolled 80 elders, 72 family caregivers, and 91 service professionals. This was mainly due to changes in community agency partners and difficulties in recruiting a vulnerable population during the COVID-19 pandemic. During this period, two of our original community agency partners experienced leadership and staff changes: the CEO of Region 3B left the agency, and the project coordinator at UPCAP also left their position. Additionally, recruitment efforts in the UP sites were challenged by the widespread areas. Consequently, the original two sites (UPCAP and Region 3B) dropped out of the study.

To replace the UPCAP that covers rural communities in the UP area, we added Ishpeming Senior Center and Manistique Senior Center. To replace the site in the Lower Peninsula, we added Alpena Senior Center, Region 9AAA, and Region VII AAA as our research

sites. Throughout this period, we faced ongoing challenges in recruiting caregivers and older adults with cognitive decline, primarily due to a general lack of interest in research participation or concerns regarding caseworker interactions in their home settings. To increase participation, we diversified our recruitment strategies, including organizing community events, conducting recruitment talks, and leveraging local media platforms. Despite these efforts, our numbers were lower than expected.

The last change involved the control group design for the service professionals. This was not a major change but a tweak of the original control group design for the newly recruited site. In the original design, we only provided a resource sheet to the control group. In the follow-up design, we included a 1-hour training session for the control group of service professionals recruited by Region VII AAA. The detailed results are included in the Appendix.

Appendix: Reports of a different control group design for service professional groups in Region VII Area

Table 1. Mixed linear model results for competence of working with APS

| Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time(ref: baseline)					
3 month	1.29	0.38	**0.00**	0.54	2.04
6 month	1.83	0.60	**0.00**	0.65	3.01
Group(ref: Control)					
Intervention	1.09	0.83	0.19	-0.54	2.72
Gender(ref: Male)					
Female	0.10	1.94	0.96	-3.69	3.90
Age	0.11	0.03	**0.00**	0.05	0.16
Ethnicity(ref: Caucasian)					
African American	-2.91	1.77	0.10	-6.38	0.55
Others	-4.02	2.71	0.14	-9.32	1.29
Education level(ref: High School or Below)					
Some College	3.55	2.03	**0.08**	-0.42	7.52
Bachelor's degree or Higher	2.94	2.11	0.16	-1.20	7.08
Experience of elder abuse/neglect(ref: No)					
Yes	-2.46	1.26	**0.05**	-4.93	0.01
Experience of abuse/neglect in dementia/MCI cases(ref: No)					
Yes	1.48	0.97	0.13	-0.41	3.38
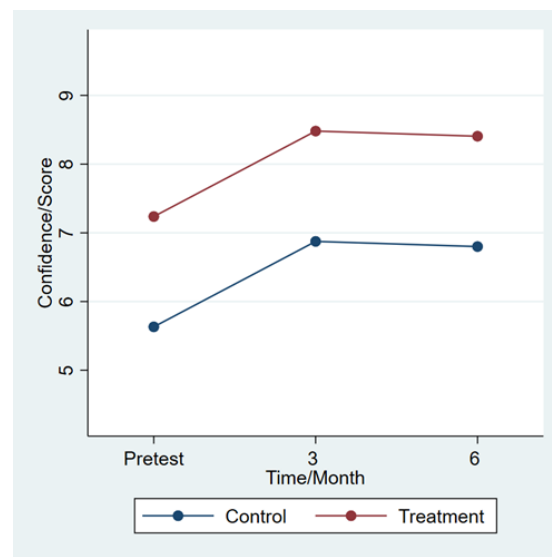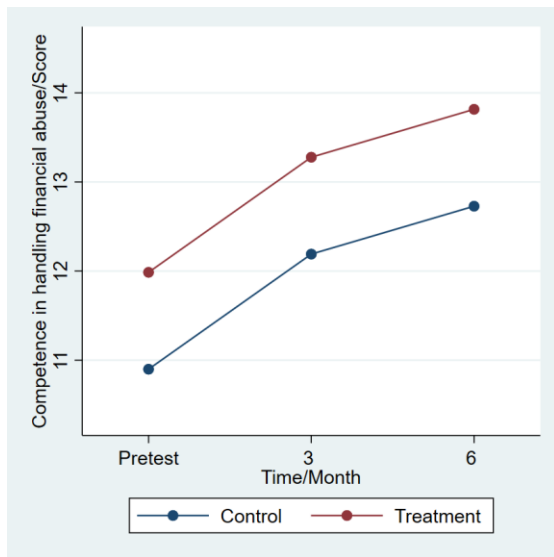
Figure 1. Changes in competence of working with APS

