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Utilize the ICOPE Scale to Analyze the Difference Effectiveness of Preventing Frailty Program for Elder between Urban and Rural Regions

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Abstract:- Taiwan will become super-aged society in 2025, and the average life expectancy is 79.84 years (it's higher than the average life expectancy of 6.54years) in 2021. It shows the elders have positive cognition of prevent and delay frailty by themselves in their living motivation in Taiwan. On the other hand, it might be the Ministry of Health and Welfare (MOHW) promoted "the program of prevent and delay disability/ dementia" from 2017 until now. This program subsidy by the MOHW, one program 3 months a cycle, once a week for 2hours, and implement the ICOPE for pre-testing and post-testing to find out the different effectiveness in 6 domains (including Cognitive Decline, Limited Mobility, Malnutrition, Visual impairment, Hearing loss, Depressive symptoms). This research aims to 151 elder each living in urban and rural areas who participated in the same health promotion program for a cycle in target county. And use the experimental method to examine the impact of the difference in ICOPE pre-test and post-test results on the cognition of happiness between these two areas. Finally, it utilizes the research finding to improve or enhance the physical, mental and spiritual benefits of program participation.

Keywords*: Frailty, ICOPE, Community Care Centers.*

1. Introduction

Numerous physiological changes occur with increasing age, and for older people the risks of experiencing declines in physical and mental capacities increase. These declines often progress and manifest themselves as visual impairment, hearing loss, cognitive decline, malnutrition, mobility loss, depressive symptoms, urinary incontinence and falls.

In 2008, the population exceeded 23 million, but in the past 10 years, the population has gradually increased to 23.6 million 3,121 at the end of 2019, reaching a peak in the total population, and then has continued to decline. In this horizontal axis of time, it will enter an aging society (the elderly population will exceed 14% of the total population) in 2018, and the domestic birth rate and mortality curve will cross (representing that the mortality rate will begin to be greater than the birth rate after 2020) in 2020, and the population will turn into a natural decline and enter an era of negative population growth in Taiwan. The National Development Council predicts that the elderly population will exceed 4.7 million in 2025, accounting for 20.1% of the total population (MOHW, 2023).

With the rapid aging population and the continuous extension of the average life expectancy, the rapid increase number of disabled and dementia population to result long-term care needs in Taiwan. It promotes the "long-term care 2.0" not only extends the original service items and objects of the 10-year long-term care plan 1.0, but also expands the service targets and projects. The service system will be extended to develop preventive care services, and innovative service plans for the prevention of disability and dementia will be planned and promoted, and a continuous and integrated community overall preventive care model will be established. The Department of

Nursing and Health Care of the MOHW plans to promote the "Prevention and Delayed Disability Care Program", with the frailty elders and the mildly/moderately disabled (intellectual) as the main service objects, and for the risk factors that cause disability (dementia), develop the prevention and delayed disability care program (follow referred to as the “care program”) and train qualified teachers, and plan six preventive care domains based on the case, including Strength-strengthening exercises, life function rebuilding training, social engagement, oral health care, dietary nutrition and cognitive promotion, and develop an integrated-combination care solutions .

Alongside supporting community-level services, the Integrated Care for Older People (ICOPE) approach helps broader health and social care systems effectively respond to the diverse and complex needs of older people. The ICOPE Implementation Framework provides guidance for policy makers and program managers to concretely assess and measure the capacity of services and systems to deliver integrated care at the community level (WHO, 2022). To overcome the weaknesses of the frailty concept and to better disseminate geriatric care to the aging population, the WHO recently proposed a novel model for healthy aging oriented around trajectories of functional ability. Although the functional ability is proposed to be determined by an individual's environmental factors, physical and mental attributes known as intrinsic capacity (IC) and the interaction between these two concepts(Li and Lo, 2022).

Since 2017, the Ministry of Health and Welfare has reviewed and announced the care program for each course module every year, and 235 cases will be reviewed and approved in 2024. In addition, it also subsidizes the "Prevention and Delay of Disability Care Program" of the local governments of 22 counties or cities in Taiwan, and the local governments solicit additional care plan modules to maintain and improve the quality of life of the disabled elderly. These aims to prolong the average life expectancy of health, and achieve the goals of preventing disability, delaying dementia and successful aging through the establishment of a "community" based prevention and delaying disability care service system. For the frailty aging, pay attention to the problem of physical deterioration, add the concept and intervention of a health-promoting lifestyle (self-health management). On the other hand, people with mild to moderate disabilities need to maintain participation in activities that promote health and improve their life activities under guidance to appropriately enhance their functions.

