

The Development of a Ram Thon Activity to Enhance Balance Ability in the Elderly

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ABSTRACT

This research is part of a larger study titled "Development of Ram Tone Activity Packages to Enhance Balance Ability Among the Elderly at Ban Suthawas Chaloe Phra Kiat, Nakhon Nayok Province." The objectives were to 1) develop Ram Tone activity packages designed to enhance balance in the elderly and 2) analyze specific Ram Tone dance movements that contribute to postural stability. The participants consisted of female elderly individuals aged 60–79 years. The researcher integrated traditional Ram Tone dance forms with physical activity principles through a four-stage development process: 1) a literature review of Ram Tone, physical activity, and muscle strengthening for balance; 2) an assessment of the target group's physical fitness to ensure the activity packages were appropriately aligned with balance enhancement; 3) the design of Ram Tone movements based on expert recommendations; and 4) the validation of research instruments by specialists. The findings indicated that enhancing balance in the elderly should primarily focus on strengthening the lower extremities. Consequently, the researcher developed dance movements emphasizing leg transitions that align with the requirements for muscle strength and endurance. The final product consists of 4 activity packages, each containing 5 distinct movements, totaling 20 movements. The evaluation by experts revealed that all 4 packages achieved an average Item-Objective Congruence (IOC) index of 0.92, representing the highest level of appropriateness. These results suggest that the developed Ram Tone activity packages can be effectively implemented to improve balance ability among the elderly.

Keywords: Ram Thon Activity, Balance ability, The elderly.

INTRODUCTION

Thailand has now entered a complete aged society. In 2024, the elderly population reached 20% of the total population, with the majority being female (57.9%) compared to male (42.1%) (National Statistical Office, 2024). Projections for Thailand's elderly population over the next 20 years indicate that those aged 60 and above will grow at an average rate of 4% per year, while the oldest-old group aged 80 and above is expected to increase at an even higher average rate of 7% per year (Department of Older Persons, 2023). Given the rising elderly population in Thailand, preparing adequate healthcare services for this group has become increasingly important. The Department of Older Persons' 20-Year Plan (2018–2037) outlines a strategy for the promotion and development of older persons, which includes measures to promote health, prevent illness, and strengthen basic self-care

abilities, with the goal of ensuring that the elderly maintain a good quality of life and a secure and sustainable living (Department of Older Persons, 2017).

Health problems among the elderly arise from physiological changes in the body, including a decline in overall bodily functions, reduced muscle strength and flexibility, an increased risk of bone degeneration, and a loss of balance ability (Saksonit, 2019). According to the World Health Organization, 28–35% of adults aged 65 and above experience falls each year, and this figure rises to 32–42% among those aged 70 and above. The risk of falling increases with age, particularly among individuals with muscle weakness or balance problems (Foundation of Thai Gerontology Research and Development Institute, n.d.). Balance impairment is more commonly found in elderly women, as they typically experience menopause, which leads to a decline in estrogen levels. This hormonal change adversely affects hip bone health and muscle condition, as well as the neurological systems responsible for balance control (Ambrose et al., 2013). A preventive approach involves improving balance ability in the elderly through physical therapy or exercise aimed at strengthening the musculoskeletal system, with a particular emphasis on balance-specific skill training (Termvorakul, 2023).

Physical activity involves exercising various muscle groups targeted for training in the elderly, which helps restore strength and improve balance (Somprasert, 2022). Elderly individuals at low risk of balance impairment should aim for moderate-intensity physical activity of 150–300 minutes per week, or vigorous-intensity physical activity of 75–150 minutes per week. It has also been found that elderly individuals receiving balanced treatment typically undergo rehabilitation at hospitals. Once deemed sufficiently recovered, they are often discharged from physical therapy, after which many tend to reduce their physical activity. This can lead to a continuous risk of muscle strength loss, as physical fitness begins to decline within just 2–3 weeks without maintenance exercise (Rince et al., 2024). A review of literature on elderly health promotion by Hwang and Braun (2015) found that research incorporating exercise combined with dance, regardless of style, not only enhances muscle strength and endurance but also promotes the mental well-being of older adults. This aligns with Thai cultural traditions in performing arts, music, singing, and dance, which are distinctive national characteristics. Thai dance involves both codified and choreographed body movements designed to evoke an emotional response in both performers and audiences, fostering a sense of joy, pleasure, and enjoyment (Radakhet, 2022).

