THE EFFECT OF ANGKLUNG (ANG-KA-LUNG) INTERVENTION MODEL FOR IMPROVING THE QUALITY OF LIFE AMONG ELDERLY PEOPLE IN MAUNG DISTRICT, SAMUTPRAKARN PROVINCE, THAILAND.

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ประสิทธิผลของโปรแกรมอังกะลุงเพื่อพัฒนาคุณภาพชีวิตของผู้สูงอายุในอำเภอเมืองจังหวัดสมุทรปราการ ประเทศไทย

นางสาวศุภางค์ วัฒนเสย

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ศุภางค์ วัฒนเสย : ประสิทธิผลของโปรแกรมอังกะลุงเพื่อพัฒนาคุณภาพชีวิตของผู้สูงอายุในอำเภอเมือง จังหวัดสมุทรปราการ ประเทศไทย (THE EFFECT OF ANGKLUNG (ANG-KA-LUNG) INTERVENTION MODEL FOR IMPROVING THE QUALITY OF LIFE AMONG ELDERLY PEOPLE IN MAUNG DISTRICT, SAMUTPRAKARN PROVINCE, THAILAND.) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: ผศ. ดร. เนาวรัตน์ กาญจนาคาร, อ.ที่ปรึกษาวิทยานิพนธ์ร่วม: ศ. ดร. บุษกร บิณฑสันต์, 191 หน้า.

ประเทศเอเชียตะวันออกเฉียงใต้รวมถึงประเทศไทยในปัจจุบันประชากรผู้สูงอายุเพิ่มขึ้นอย่างรวดเร็ว พบว่าผู้สูงอายุไทยใช้ชีวิตอยู่ที่บ้านคนเดียวและไม่ได้ร่วมกิจกรรมซึ่งมีผลต่อคุณภาพชีวิต โดยเฉพาะอย่างยิ่งในพื้นที่กึ่งเมือง กิจกรรมดนตรีสามารถช่วยเพิ่มคุณภาพของชีวิตกระตุ้นผู้สูงอายุที่จะใช้งานกับการแสดงออกทางอารมณ์และร่างกาย ดังนั้นการศึกษาครั้งนี้มีวัตถุประสงค์เพื่อศึกษาผลกระทบของโปรแกรมอังกะลุงในการเพิ่มคุณภาพชีวิตของผู้สูงอายุในจังหวัดสมุทรปราการ, ประเทศไทย การศึกษาครั้งนี้เป็นการศึกษากึ่งทดลองที่มีกลุ่มควบคุม ผู้สูงอายุจำนวน 118 คน 59 ผู้สูงอายุในเขตอำเภอเมืองจังหวัดสมุทรปราการสำหรับกลุ่มทดลองและ 59 ผู้สูงอายุในอำเภอบางปะกงจังหวัดฉะเชิงเทราเป็นกลุ่มควบคุม โปรแกรมอังกะลุงได้ดำเนินการสำหรับกลุ่มทดลองและกิจกรรม 2 ชั่วโมงต่อวันสัปดาห์ละครั้งเป็นเวลา 8 สัปดาห์ ได้แก่ 1) การนำสู่เครื่องดนตรี 2) การปฏิบัติกิจกรรมการถือ 3) การสร้างความสัมพันธ์ 4) เริ่มต้นด้วยเพลงที่เรียบง่ายและคุ้นหู 5) การจัดกิจกรรมและการเคลื่อนไหว มีการเก็บรวบรวมข้อมูล 4 ครั้ง คือ ก่อนการทำกิจกรรม สัปดาห์ที่ 8 (T2) สัปดาห์ที่ 12 (T3) และ 16 (T4) หลังจากการดำเนินการคุณภาพชีวิตโดยวัดจาก WHOQOL-OLD General Linear Model repeated-measures ANOVA และ General Linear Model repeated-measures ANCOVA ใช้ในการประเมินความแตกต่างค่าเฉลี่ยระหว่างกลุ่มและภายในกลุ่มตามเวลา