2. Research Design

A. Research Region

With the rapid aging of population structure and the rapid increase number of disabled and dementia populations, the Ministry of Health and Welfare has actively implemented a full range of supporting policies for the needs of long-term care. The Ministry of Health and Welfare has promoted the 10-year plan for long-term care 2.0 since 2017 to achieve the goal of aging in place. The goal of long-term care 2.0 aims to connect with preventive health care, vitality aging, and disability alleviation from the front to end of life. So as to promote the health and well-being of the elderly and improve the quality of life of the elderly. Provide multi-target community-based support services to the back-end, transfer to hospice care at home, reduce the pressure of family care, and reduce the burden of long-term care. In addition to actively promoting the pilot plan of the community-based holistic care model, developing innovative services, building a community-based health care team system, and extending services to services such as discharge preparation services and home medical services (Cameron, Gillespie, Robertson, Murray, Hill, Cumming, and Kerse, 2018).

According to the statistics of the target county Government, target county has a total population of 659,841, of which 135,649 are over 65 years old, accounting for 20.56% of the county's population of the end of 2023. The population over 65 years old in target county increased by 2,147 people (increase 1.61% compared with the same period in 2021). There set 162 Community Care Centers in target county, and 8 cases of the "2023 Ministry of Health and Welfare's Disability Prevention and Mitigation Service Usable Plan" reviewed by the Ministry of Health and Welfare in 2023. In this study, the "Aromatherapy self-care program" was used to analyze the effectiveness of ICOPE among the elderly.

B. Program activity design and target

In order to achieve the purpose of this study, a set of "Aromatherapy self-care programs" approved by the Ministry of Health and Welfare for the frail and mildly disabled elderly is conducted. The program reduces anxiety and depression, improve self-esteem psychologically, and reduce social isolation and enhance social support in the social aspect. The content of this program is designed and implemented regularly to slow down the aging and improve the health status of the elderly, to achieve the goal of preventing disability and delaying dementia.

In this study, we used a 12-week (about 3-months) program design and utilize the ICOPE to evaluate the differences in the “Aromatherapy self-care program” for the frailty elderly (excluding disabled, dementia and bedridden) in target county. This study also focuses on the ICOPE to analyze differences implementation effectiveness in geographical region of "urban" and "rural” in target county.

C. Assessment tools

The National Health Agency (NHA) referenced the WHO published a new version of the Integrated Care Assessment for the Elderly Integrated care for older people (ICOPE) (2019), which proposes assessment tools and care pathways for the six major dimensions of the elderly (Cognitive Decline, Limited Mobility, Malnutrition, Visual impairment, Hearing loss, Depressive symptoms) (table 1). ICOPE promote functional assessment of the elderly, help the elderly to identify the risk factors that may lead to disability as early as possible, and intervene in exercise and nutrition as soon as possible to prevent and delay the occurrence of disability. WHO (2022) has also continued to adjust and refine the application scope and trial results of ICOPE, planning the "phases of the ICOPE piloting program" (Figure 1).

Table 1 six major dimensions of the ICOPE

Domain	Content/question
Cognitive Decline	was determined if participants provided an incorrect response to either of the two questions on orientation in time and space or if they could not recall the three words they were asked to remember.
Limited Mobility	was defined as being unable to complete five chair rises within 14 s
Malnutrition	was defined as weight loss (more than 3 kg over the previous 3 months) or appetite loss.
Visual impairment	was defined as any problems experienced with their eyes, difficulties in seeing far, reading, eye diseases, or currently under medical treatment
Hearing loss	was defined as failing to hear whispers in the whisper test
Depressive symptoms	were defined as the participants being bothered by feeling down, feeling depressed or hopeless, or having little interest or pleasure in doing things over the preceding 2 weeks. The impairment of each item was scored as 0 points.