Ram Tone is a traditional folk dance that gained widespread popularity during World War II (1941–1945), both in the capital and across provinces in the Central Region of Thailand, including Ayutthaya, Sing Buri, Lopburi, Saraburi, Ang Thong, Chai Nat, Chonburi, Chachoengsao, and Nakhon Nayok. The name 'Ram Tone' derives from the 'Tone,' a traditional drum that serves as the primary instrument for keeping rhythm (Thongkon, 2022). Ram Tone reached its peak popularity during the tenure of Field Marshal Plaek Phibunsongkhram as Prime Minister, who actively promoted it as a national art form. The dance was created as a means of relieving stress, fostering enjoyment, and providing an opportunity for social gatherings. Wangwan (2017) found that Ram Tone folk dance influences participants' thinking and shapes their attitudes through an entertaining medium. The dance subtly guides participants to conduct themselves in accordance with the songs, thereby fostering a sense of cheerfulness that yields benefits in the areas of cognitive development, behavioral practice, and social expression. Ram Tone is characterized as a dance suited to older adults, as its movements are uncomplicated and performed intuitively based on the dancer's existing knowledge and cultural background. The dance is also characterized by continuous stepping movements that can be directed in a variety of ways, such as stepping forward, stepping backward, stepping sideways to the left and right, walking in a circular path, as well as transitioning between sitting and standing postures (S. Wangwan, personal communication, March 11, 2025).

Based on the foregoing review, the researcher recognized the significance of balance impairment among the elderly as a health risk in daily living. The researcher therefore studied Ram Tone folk dance and physical activity principles as a foundation for developing Ram Tone activity packages aimed at enhancing balance ability in older adults. The ultimate goal is to support the elderly — a population that continues to grow in Thailand — in achieving better physical and mental health, enabling them to live with dignity and an improved quality of life.

Research Objectives

To study and analyze Ram Tone activity packages designed to enhance balance ability among the elderly.

Conceptual Framework, Theories, and Related Research

Physical changes in the elderly occur across all functional systems of the body. With regard to the musculoskeletal system, the number and size of muscle fibers decrease while connective tissue progressively replaces muscle tissue, resulting in reduced muscular strength and agility. Enzyme activity within the muscles also declines. In terms of bone tissue, bone cells decrease, leading to a reduction in spinal length and increased vertebral deterioration due to thinning of the intervertebral discs, which in turn causes increased spinal curvature and

postural stooping (Akkhara-phasuchat, 2007). As bone density and the strength of back-supporting muscles decline, bone thinning becomes particularly pronounced in post-menopausal women. Weight-bearing joints, including the knees, hips, and spinal joints, begin to deteriorate. Muscle mass decreases by more than 50%, leading to fatigue and weakness, which in turn compromises balance (Ratchamee, 2022).

Balance is the body's ability to control and maintain its center of gravity in a state of equilibrium, both during static and dynamic conditions, under the influence of gravitational force. This capacity varies among individuals depending on body structure, age, sex, and the base of support. For example, in a standing position, the base of support is defined by the boundary between both feet and the ground (Nhokham, 2013). Information about body movement and the surrounding environment is transmitted to the brain through various sensory systems, namely the somatosensory system, the visual system, and the vestibular system. The brain then processes this information to plan an appropriate response, which is relayed to the musculoskeletal system to produce the movements necessary for maintaining balance. In this process, the trunk, leg, and arm muscles work in coordination to stabilize the body (Prommool, 2019).

Physical activity involves bodily movement produced by the musculoskeletal system that results in energy expenditure, encompassing all forms of movement including daily life activities such as walking, cycling, gardening, and dancing. The recommended level of physical activity varies across different age groups (World Health Organization [WHO], 2010, as cited in Saejiw, 2016).

