



Predictors of live-in migrant caregiver employment for people with dementia in Taiwan

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Abstract

Background: With the increasing number of individuals with dementia, families have hired an increasing number of live-in migrant caregivers (LIMCs). Currently, limited evidence is available regarding the influence of long-term care resource utilization on the hiring of LIMCs for caring for individuals with dementia in Taiwan.

Methods: We recruited individuals with dementia who did not hire LIMCs and their primary family caregivers from nine hospitals in Taiwan as baseline. Multivariable logistic regression was used to evaluate the utilization of long-term care resources for individuals with dementia and other factors that may affect the decision to hire LIMCs.

Results: The users of non-long-term care resources had the highest likelihood of hiring LIMCs (odds ratio [OR] = 4.24, 95% CI, 2.30-7.84). Compared with spouses, nonimmediate family caregivers (OR = 3.40, 95% CI, 1.16-9.90) were significantly more likely to hire LIMCs. A higher likelihood of hiring LIMCs was observed for those with Lewy body dementia compared with other individuals (OR = 2.31, 95% CI, 1.03-5.14). Compared with individuals who did not hire LIMCs, those who hired LIMCs exhibited higher scores on the Neuropsychiatric Inventory (NPI) and higher severity of individual NPI items.

Conclusion: Hiring LIMCs is strongly correlated with the utilization of non-long-term care resources and is influenced by the dynamics between individuals with dementia and their primary family caregivers. A higher likelihood of hiring LIMCs was observed for individuals with Lewy body dementia and individuals with elevated NPI scores compared with their counterparts. Given these observations, various support strategies and interventions should be tailored to the specific requirements of individuals with dementia and their families.

Keywords: Dementia; Lewy body dementia; Long-term care

1. INTRODUCTION

Dementia has adverse effects on various cognitive functions, such as learning, memory, complex attention, executive functioning,

perceptual and motor skills, and social cognition.¹ Cognitive impairments, difficulties in activities of daily living (ADLs), and neuropsychiatric symptoms (NPSs) contribute to the increasing responsibilities placed on caregivers and the subsequent increase in societal costs. Individuals with dementia require approximately 171 hours of care every month compared with 100 hours for individuals without dementia.² In individuals with dementia, particularly those with Lewy body dementia, NPSs lead to substantial increases in their functional impairments, thus placing an additional substantial burden on their families.³⁻⁵

In Asia, the obligation to care for individuals with dementia usually falls on their primary family members. In Taiwanese culture, family involvement is emphasized in elderly care, which encourages the involvement of even family members without a medical or nursing background in elderly care as an integral aspect of family life.⁶ Extensive caregiving often compels primary family caregivers to take leaves from work, to switch

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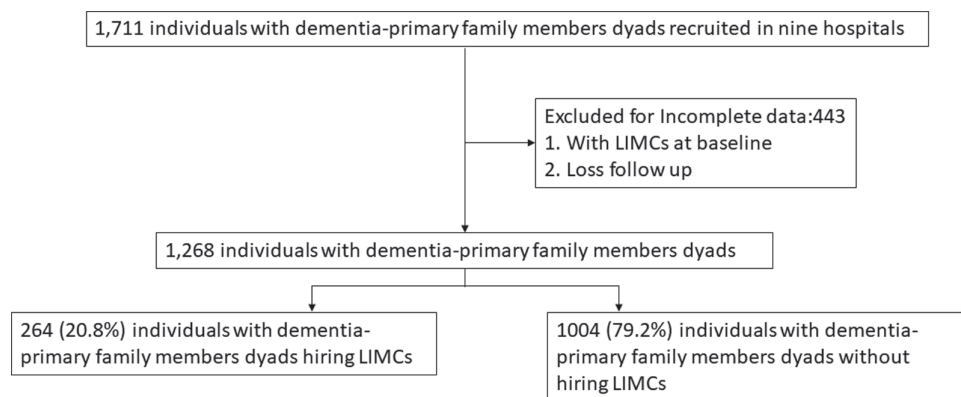


Fig. 1 Flowchart of participant enrollment. LIMC = live-in migrant caregiver.

