Gan-Dau Healthy Longevity Plan: The Community Model for Healthy Aging

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Population aging is a global phenomenon. As one of the fastest aging countries in the world, Taiwan needs health plans with strong supporting evidences to respond to all challenges related to rapid population aging.¹² The health plans should be community-based and person-centered, with optimal integration between all health and social care providers. Gan-Dau is a geographic region of the Beitou District of Taipei City where resides approximately 53,000 inhabitants and the percentage of people aged 65 years and older is over 18% in 2022. The name of Gan-Dau is originated from the aboriginal Taiwanese centuries ago and describes the connection of two rivers. As the name speaks for itself, Gan-Dau has been the wharf for fishermen for hundreds of years, and has transformed into a cluster of high-tech industries, healthcare facilities, educational facilities, and recreational activities nowadays with well-preserved traditional cultures. Currently, Gan-Dau is a community with heterogenous composition of population, social activities, and lifestyles, which is suitable to be the pioneer site for community-based health plans of healthy aging. With the support from Taiwan’s National Health Research Institutes, the Taipei Municipal Gan-Dau Hospital, Taipei Veterans General Hospital, National Yang Ming Chiao Tung University, and industrial partners, Gan-Dau has become the pioneer site for examining the overall effects of implementing serial healthy longevity plans beyond individual clinical trials. Moreover, the Gan-Dau Healthy Longevity Plan actively collaborates with Japan’s National Center for Geriatrics and Gerontology, University of Tokyo, and the Cleveland Clinic of the United States to strengthen regional and global impacts to promote global healthy aging.

In 2020, the World Health Organization (WHO) and United Nations (UN) launched the 10-year global actions to promote healthy aging, which is known as the “UN Decade of Healthy Ageing (2021-2030)”.³ The “Decade of Healthy Ageing” addressed four interconnected areas of actions, including (1) to change how we think, feel and act toward age and ageing, (2) to ensure that communities foster the abilities of older people, (3) to deliver person-centered integrated care and primary health services that are responsive to older people and (4) to provide access to long-term care for older people who need it.⁴ All these areas are embedded in the Gan-Dau Healthy Longevity Plan with necessary adjustments to meet the community needs.
and local healthcare systems. The Gan-Dau Healthy Longevity Plan aims to promote healthy aging and the community livability through the following strategies: (1) developing the integrated care system covering medical, long-term care and preventive services, (2) systematic implementing evidence-based disability/dementia preventive interventions, (3) improving the physical environment for better walkability and safer transportation, (4) enhancing social networking and inter-personal relationships, (5) to support homebound older people with better services and technology, (6) linking the community hospital, communities and homes through smart technology, (7) enhancing age- and dementia-friendly services across all care settings, and (8) promoting international collaboration for comparative studies. These strategies are in line with the “UN Decade of Healthy Ageing” and provide the platform for international comparisons to identify potential implementation barriers, and to share experiences with the world.