Ram Tone is a traditional folk dance believed to have originated as far back as the Ayutthaya period, with evidence of its practice having been found in several areas, including Saraburi and Nakhon Ratchasima. Nevertheless, Ram Tone gained widespread popularity during World War II (1941–1945), having emerged as a means of relieving stress and fostering enjoyment among people during wartime. It spread broadly across the capital and various provinces in the Central Region, including Ayutthaya, Sing Buri, Lopburi, Saraburi, Ang Thong, Chai Nat, Chonburi, Chachoengsao, and Nakhon Nayok (Thongkon, 2022). Ram Tone songs are short, concise, and repetition-based, making them easy to memorize. The dance features two types of movements: codified movements with specifically designated forms, and freestyle movements known as 'Khwak Kapi' — a relaxed, improvisational style named after the gesture of scooping shrimp paste (Office of the National Culture Commission, 1994). Both the performance style — encompassing dance movements and song lyrics — may vary according to local context, though some songs remain entirely unchanged. Furthermore, new songs and dance movements can be creatively composed to suit contemporary contexts, without being limited solely to the transmission of historical traditions (Nonsri, 2018).

RESEARCH METHODOLOGY

This study, titled 'Development of Ram Tone Activity Packages to Enhance Balance Ability Among the Elderly,' aimed to study and analyze Ram Tone activity packages designed to promote balance ability in older adults. The researcher conducted the study through the following procedures: population and sample determination, research instrument development, data collection, and data management and analysis.

Research Instruments

In this study, the researcher designed Ram Tone activity packages aimed at enhancing balance ability among the elderly.

Data Collection Methods

1. A review of literature on muscle strength and endurance training, and balance-enhancing exercise for the elderly was conducted, drawing on sub-components and activity examples from documents, journals, books, and both domestic and international research. This was supplemented by interviews with specialists, including experienced elderly care practitioners and physical therapists. Challenges and obstacles were also examined in order to identify precautions and areas to be avoided.

2. Information on Ram Tone was gathered, covering its history and background, songs and accompanying music, and dance movement patterns, drawing from documents, journals, books, and related research, as well as interviews with specialists. This was conducted in order to analyze the distinctive characteristics of Ram Tone that would inform the design of the activity packages.

3. Information on physical activity for the elderly was gathered, encompassing the definition of physical activity, characteristics of physical activity, and planning and formats of physical activity programs for older adults, drawing from documents, journals, books, and related research, as well as interviews with specialists. This was conducted

in order to develop activity packages that are consistent across each activity plan, and to provide greater clarity in defining the structure and details of the Ram Tone activity packages.

Data Analysis Methods

1. Ram Tone movement patterns and physical activity approaches that are consistent with and appropriate for balance-enhancing exercise among the elderly were examined through a review of documents, journals, books, and related research, as well as interviews with specialists, experienced elderly care practitioners, and physical therapists. Challenges and obstacles were also examined in order to identify precautions and areas to be avoided.

2. Ram Tone activity packages were developed by establishing objectives for each activity plan in alignment with the development of sub-components, so as to provide clarity in the construction of activities, the definition of structure, and the details of each package. The packages feature leg muscle exercise movement patterns, designed through the integration of Ram Tone folk dance and physical activity principles, within an appropriate experimental timeframe for the elderly, with the aim of enhancing balance ability among older adults.

3. Ram Tone movement patterns were designed to enhance balance ability among the elderly through a multi-step process. First, information on Ram Tone folk dance and physical activity, including their unique and distinctive characteristics, was reviewed. The researcher then consulted with academic advisors and specialists in rehabilitation medicine and physical therapy, and personally practiced the movements while observing muscle engagement, muscle contraction, and stretching. Subsequently, the dance movements were adapted and applied by considering the appropriateness of each movement within its respective activity package, the alignment of activities with the intended assessment outcomes, and the sequencing of activity steps. The finalized packages were then presented to a panel of qualified experts in rehabilitation medicine, physical therapy, elderly care nursing, and performing arts.

Research Findings

The researcher designed Ram Tone activity packages to enhance balance ability among the elderly. The research findings can be summarized as follows:






1. Information on muscle strength and endurance training, and balance-enhancing exercise for the elderly was reviewed and examined.

2. Ram Tone movement patterns and physical activity approaches that are consistent with and appropriate for balance-enhancing exercise among the elderly were studied.

3. Balance-enhancing exercises were examined and adopted as prototype movements for the design of the Ram Tone activity packages, in accordance with recommendations from qualified experts.