to less demanding careers, or to quit their jobs altogether.⁷⁻⁹ However, both the modernization and the evolving landscape of traditional values in Taiwan have gradually reshaped the role of family as the sole provider of support.¹⁰ Given the increasing prevalence of dementia in Taiwan, the demand for care solutions has increased, primarily including the hiring of live-in migrant caregivers (LIMCs). These LIMCs provide valuable assistance, which may have positive effects on both the emotional and physical aspects of caregiving.¹¹⁻¹³

In response to the aforementioned shifting dynamics and in accordance to the 1992 Employment Service Act, the Taiwanese government has introduced LIMCs as a vital resource for enhancing home-based care and postponing the institutionalization of older individuals, including those with dementia. This phenomenon is not exclusive to Western societies and is notably observed in multiple Asian countries such as Singapore and Hong Kong. Overall, identifying the characteristics that may influence the hiring of LIMCs for the provision of dementia care may provide further insights into who can benefit from this form of care marketization. A previous study conducted in Italy indicated that both care allowance availability and educational level were independently associated with the hiring of LIMCs for caring for individuals with dementia.¹⁴ Another study conducted in Singapore revealed that factors such as household income, housing type, educational level, and time spent caregiving were predictive of hiring LIMCs at home for eldercare.¹⁵ To the best of our knowledge, no study has investigated whether the utilization of long-term care (LTC) services affects the decision to hire LIMCs.

In 2006, the Taiwanese government implemented the LTC policy to address the increasing demand for community care. In 2017, this policy was extended to include individuals with dementia who were aged 50 years and more. Among the resources provided by the LTC policy for individuals with dementia are daycare (offering structured support and engaging activities for individuals living with dementia during daytime hours), group homes (providing a specialized residential setting for individuals living with dementia), nursing homes (providing facilities specifically designed to offer comprehensive and specialized care for individuals living with dementia in order to address their cognitive and physical requirements), and in-home care (assisting individuals with dementia with their basic ADLs). Nevertheless, the government determines the eligibility for hiring LIMCs on the basis of the applicant's age, ability to perform ADLs, and level of dementia, and it does not consider LTC resource users, Neuropsychiatric Inventory (NPI) scores, or dementia subtypes in the assessment process. Therefore, a gap may exist between the criteria used in these eligibility assessments and the comprehensive support that families require when hiring LIMCs.

In this study, we investigated whether the utilization of LTC resources and other factors influence the decision of hiring LIMCs for individuals living with dementia in Taiwan. Our study results may provide valuable insights into the development of more effective LIMC policies and strategic plans as well as optimized care for individuals with dementia.

2. METHODS

2.1. Data sources and study participants

This study is a subproject of the National Dementia Registry Study (T-NDRS), which was conducted by the National Health Research Institutes of Taiwan and involved data collection from 2017 to 2019.¹⁶ The T-NDRS was conducted at nine hospitals distributed across Taiwan: three in northern Taiwan, two in central Taiwan, and four in southern Taiwan. The inclusion criterion for individuals with dementia was individuals aged 50 to 90 years with a Clinical Dementia Rating (CDR) score of 0.5 or higher, denoting very mild dementia to severe dementia. Individuals with dementia were required to have their primary family caregivers present during the interviews and during their annual follow-up visits. A primary family caregiver was defined as an individual who remained in contact with an individual with dementia for at least 10 hours a week and accompanied them during their annual follow-up visits. An LIMC was defined as an individual who arrived from another country and provided care and support services to older, disabled, or dependent individuals in their homes. Individuals with dementia were excluded from the study if they had any central nervous system disease other than dementia, any type of psychosis unrelated to dementia, any alcohol use disorder, any type of hepatic encephalopathy, or any other major clinical disease that may adversely affect their safety or their candidacy for participation (Fig. 1).

2.2. Ethical approval

All individuals with dementia and their primary family caregivers provided written informed consent before being interviewed, with explanations of annual follow-up procedures explicitly outlined in their baseline consent forms.