The Gan-Dau Healthy Longevity Plan is initiated by the locality-based community hospital, Taipei Municipal Gan-Dau Hospital (TMGDH). The TMGDH was established in 1999 with the clearly defined mission to promote community health, chronic condition management and long-term care. Overall, the hospital owns 112 beds, 67 special beds (dialysis, hospice and palliative care, ventilator-dependent care unit, and others), 50 psychiatry day hospital beds, and 92 nursing home beds which provides various services for chronic condition management. Besides, TMGDH provides home medical and nursing care for homebound individuals with disability, dementia, or developmental disorders. TMGDH also provides evidence-based multidomain interventions for community-dwelling middle-aged and older adults to enhance chronic condition management and disability/dementia prevention. The program is designed based on two previously published studies in Taiwan, i.e., Taiwan Health Promotion Intervention Study for Community-Dwelling Elders (THISCE),5 and Taiwan Integrated Geriatric Care (TIGER) Study.6 THISCE study confirmed the efficacy of multidomain intervention in preventing functional declines, improving depressive moods and ameliorating nutritional status among community-dwelling older adults. The TIGER study further strengthened the efficacy of combined multidomain intervention and integrated primary health care services of clinical benefits in chronic condition management, functional declines prevention and quality of life among older adults with multimorbidity. To effectively implement these multidomain intervention programs, the TMGDH initiated two community centers, i.e., the Gandaouly Academy (Figure 1), together with several affiliated community sites to provide various activities of social networking, educational and recreational activities. TMGDH also initiates a number of new integrated care services in the hospital as the “UN Decade of Healthy Ageing” indicated, including integrated outpatient services for people with multiple comorbid conditions,7 post-acute care services for functional re-ablement after acute conditions,8 dementia-friendly care services to prevent excessive cognitive declines9,10 long-term care services covering home, community, and institutional settings,11 and lifestyle modification for all patients with chronic conditions. The framework of the Gan-Dau Healthy Longevity Plan covers primary, secondary and tertiary prevention for functional declines of physical and mental domains, as well as the social networking and neighborhood environment. All these services follow the framework of WHO’s Integrated Care for Older People (ICOPE) to shift the healthcare systems from disease-centric approaches to function-centric ones, from therapeutic to preventive models, to maximize the healthy life expectancy of community inhabitants.12

In the WHO’s ICOPE framework, smart technology plays a vital role that WHO proposed using mobile technology (mobile Ageing, mAgeing) to measure and monitor intrinsic capacity over time in the communities with or without the assistance of healthcare professionals.13,14 In particular, health and long-term care services in communities or homes usually generate massive data and heterogenous information which need extensive integration with the electric medical records collected in hospitals. Compared to hospitals, community and home care services need feasible and accurate measurements and monitoring across settings to complete the health service continuum. With more information and data input, developing proactive data-driven care plans and timely responses to triggered signals has gained extensive attentions,15 and the best solutions are still evolving. Therefore, the Gan-Dau Healthy Longevity Plan digitally transforms the TMGDH and related community services using cloud storage/computing, artificial intelligence and internet of things (AIoT), mobile technology, and many other approaches to optimize the person-centered care network for this area.16 In the hospital digital infrastructure, TMGDH initiates the construction of new cloud-based health and nursing information systems with the industrial partner, ASUSTeK Computer Inc.; the cloud-based operation would enhance data management, security, computation, and integration with data from hospital, homes, and communities. Meanwhile, TMGDH actively imports various smart medical devices to optimize the care process and improve quality of care and patient experiences, which includes 1) artificial intelligence-aided diagnostic system to detect diabetic retinopathy,17 2) personal computerized tomography/magnetic resonance imaging reconstruction on the 3D and visual reality platform to enhance clinical diagnosis and patient-doctor communication, 3) smart mattress with pressure sensors to prevent falls, pressure injuries,
Furthermore, the WHO’s healthy aging addresses the importance of intrinsic capacity and functional ability that highlights the goals of healthy aging. Hence, the Gan-Dau Healthy Longevity Plan screens for potential declines in intrinsic capacity and functional ability in outpatient, inpatient, post-acute care, long-term care and community settings to arrange appropriate transitions for the personalized care planning. TMGDH actively promotes lifestyle modifications derived from THISCE and TIGER in the communities for inhabitants aged 50 years and older. The Gan-Dau Healthy Longevity Plan aims to create a sustainable ecosystem with seamless integration between health, social and community services using modern technology to maximize the healthy life expectancy of the whole Gan-Dau. With the international comparisons with Japan and the United States, the Gan-Dau Healthy Longevity Plan would contribute experiences to the international communities supporting the promotion of the “UN Decade of Healthy Aging”.

Figure 1. Multidomain intervention activities at the Gandaulogy Academy. (a) Participants performing memory training, (b) Participants showing their work for cognitive training of abstract thinking and executive function, (c) Participants performing resistance training by squats, (d) Gandaulogy Academy located in the community, (e) Participants performing resistance training for core muscle strength
REFERENCES