4. The research instruments were validated by relevant specialists. Based on the review, the researcher selected balance-enhancing exercises to be integrated with Ram Tone dance movements, with an emphasis on leg muscle training. Each dance movement was designed to simultaneously strengthen multiple muscle groups, ensuring comprehensive muscle development and alignment with the goal of enhancing balance ability among the elderly. The researcher designed 5 Ram Tone movements per activity package, totaling 4 packages, and presented them to a panel of qualified experts in rehabilitation medicine, physical therapy, elderly care nursing, and performing arts. The results of the first round of activity package design analysis, along with expert recommendations, are summarized as follows.

Table 1: Results of the Movement Appropriateness Analysis of Ram Tone Activity Packages (Round 1)

Activity 1				
				
Movement 1	Movement 2	Movement 3	Movement 4	Movement 5

Activity 2



Movement 1



Movement 2



Movement 3



Movement 4



Movement 5

Activity 3



Movement 1



Movement 2



Movement 3



Movement 4



Movement 5

Activity 4



Movement 1



Movement 2



Movement 3



Movement 4



Movement 5

Source: Pannaray Pramtun (2025)

Based on the first round of Ram Tone movement analysis, the qualified experts provided recommendations for movement revision as follows. When elderly participants are required to lift a leg and stand on one foot, there is a risk of falling; therefore, a support or stabilizing aid should be provided during the movement to prevent falls. Regarding weight shifting, some elderly individuals may not be able to perform the movements fully if they have balance difficulties. The appropriate level of leg lifting ability among elderly participants should also be taken into consideration.

Accordingly, the researcher revised the dance movements in accordance with the expert recommendations by adjusting the foot movement patterns to ensure greater appropriateness, and by preparing four-legged walkers as a stabilizing aid during the activities. The revised materials were then compiled and presented to a panel of qualified experts in rehabilitation medicine, physical therapy, elderly care nursing, and performing arts. The results of the second round of activity package design analysis, along with expert recommendations, are summarized as follows.

Activity Package 1: Ram Tone Grace in Walking Steps

The objectives of this package are to enhance balance ability among the elderly at Ban Suthawas Chaloem Phra Kiat, Nakhon Nayok Province, and to promote the strengthening of the hip, knee, and trunk muscles, body equilibrium, weight shifting, and muscle extension and stretching for improved flexibility. The overall average score for Activity Package 1 is 1.00. This package comprises 5 dance movements, as follows.



Movement 1



Movement 2



Movement 3



Movement 4

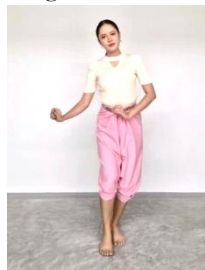


Movement 5

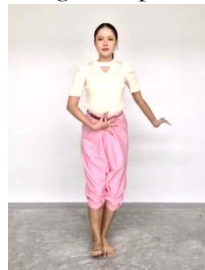
Source: Pannaray Pramtun (2025)

Activity Package 2: Ram Tone Grace in Tap and Place Steps

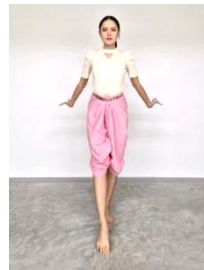
The objectives of this package are to enhance balance ability among the elderly at Ban Suthawas Chaloe Phra Kiat, Nakhon Nayok Province, and to promote the strengthening of the hip, knee, and trunk muscles, as well as muscle extension and stretching for improved flexibility and endurance. The overall average score for Activity Package 2 is 0.96. This package comprises 5 dance movements, as follows.