Figure 2. Changes in competence of recognizing financial exploitation and using community resources

Table 2. Mixed linear model results for confidence in recognizing financial exploitation and using community resources

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time(ref: baseline)					
3 months	1.24	0.27	**0.00****	0.71	1.77
6 months	1.17	0.42	**0.01****	0.35	1.98
Group(ref: Control)					
Intervention	1.61	0.39	**0.00****	0.85	2.36
Gender(ref: Male)					
Female	1.54	0.85	0.07+	-0.13	3.21
Age	0.03	0.01	**0.03***	0.00	0.06
Ethnicity(ref: Caucasian)					
African American	-2.25	0.83	**0.01****	-3.87	-0.62
Others	-1.76	1.19	0.14	-4.08	0.57
Education level(ref: High School or below)					
Some College	1.21	0.95	0.20	-0.65	3.08
Bachelor's degree and Higher	1.79	0.99	0.07	-0.15	3.73

40

Experience of elder abuse/neglect(ref: No)					
Yes	-2.75	0.59	**0.00**	-3.90	-1.60
Experience of abuse/neglect in dementia cases (ref: No)					
Yes	0.87	0.45	**0.05**	-0.01	1.74

Table 3. Mixed linear model results for dementia knowledge

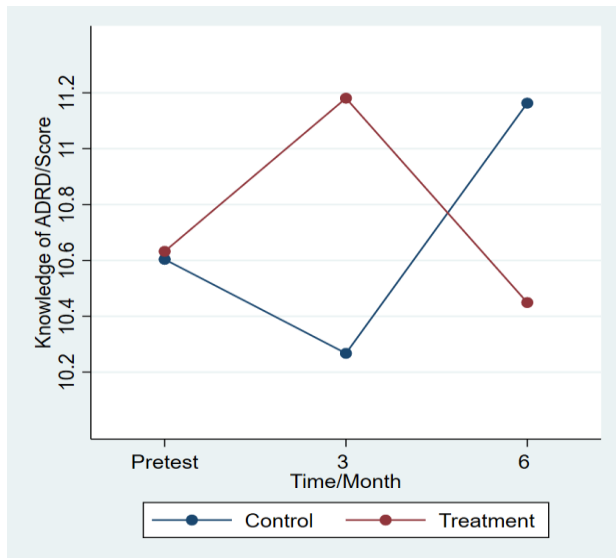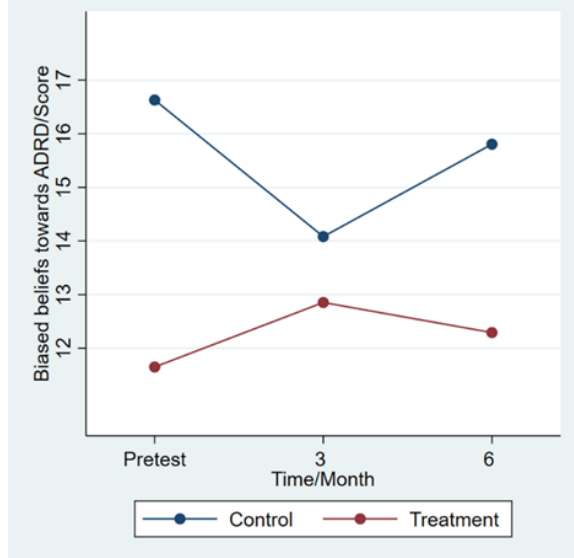| Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time(ref: baseline)					
3 months	-0.34	0.29	0.24	-0.90	0.22
6 months	0.56	0.51	0.27	-0.44	1.56
Group(ref: Control)					
Intervention	0.03	0.31	0.93	-0.59	0.65
TimeXGroup					
3 months #Intervention	0.88	0.40	**0.03***	0.09	1.68
6 months #Intervention	-0.74	0.65	0.25	-2.02	0.53
Gender(ref: Male)					
Female	0.47	0.52	0.36	-0.54	1.48
Age	0.01	0.01	**0.09**	0.00	0.03
Ethnicity(ref: Caucasian)					
African American	-2.79	0.52	**0.00**	-3.82	-1.77
Others	-0.09	0.71	0.90	-1.48	1.30
Education level(ref: High School or Below)					
Some College	0.02	0.60	0.98	-1.16	1.19
Bachelor's degree or Higher	1.15	0.62	**0.07**	-0.07	2.37
Experience of elder abuse/neglect(ref: No)					
Yes	-0.85	0.37	**0.02**	-1.58	-0.13
Experience of abuse/neglect in dementia/MCI cases(ref: No)					
Yes	1.03	0.27	**0.00**	0.49	1.56