2.3. Dementia diagnosis

Both neurologists and psychiatrists diagnosed dementia according to the *Fifth Edition Diagnostic and Statistical Manual of Mental Disorders* criteria for major neurocognitive disorders.¹⁷ The subtype of dementia was determined in accordance with the following criteria: (1) the

National Institute on Aging/Alzheimer's Association criteria for Alzheimer's disease,¹⁸ (2) the National Institute of Neurological Disorders and Stroke/Association Internationale pour la Recherche et l'Enseignement en Neurosciences criteria for vascular dementia,¹⁹ (3) the Lund-Manchester criteria for frontotemporal dementia (FTD),²⁰ (4) the 2015 International Dementia with Lewy bodies conference criteria for dementia with Lewy bodies,²¹ and (5) the Movement Disorders Society criteria for dementia due to Parkinson disease.²² Lewy body dementia includes dementia with Lewy body and Parkinson disease with dementia.

2.4. Study procedure

In the T-NDRS, baseline information including demographics and cognitive status was collected, along with changes in cognitive and functional status, from individuals with dementia, as well as the caregiver burden. As a part of the clinical diagnostic process, all individuals with dementia underwent neuropsychological assessments, physical and neurological evaluations, laboratory tests (complete blood count, serum folic acid and vitamin B₁₂ levels, thyroid hormone levels, serology for syphilis, and routine biochemical tests), and neuroimaging examinations (computed tomography and magnetic resonance imaging). Among the LTC resources provided for individuals with dementia were daycare, group homes, nursing homes, and in-home care. Different care services were combined because they were not mutually exclusive. Dyads of individuals with dementia who never hired LIMCs and their primary family caregivers were included in the study. Demographic information, including age, gender, and educational level, was collected at baseline from individuals with dementia and their primary family caregivers. Monthly household income was divided into three categories: <NT\$30 000, NT\$30 000 to NT\$100 000, and >NT\$100 000. The following physician-diagnosed conditions were included as comorbid diseases: hypertension, diabetes, dyslipidemia, cardiovascular disease, and cerebrovascular disease.

2.5. Neuropsychological assessments

The cognitive status of individuals with dementia was systematically evaluated using the Mini-Mental State Examination (MMSE), and the severity of dementia was evaluated using the CDR scale.

2.5.1. Mini-Mental State Examination

The MMSE is a widely recognized 30-point questionnaire designed to evaluate cognitive functioning across various domains, including attention, orientation, memory, registration, recall, calculation, language, and visual and spatial skills.²³

2.5.2. Clinical Dementia Rating

The CDR scale provides a comprehensive evaluation of cognitive performance in six key domains: memory, orientation, judgment and problem-solving, community affairs, home and hobbies, and personal care. The severity of dementia is quantified on a numerical scale with endpoints ranging from 0 to 3.²⁴

2.5.3. Zarit Burden Interview

To examine the burden on the caregivers of individuals with disabilities, we used the Zarit Burden Interview (ZBI).²⁵ The ZBI comprises 22 items pertaining to various aspects of caregivers, including their emotional state, psychological health, well-being, social and family relationships, and financial situation. Responses are recorded on a five-point Likert scale with endpoints ranging from 0 (low burden) to 88 (high burden).

2.5.4. NPI Questionnaire

The NPI Questionnaire examines 12 subdomains of behavioral functioning, namely delusions, hallucinations, agitation or aggression, dysphoria, anxiety, euphoria, apathy, disinhibition, irritability or lability, aberrant motor activity, nighttime behavioral disturbances, and appetite and eating abnormalities. The severity of NPIs is scored on a three-point scale with endpoints of 1 (mild), 2 (moderate), and 3 (severe).²⁶

2.5.5. Physical Self-Maintenance Scale

In this study, we used the Physical Self-Maintenance Scale to evaluate the daily activities of individuals with dementia. This scale encompasses six essential activities, namely toileting, feeding, dressing, grooming, locomotion, and bathing. A higher score indicates a lower degree of functional independence.²⁷

2.6. Confounding factors

We conducted multivariate logistic regression analysis including demographic factors (age, gender, and educational level), relationship status, income level, living arrangements, characteristics of individuals with dementia (dementia type, dementia severity, ADL level, NPI severity, number of comorbidities, alcohol consumption, and smoking habits), and ZBI score as confounding variables.