ผลการศึกษาพบว่าคุณภาพโดยรวมของชีวิตหลังการดำเนินการกิจกรรม เพิ่มขึ้นอย่างมีนัยสำคัญในกลุ่มทดลองเมื่อเทียบกับกลุ่มควบคุม เมื่อแบ่งคุณภาพชีวิตเป็น 6 ด้าน: ความสามารถทางประสาทสัมผัส ด้านความอิสระ ด้านอดีตปัจจุบันและกิจกรรมในอนาคต การมีส่วนร่วมทางสังคม ความตายและการตาย และความใกล้ชิด มีความแตกต่างกันทางสถิติ (p-value <0.05) ผลจากการใช้ General Linear Model repeated-measures ANCOVA แสดงให้เห็นว่าคุณภาพโดยรวมของชีวิตมีความแตกต่างหลังจากกิจกรรมอังกะลุงอย่างมีนัยสำคัญทางสถิติ (p-value <0.01) เมื่อพิจารณาในแต่ละด้านของคุณภาพชีวิต ทุกด้านแตกต่างกันอย่างมีนัยสำคัญ (p-value <0.01) การศึกษานี้ให้ภาพรวมของบทบาทกิจกรรมดนตรีในการปรับปรุงคุณภาพชีวิตของผู้สูงอายุและสามารถเป็นแนวทางในการได้มีส่วนร่วมในกิจกรรมของเพลงที่สามารถช่วยให้ผู้สูงอายุมีสัมพันธภาพที่ดี มีส่วนร่วมทางสังคม ไม่รู้สึกโดดเดี่ยว และได้รับการกระตุ้นในการร่วมกิจกรรม รวมถึงกระตุ้นประสาทสัมผัสต่างๆ มากขึ้น ดังนั้นกิจกรรมดนตรีควรได้รับการพิจารณาสำหรับการใช้และการพัฒนาเป็นการทำกิจกรรมที่เรียบง่ายและมีประสิทธิภาพสำหรับการพัฒนาคุณภาพชีวิตในชุมชนผู้สูงอายุต่อไป

สาขาวิชา สาธารณสุขศาสตร์ ลายมือชื่อนิสิต .....

ปีการศึกษา 2559 ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

ลายมือชื่อ อ.ที่ปรึกษาร่วม .....

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SUPANG WATTANASOEI: THE EFFECT OF ANGKLUNG (ANG-KA-LUNG) INTERVENTION MODEL FOR IMPROVING THE QUALITY OF LIFE AMONG ELDERLY PEOPLE IN MAUNG DISTRICT, SAMUTPRAKARN PROVINCE, THAILAND.. ADVISOR: ASST. PROF. NAOWARAT KANCHANAKHAN, CO-ADVISOR: PROF. BUSSAKORN BINSON, 191 pp.

Thailand is nowadays facing the rapidly growing population of the older person. Many of Thai elderly people have been found that they are living at homes alone and inactive affecting their quality of life (QOL). Music activities can help improve the quality of life by facilitating and stimulating the elderly to be active with the non-verbal expression of emotional and physical aspects. This study aims to evaluate the effects of Angklung intervention model on the quality of life among elderly people in Samutprakarn province, Thailand.This study was a quasi–experimental study with the control group. The 118 elderly people were assigned into two groups, which were 59 elderly living in Maung district, Samutprakarn province for the intervention group and 59 elderly living in Bangpakong district, Chacheongsao province for control group. The Angklung intervention was conducted and the activities took 2 hours per day once a week for 8 weeks. Data were collected at baseline (T1), 8^{th} week (T2), 12^{th} week (T3), and 16^{th} (T4) after the intervention implemented. The quality of life was measured by WHOQOL-OLD. General Linear Model repeated-measures ANOVA and ANCOVA were used to assess the mean difference between groups and within group overtimes.The overall quality of life after implemented Angklung intervention model significantly increased in the intervention group compared with the control group. When divided the quality of life into 6 facets: the sensory Abilities (SAB), autonomy (AUT), past, present, and future activities (PPF), social participation (SOP), death and dying (DAD), and intimacy (INT), there were also statistical differences (p-value < 0.05). The results from General Linear Model repeated-measures ANCOVA was shown that the total quality of life (QOL) was different after the intervention with statistically significant (p-value < 0.01). When considering each facets of QOL, all facets were significantly different (p-value < 0.01). This study provides an overview of music activity role in improving the quality of life among the elderly and can be the guideline in being engaged in music activities that can help the elderly connect their life experiences with other people. Consequently, music activity can be considered for applying and developing as the simple and cost-effective intervention for improving the quality of life in the elderly community further for the other settings.