Movement 1



Movement 2



Movement 3



Movement 4

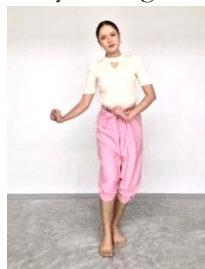


Movement 5

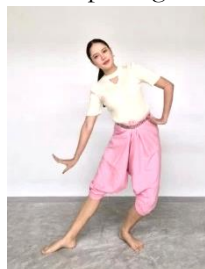
Source: Pannaray Pramtun (2025)

Activity Package 3: Ram Tone Grace in Stretch and Bend Steps

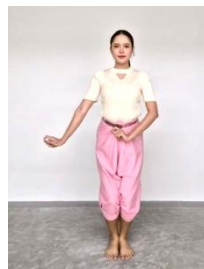
The objectives of this package are to enhance balance ability among the elderly at Ban Suthawas Chaloe Phra Kiat, Nakhon Nayok Province, and to promote muscle strengthening, as well as extension and stretching of the hip, knee, and trunk muscles for improved flexibility, endurance, and core stability. The overall average score for Activity Package 3 is 0.96. This package comprises 5 dance movements, as follows.



Movement 1



Movement 2



Movement 3



Movement 4

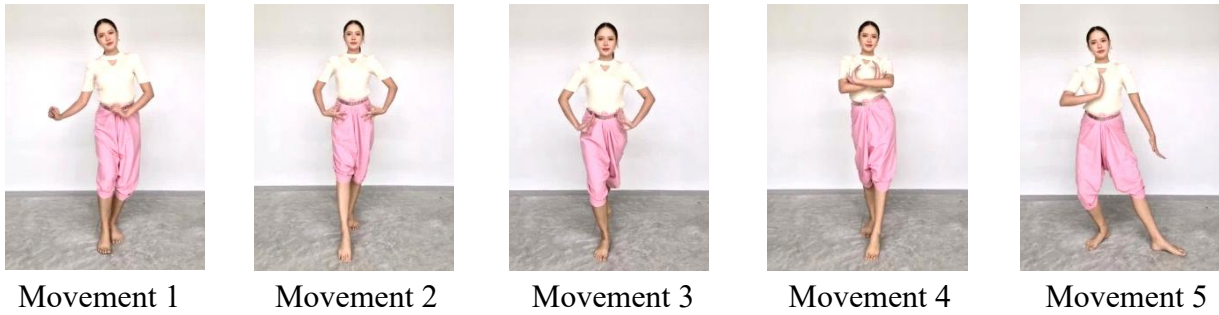


Movement 5

Source: Pannaray Pramtun (2025)

Activity Package 4: Ram Tone Grace in Extension and Lift Steps

The objectives of this package are to enhance balance ability among the elderly at Ban Suthawas Chaloe Phra Kiat, Nakhon Nayok Province, and to promote muscle strengthening, as well as extension and stretching of the hip, knee, and trunk muscles for improved flexibility and bodily equilibrium in balance. The overall average score for Activity Package 4 is 0.92. This package comprises 5 dance movements, as follows.



Source: Pannaray Pramtun (2025)

Table 2: Results of the Movement Appropriateness Analysis of Ram Tone Activity Packages for Enhancing Balance Ability Among the Elderly

Assessment Item	IOC	Interpretation
Activity Package 1: Ram Tone Grace in Walking Steps		
Movement 1	1.00	Congruent
Movement 2	1.00	Congruent
Movement 3	1.00	Congruent
Movement 4	1.00	Congruent
Movement 5	1.00	Congruent
Summary	1.00	Congruent
Activity Package 2: Ram Tone Grace in Tap and Place Steps		
Movement 1	1.00	Congruent
Movement 2	1.00	Congruent
Movement 3	0.80	Congruent
Movement 4	1.00	Congruent
Movement 5	1.00	Congruent
Summary	0.96	Congruent
Activity Package 3: Ram Tone Grace in Stretch and Bend Steps		
Movement 1	1.00	Congruent
Movement 2	0.80	Congruent
Movement 3	1.00	Congruent
Movement 4	1.00	Congruent
Movement 5	1.00	Congruent
Summary	0.96	Congruent
Activity Package 4: Ram Tone Grace in Extension and Lift Steps		
Movement 1	1.00	Congruent
Movement 2	1.00	Congruent
Movement 3	0.80	Congruent

Movement 4	1.00	Congruent
Movement 5	0.80	Congruent
Summary	0.92	Congruent

Source: Pannaray Pramtun (2025)