2.7. Statistical analysis

Data were summarized using descriptive statistics and are presented either as means with corresponding standard deviations or as proportions. Student's *t* tests and chi-squared tests were used to compare individuals with dementia who hired LIMCs and individuals with dementia who did not hire LIMCs. A multivariate logistic regression model was used to examine the factors associated with the decision to hire LIMCs. This model yielded odds ratios (ORs) with 95% CIs. Multivariable logistic regression analysis with backward selection was conducted to determine the factors influencing the decision to hire LIMCs. In the first model, hiring LIMCs was used as the dependent variable, and LTC resource utilization and various confounding factors were used as the independent variables. These confounding factors included the age of individuals with dementia, the ADL level of individuals with dementia, the diagnosis of individuals with dementia, the relationship between individuals with dementia and their primary family caregiver, the co-residence status of individuals with dementia, the age of the primary family caregiver, the educational level of the primary family caregiver, the monthly household income, and the total NPI score. The second model was used to investigate whether the identified factors and individual items within the NPI were associated with changes in the hiring patterns of LIMCs. The results of laboratory tests and neuroimaging examinations were not included in this analysis. All statistical analyses were conducted using IBM SPSS Statistics version 21.0 (IBM; Armonk, NY) and were two-tailed. *p* values < 0.05 were considered statistically significant.

3. RESULTS

A total of 1268 dyads of individuals with dementia and primary family caregivers completed the survey and the ratio of LIMC hired within 1 year was 20.8% (*n* = 264). Table 1 provides an overview of the demographic characteristics and cognitive and physical status of individuals with dementia and their primary family caregivers. In the group that hired LIMCs, the average age was 82.8 ± 5.9 years, whereas the average age was 77.9 ± 8.2 years in the group that did not hire LIMCs. In the two groups, the majority of primary family caregivers were children of

Table 1
Demographics and clinical characteristics of individuals with dementia (n = 1268) and their primary family caregivers

	Hiring LIMCs (n = 264)	Not hiring LIMCs (n = 1004)	p
	Mean (SD)/n (%)	Mean (SD)/n (%)	
Patient_age	82.83 (5.90)	77.92 (8.20)	<0.001
Patient_sex, female	180 (68.2%)	589 (58.7%)	0.006
Patient_education, y	6.99 (5.22)	7.24 (4.88)	0.483
Primary family caregivers_age	57.50 (11.74)	56.95 (12.71)	0.505
Primary family caregivers_sex, male	171 (64.8%)	641 (63.8%)	0.829
Primary family caregivers_education, y	13.55 (3.66)	12.67 (3.90)	0.001
Relationship			<0.001
Spouse	45 (17.0%)	300 (29.8%)	
Children	166 (62.9%)	591 (58.9%)	
Others	53 (20.1%)	113 (11.3%)	
Living alone	107 (40.5%)	269 (26.8%)	<0.001
Family monthly income			<0.001
<NT\$30 000	50 (18.9%)	294 (29.3%)	
NT\$30 000-NT\$100 000	162 (61.4%)	589 (58.7%)	
>NT\$100 000	52 (19.7%)	121 (12.0%)	
Nonutilization of long-term care	26 (9.8%)	210 (20.9%)	<0.001
MMSE	13.26 (6.83)	16.12 (6.90)	<0.001
CDR	1.72 (0.78)	1.23 (0.73)	<0.001
ADL	10.24 (6.38)	4.29 (5.45)	<0.001
Drinking, yes	3 (1.1%)	23 (2.3%)	0.330
Smoking, yes	9 (3.4%)	63 (6.3%)	0.098
ZBI score	31.11 (15.40)	29.66 (16.01)	0.200
Number of comorbidities	1.53 (1.21)	1.53 (1.21)	0.950
Dementia subtype			
Alzheimer disease	185 (70.1%)	710 (70.7%)	0.879
Vascular dementia	31 (11.7%)	122 (12.2%)	0.916
DLB and PDD	28 (10.6%)	69 (6.9%)	0.042
FTD	2 (0.8%)	18 (1.8%)	0.402
Others or unknown	18 (6.8%)	85 (8.4%)	0.448