Figure 3 Demetia knowledge

Figure 4 Dementia stigma

Table 4. Mixed linear model results for dementia stigma

Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time (ref: baseline)					
3 months	-2.55	0.85	**0.00**	-4.22	-0.87
6 months	-0.82	1.60	0.61	-3.96	2.31
Group (ref: Control)					
Intervention	`	1.26	**0.00**	-7.44	-2.52
TimeXGroup					
3 months #Intervention	3.75	1.21	**0.00**	1.38	6.12
6 months #Intervention	1.47	2.01	0.47	-2.47	5.40
Gender(ref: Male)					
Female	-6.00	2.55	**0.02**	-10.99	-1.00
Age	-0.04	0.04	0.26	-0.12	0.03
Ethnicity(ref: Caucasian)					
African American	3.86	2.36	0.10	-0.76	8.49
Others	-0.81	3.55	0.82	-7.76	6.14
Education level(ref: High School or Below)					

Some College	-4.90	2.70	**0.07**	-10.20	0.40
Bachelor's degree or Higher	-4.89	2.82	**0.08**	-10.41	0.64
Experience of elder abuse/neglect(ref: No)					
Yes	3.02	1.68	**0.07**	-0.27	6.31
Experience of abuse/neglect in dementia/MCI cases(ref: No)					
Yes	-0.36	1.28	0.78	-2.87	2.16

Table 5. Mixed linear model results for tolerance attitude toward financial exploitation

| Variables	Coefficient	S.E.	P-value	[95% conf. interval]	
Time(ref: baseline)					
3 months	-0.11	0.44	0.80	-0.98	0.75
6 months	-1.54	0.78	**0.05**	-3.07	0.00
Group(ref: Control)					
Intervention	-1.35	0.48	**0.01**	-2.30	-0.40
Time X Group					
3 months #Intervention	1.35	0.62	**0.03**	0.13	2.57
6 months #Intervention	2.71	1.00	**0.01**	0.75	4.67
Gender(ref: Male)					
Female	0.64	0.79	0.42	-0.92	2.19
Age	-0.04	0.01	**0.00**	-0.07	-0.01
Ethnicity(ref: Caucasian)					
African American	5.02	0.80	**0.00**	3.44	6.59
Others	5.24	1.09	**0.00**	3.11	7.37
Education level(ref: High School and Lower)					
Some College	0.61	0.92	0.51	-1.19	2.42
Bachelor's degree and Higher	1.06	0.96	0.27	-0.82	2.93
Experience of elder abuse/neglect(ref: No)					
Yes	1.45	0.57	**0.01**	0.34	2.56
Experience of abuse/neglect in dementia/MCI cases(ref: No)					
Yes	-0.47	0.42	0.26	-1.30	0.36
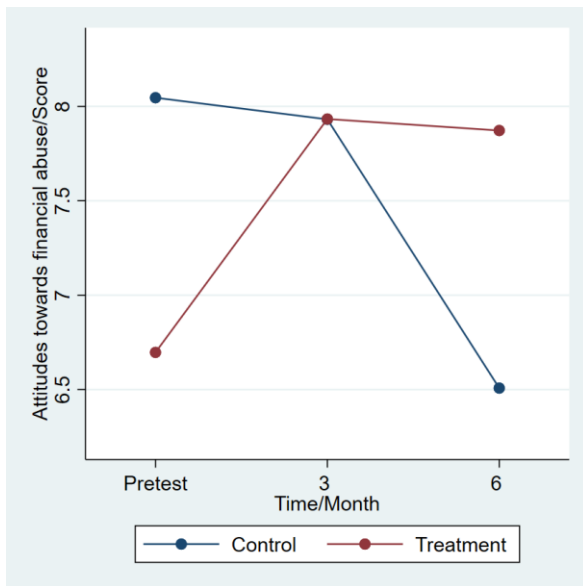
Figure 5. Tolerance attitude towards financial exploitation

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