Resource: WHO (2022)

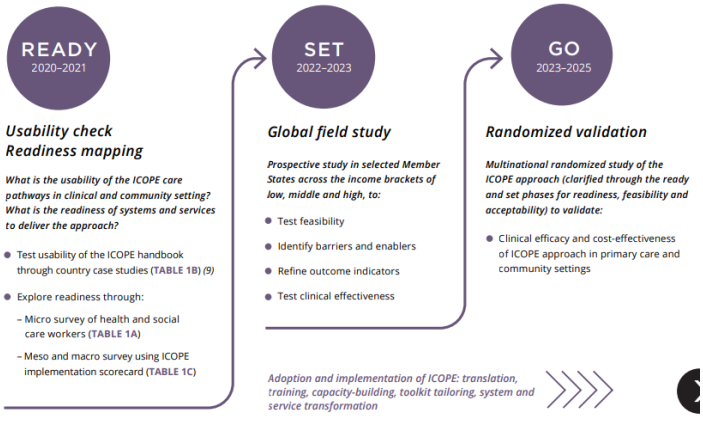

Figure 1 Phases of the ICOPE piloting program

WHO (2022)" KEY OPPORTUNITIES FOR ICOPE IMPLEMENTATION" are: A. Positive attitudes from health and care workers towards the principles of integrated care and high levels of commitment to adopt and implement ICOPE. With appropriate workforce capacity-building and creating enabling service delivery environments, care and service delivery can change； B. Proactive engagement of older people and their communities are crucial across all steps of the ICOPE care pathway. This was highlighted in feedback from both older participants, and health and care workers; C. ICOPE is feasible to implement in different contexts, as shown by case studies from different countries, which also demonstrated the value of local co-design and adaptation to suit local context.

3. Conclusion

A. Finding of Research

This research conducted in the urban 4 regions and rural 4 regions during August to December 2023 in target county, and the descriptive statistical method was used. A total of 151 people was admitted to the frail elderly, with a male-to-female ratio of 27:77, aged between 65 and 81 years, with an average age of 75.92 years and a standard deviation of 9.23 years. 79 in urban areas and 72 in rural areas. There were 111 females (73.5%) and 40 males (26.5%), with a sex ratio of 2.775, 62 (41.1%) in primary school, 57 (37.7%) in middle school, and 32 (21.2%) in high school or above. In the living status, 84 (55.6%) lived with spouses, 21 (13.9%) lived with their children or have family, and 46 (30.5%) lived alone. In addition, the ICOPE scale of the elders in the targeted region was analyzed in Table 2.

Table 2 Static analysis of the ICOPE scale of the elders in the targeted region

region	Cognitive Decline		Limited Mobility		Malnutrition	
	Pre-t	Post-t	Pre-t	Post-t	Pre-t	Post-t
Urban	0.42	0.11*	0.47	0.84*	0.11	0.05*
rural	0.42	0.54	0.54	0.46	0.51	0.68
region	Visual impairment		Hearing loss		Depressive symptoms	
	Pre-t	Post-t	Pre-t	Post-t	Pre-t	Post-t
Urban	0.49	0.32	0.44	0.34	0.39	0.09*
rural	0.49	0.57	0.43	0.36	0.38	0.14*

*P<0.05

The results of the research showed that the Aromatherapy self-care program had a significant improvement in "Depressive symptoms" among frail elders, and "Cognitive Decline", "Limited Mobility", "Malnutrition" and "Depressive symptoms" for older adults in urban areas. However, there was no significant improvement for the frail elderly in rural areas. These finding aims to the traditional Chinese culture, the family members of the elderly in rural areas have the responsibility to take care of the elderly, so most family are still responsible for taking care of the health of the elderly, so the implementation of the Aromatherapy self-care program alone cannot affect the ability of the elders to take care of themselves. In addition, the elders living in urban areas have the concept of independent living, so they are more likely to actually integrate the content of the program into their daily lives, so they are more effective in health responsibilities and physical activity.

B. Conclusion and Suggestion

For people with mild cognitive impairment and frailty, we implement disability relative programs, and provide evidence-based cognitive promotion curriculum module development programs through "cognitive promotion intervention", and carry out cognitive training and cognitive rehabilitation intervention. In addition, for frailty elderly, implement frailty prevention/mitigation programs require not only attention to the problem of physical

deterioration, but also the concept and intervention of a health-promoting lifestyle (self-directed health management) to appropriately improve their functions.

The findings in this report can support governments to recognize the value of responding to the additional resource needs of implementing ICOPE as part of efforts towards universal health coverage. The Visual impairment and hearing loss domains combine as the" Sensory loss "in ICOPE. Because these two domains have the positive relation.

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