ADL = activities of daily living; CDR = Clinical Dementia Rating; DLB = Dementia with Lewy body; FTD = frontotemporal dementia; LIMCs = live-in migrant caregiver; MMSE = Mini-Mental State Examination; NT\$ = new Taiwan dollar; PDD = Parkinson disease with dementia; ZBI = Zarit Burden Interview.

individuals with dementia (62.9% of whom hired LIMCs and 58.9% of whom did not hire LIMCs, Table 1).

Compared with individuals with dementia who did not hire LIMCs, those who hired LIMCs exhibited higher NPI scores (mean [M] = 7.90, SD = 7.84; $p < 0.001$), with significant differences observed for all 12 NPI subdomains. These subdomains were delusions ($M = 0.80$, SD = 1.06; $p < 0.001$), hallucinations ($M = 0.61$, SD = 0.98; $p < 0.001$), agitation ($M = 0.78$, SD = 1.01; $p < 0.001$), depression ($M = 0.83$, SD = 1.01; $p < 0.001$), anxiety ($M = 0.73$, SD = 1.01; $p < 0.001$), euphoria ($M = 0.21$, SD = 0.55; $p = 0.007$), apathy ($M = 0.96$, SD = 1.11; $p < 0.001$), irritability ($M = 0.58$, SD = 0.97; $p < 0.001$), disinhibition ($M = 0.73$, SD = 1.01; $p = 0.006$), aberrant motor behavior ($M = 0.65$, SD = 1.02; $p = 0.004$), sleep and nighttime behavioral changes ($M = 0.86$, SD = 1.10; $p < 0.001$), and appetite ($M = 0.50$, SD = 0.91; $p = 0.029$) (Table 2).

Multivariate logistic regression analysis revealed several significant factors associated with the hiring of LIMCs for caring for individuals with dementia (Table 3). Among all individuals, nonusers of LTC resources were the most likely to hire LIMCs (OR = 4.24, 95% CI, 2.30-7.84). Compared with spouses, non-immediate family caregivers were more likely to hire LIMCs (OR = 3.40, 95% CI, 1.16-9.90). Living alone (OR = 2.80, 95% CI, 1.72-4.56) was significantly associated with hiring LIMCs for caring for individuals with dementia. Compared with lower monthly income (<NT\$30 000), higher monthly income (>NT\$100 000) was significantly associated with a higher

likelihood of hiring LIMCs (OR = 2.66, 95% CI, 1.31-5.40). Other significant factors were a diagnosis of Lewy body dementia (OR = 2.31, 95% CI, 1.03-5.14), higher depression severity (OR = 1.41, 95% CI, 1.12-1.78), higher degree of ADL dysfunction (OR = 1.17, 95% CI, 1.12-1.21), older age of individuals with dementia (OR = 1.09, 95% CI, 1.04-1.13), and higher educational level of primary family caregivers (OR = 1.09, 95% CI, 1.01-1.18; Table 3).

4. DISCUSSION

In Taiwan, hiring LIMCs constitutes a pivotal element in the care of individuals with dementia. In this study, we discovered that hiring LIMCs was significantly associated with the nonutilization of LTC resources, as indicated by an OR of 4.24. According to previous research, utilizing health-care services is positively correlated with the availability of support and knowledge of the available services.^{28,29} In addition, the characteristics of primary family caregivers influence the decision to utilize LTC resources.^{30,31} LTC resources are primarily distributed passively through the medical domain, as opposed to foreign intermediaries that actively engage in advertising and marketing.³² Moreover, the provision of LTC resources often lacks flexibility in terms of timing and spatial arrangements, thus prohibiting immediate adjustments for changing conditions. Although home health care is an LTC resource that can be utilized at home, it is more suited for individuals with mild