The researcher presented the Ram Tone activity packages as research instruments to a panel of five qualified experts in rehabilitation medicine, physical therapy, elderly care nursing, and performing arts. Content validity was analyzed using the Item-Objective Congruence (IOC) index, assessing the alignment between the content and objectives of each dance movement within the packages. The experts deemed all packages appropriate. The average IOC scores were 1.00 for Package 1, 0.96 for Package 2, 0.96 for Package 3, and 0.92 for Package 4, yielding an overall average of 0.92 across all four packages. This indicates that the experts considered the Ram Tone activity packages to be highly appropriate for enhancing balance ability among the elderly. The experts additionally recommended that each practice session should prioritize participant safety and injury prevention, that activities should be practiced regularly to achieve the intended research outcomes, that appropriate accompanying music should be provided, and that reinforcement activities should be incorporated to sustain participant engagement and enjoyment throughout the Ram Tone sessions.

Based on the findings, the Ram Tone activity packages for enhancing balance ability among the elderly were successfully developed. The program is conducted over 8 weeks, 3 days per week, totaling 24 sessions of 45 minutes each. Balance ability and leg muscle strength are assessed using the Timed Up and Go Test (TUGT) and the 30-Second Chair Stand Test (30CST) respectively, administered at five time points as follows: 1) pre-activity assessment, 2) assessment after 12 sessions, 3) assessment after 24 sessions, 4) follow-up assessment two weeks post-intervention, and 5) follow-up assessment one month post-intervention. These assessments are conducted to compare outcomes before and after the implementation of the Ram Tone activity packages for enhancing balance ability among the elderly.

DISCUSSION

The researcher selected the traditional folk dance 'Ram Tone' as the primary foundation for developing the activity packages. A study was conducted on Ram Tone, focusing on its unique identity, distinctive movement characteristics, performance styles, and the design of easily memorable dance movements, with the aim of adapting these elements for the development of Ram Tone activity packages tailored for the elderly. This approach also extends the body of knowledge on traditional folk dance into a new and beneficial dimension, which is consistent with Wangwan (2017). This contributes to the development of academic knowledge on Ram Tone folk dance and supports its cultural preservation. The selection of uncomplicated and easily understood movement patterns ensures appropriateness for the target group being developed." "Chansangsri (2023) stated that bodily movement through various dance forms, designed to be easily understood while enhancing the graceful movement of the legs, trunk, arms, and head, constitutes the art of movement and performing arts — an aesthetic experience that brings joy and entertainment. The Ram Tone activity packages were designed with a primary focus on the lower muscle groups from the hips downward, incorporating walking, stepping in place, standing balance, forward stepping, and backward stepping. This promotes flexibility and endurance of the leg muscles, as well as weight shifting to maintain bodily equilibrium during both static and dynamic conditions, which is consistent with Sae-üi (2017), who stated that designing activities aligned with walking-based balance assessment enables the elderly to develop bodily equilibrium, practice controlled leg muscle use, and improve mobility and balance efficiency. Having diverse exercise activities that engage all parts of the body not only contributes to muscle development but also encourages participants to simultaneously engage in cultural arts preservation alongside health promotion (Wongsuwan, 2025)."

Based on the foregoing study, the researcher found that in designing the Ram Tone activity packages to enhance balance ability among the elderly, an analysis of Ram Tone foot movement characteristics was conducted and subsequently developed into activity packages. Expert evaluation revealed that dance movements in each package should avoid poses requiring the elderly to stand on one leg with the other held raised, as this poses a fall risk for those with poor balance. Instead, movements involving continuous lifting and lowering of the leg are more feasible for this population. The height of leg lifts should also be taken into consideration, as elderly participants may only be capable of lifting their legs to a limited degree. For activities performed entirely in a standing position, fall risk should be minimized through the provision of supportive equipment such as walkers and rest chairs. Furthermore, each practice session should prioritize participant safety and muscle injury prevention, activities

should be practiced regularly to achieve the intended research outcomes, and appropriate accompanying music should be incorporated to sustain participant engagement and enjoyment throughout the Ram Tone sessions.

Recommendations

1.The Ram Tone activity package design and activity format should be used as a framework for designing activities to enhance physical fitness and muscle strength in other population groups with similar physical characteristics.

2.The Ram Tone activity packages should be implemented as planned on a continuous basis, in order to examine the outcomes of balance ability development and movement control among the target group.

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