Table 2**Comparison of NPI items of individuals with dementia who hired and did not hire LIMCs**

	Hiring LIMCs	Not hiring LIMCs	<i>p</i>
	Mean (SD)	Mean (SD)	
NPI severity_delusion	0.80 (1.06)	0.52 (0.88)	<0.001
NPI severity_hallucination	0.61 (0.98)	0.35 (0.76)	<0.001
NPI severity_agitation	0.78 (1.01)	0.49 (0.84)	<0.001
NPI severity_depression	0.83 (1.01)	0.48 (0.82)	<0.001
NPI severity_anxiety	0.73 (1.01)	0.44 (0.79)	<0.001
NPI severity_euphoria	0.21 (0.55)	0.11 (0.41)	0.007
NPI severity_apathy	0.96 (1.11)	0.62 (0.94)	<0.001
NPI severity_irritability	0.58 (0.97)	0.33 (0.74)	<0.001
NPI severity_disinhibition	0.73 (1.01)	0.53 (0.88)	0.006
NPI severity_aberrant	0.65 (1.02)	0.44 (0.83)	0.004
NPI severity_sleep/nighttime behavior change	0.86 (1.10)	0.58 (0.96)	<0.001
NPI severity_appetite	0.50 (0.91)	0.36 (0.75)	0.029
NPI_severity_total score	7.90 (7.84)	5.08 (5.74)	<0.001

LIMC = live-in migrant caregiver; NPI = Neuropsychiatric Inventory.

Table 3**Multivariable logistic regression analysis of risk factors for hiring LIMCs**

	Model 1		Model 2	
	OR (95% CI)	<i>p</i>	OR (95% CI)	<i>p</i>
Patient's age	1.08 (1.04-1.12)	<0.001	1.09 (1.04-1.13)	<0.001
Primary family caregiver's age	1.03 (0.99-1.06)	0.083	1.03 (0.99-1.06)	0.087
Primary family caregiver's education	1.08 (1.00-1.16)	0.036	1.09 (1.01-1.18)	0.020
ADLs	1.16 (1.12-1.21)	<0.001	1.17 (1.12-1.21)	<0.001
Diagnosis: DLB/PDD	2.24 (1.00-5.01)	0.049	2.31 (1.03-5.14)	0.041
Relationship		0.043		0.024
Spouse	Reference		Reference	
Children	1.52 (0.62-3.75)	0.358	1.53 (0.62-3.79)	0.359
Others	3.14 (1.08-9.13)	0.035	3.40 (1.16-9.90)	0.025
Living alone	2.92 (1.81-4.72)	<0.001	2.80 (1.72-4.56)	<0.001
Family monthly income		0.027		0.023
<NT\$30 000	Reference		Reference	
NT\$30 000-NT\$100 000	1.68 (0.99-2.85)	0.054	1.71 (1.00-2.90)	0.049
>NT\$100 000	2.58 (1.28-5.20)	0.008	2.66 (1.31-5.40)	0.007
Nonutilization of long-term care	4.18 (2.30-7.60)	<0.001	4.24 (2.30-7.84)	<0.001
Total NPI score	1.04 (1.01-1.07)	0.020		
NPI depression_severity			1.41 (1.12-1.78)	<0.001

ADL = activities of daily living; DLB = Dementia with Lewy body; LIMC = live-in migrant caregiver; NPI = Neuropsychiatric Inventory; NT\$ = new Taiwan dollar; OR = odds ratio; PDD = Parkinson disease with dementia.

to moderate dementia.³² Currently, given the potential inadequacy of the available LTC resources, the demand for hiring LIMCs will continue, emphasizing the shortage in dementia care resources.

Overall, the decision to hire LIMCs for dementia care is substantially influenced by the relationships between individuals with dementia and their primary family caregivers. Close-knit relationships, which are often observed among spouses and adult children, may cause family caregivers to provide hands-on care, dressing assistance, and financial support themselves. Regardless of the challenges and time required for dementia care, many families report positive experiences, including personal growth and achievement, reconnection with loved ones, and a sense of fulfillment.^{33,34} Such commitment to providing care within the family unit may deter spouses and adult children from seeking external assistance, as such assistance may be perceived as relinquishing control or failing in filial duties.³⁵ By contrast, nonimmediate family caregivers, who

presumably lack the capacity for direct caregiving, are more inclined to hire LIMCs, thus highlighting potential caregiver shortages.

Overall, this study revealed a positive correlation between the NPI score and the increased likelihood of hiring LIMCs for caring for individuals with dementia, with depression severity exerting the most significant effect. In individuals with dementia, the symptoms of depression are linked to negative health outcomes and are associated with increased distress, burden, and depression among primary family caregivers.³⁶ Nevertheless, this correlation is not observed among LIMCs.³⁷ LIMCs presumably play a collaborative caregiving role within the families of individuals with dementia, effectively mitigating depression symptoms and alleviating caregiver stress.^{7,12} Families of individuals with Lewy body dementia are more likely to hire LIMCs than families of individuals with other types of dementia. This observation is consistent with previous research findings suggesting that individuals with Lewy body dementia experience

difficulties from their substantial behavioral and psychological symptoms, thus resulting in the higher loss of independence and greater functional impairment.^{4,38} These findings are in line with previous research findings highlighting the crucial role of LIMCs in addressing caregiving requirements, which also suggests that individuals with dementia have a greater need for hiring LIMCs.

In contrast to our findings, which indicate that the nonutilization of LTC resources and nonimmediate family members being caregivers predict hiring LIMCs, a previous study conducted in Singapore indicated that caregiving and LTC resource utilization among adult children served as predictive factors of eldercare.¹⁵ These contrasting findings may be attributable to variations in government policy approaches toward LIMCs. Although the Taiwanese government emphasizes a supplementary role of LIMCs, the LIMC policy of Singapore primarily focuses on substitution. Although the two countries rely on LIMCs for dementia care, their policy trajectories differ in certain aspects. These distinct preferences among specific demographic groups offer valuable insights into dementia care and policy. Understanding such unique requirements may enable governments to provide targeted and effective support, ultimately alleviating the caregiver burden and optimizing resource allocation. These insights may inform policy adjustments and aid in the introduction of more comprehensive caregiving solutions, thus enhancing the overall quality of care for individuals with dementia and alleviating caregiver stress in their families. In essence, the inclination of certain groups toward hiring LIMCs has profound implications for dementia care and policy, which are pivotal for future caregiving advancements.

This study has some limitations. First, in certain families, multiple family members may alternately provide care for individuals with dementia, thus potentially introducing bias to the identified factors. Therefore, further research is required to determine how such caregiving arrangements influence the decision of hiring LIMCs. Second, the sample sizes of certain dementia subgroups, such as those with Lewy body dementia and FTD, were small, thus potentially affecting the statistical power of the study results. Third, various factors, such as culture, caregiver support for dementia, and quality of care, may influence the decision of family caregivers to hire LIMCs,³⁹ thus warranting further investigation. Lastly, because the majority of the participating institutions were medical facilities, our findings may not be generalizable to the entire population, particularly to those seeking care in community clinics and those not seeking formal medical assistance. Future research should consider these factors to provide more comprehensive insights into the effect of hiring LIMCs on dementia care.

In conclusion, this study revealed that hiring LIMCs is correlated with the nonutilization of LTC resources, indicating that the current LTC resources may not adequately meet the diverse requirements of families affected by dementia. The decision to hire LIMCs is strongly influenced by the relationship between individuals with dementia and their primary family caregivers. Compared with other individuals, those with Lewy body dementia and NPSs are more likely to hire LIMCs. Given the scarcity of available care resources, the government must extend its support to families considering hiring LIMCs, whereas simultaneously providing supplementary assistance. Overall, this study results provide valuable insights into future policy adjustments aimed at the utilization of LIMC services, which can effectively address the unique requirements of individuals with dementia and their families in the Taiwanese healthcare context. Our findings indicate the need for a more nuanced approach to dementia care, namely one that is responsive to the multifaceted requirements of both individuals with dementia and their caregiving families.

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