Field of Study: Public Health

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Student's Signature .....

Advisor's Signature .....

Co-Advisor's Signature .....

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Lastly, I would like to wholeheartedly thank my Mom and Dad Wattanasoei family and Mr.Nagrit for enduring supports and patience to allow me accomplishing this meaningful study and unfolding a new chapter of my life.

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CHAPTER I INTRODUCTION

1.1 BACKGROUND

The current number of the elderly population is increasing worldwide due to the advances in the medical science and technology. The data from the United Nation reported the trend of changes in population structure in the year of 2000 that the population whose aged 60 years and over was over 584 million people, and it is expected to be 1,121 million in the year 2025. Asia has held the fastest acceleration in aging population, especially in the underdeveloped nations. The gigantic majority of older people has been living in the developing countries which are often least prepared to meet the challenges of the rapid aging society [1].

Thailand is one of the developing countries that obviously faces to the rapid growing in older population. By 2020, the total population of elderly will exceed the population of children whose age is less than 15 years old. UNFPA (2006) stated that Thailand was in the seventh rank next to Singapore in the rank of the country that was found the highest number in aging population with the total of eleven countries in South-East Asia. The trend of elderly population has been continuing to increase. It can be seen by that the proportion of the population whose aged 60 years and over increased from 5.6 percent in the year of 1978 to 7.5 percent in 1991, 13.2 percent in 2010, and 15.3 percent in 2014 [2]. Bureau of empowerment for older persons found that in the year of 2004 to 2014, the average rate of elderly people is increasing nearly

200,000 people per year every year, which by the year of 2005, elderly people were added another 194,549 people, and additional 152,839 people were added in 2006 and more than 194,338 people in 2007. In the year of 2010, a number of elderly people in Thailand were found 63.8 million people and 9.9 million people in 2014 [2]. These obviously reveal the continuous increasing of Thai elderly people trend in this time and age.

Elderly people are defined as persons aged 60 years old and over. According to UNFPA (2006), elderly population is identified as the increasing in the percentage of elderly, whose age over 60 years old in the total population. For Thailand, the population structure currently was about 64 million people, and it is found to be the country of being in an aging society with a range of conditions [3]. It can be seen from the structure of the elderly population that the rate increased both in volume and the proportion of total population as a result of the development in various fields whether reduce the incidence of the population and the advancement of public health and medical technology affecting population health and life expectancy from rapidly entering to the aging society. The major impacts of this change are that the elderly people often suffering from health problems caused by the body's deterioration and economic problems related to the inoccupation of the elderly because they cannot work. This results in the lacking of income. The government must involve in the elderly care burden including the right management of the problems such as the right to have a good access through medical treatment.

In addition, nowadays the traditional model of family life has changed from big families to a single family. Family members tend to be unable to take care of the elderly as in the past. This results from the changes in the economic, social, and lifestyle. The role of family member of being take care of the elderly has been decreased. Most of the elderly people were left at home by themselves. The family members have to go out for their work because of the competition. This results in leaving no time to take care of the elderly. As a result, the relationships in the family that used to have the strong relationships are easing down [4]. This trend has been the huge situation in the urban area and semi-urban area whereas the lifestyle changes obviously. From the report of elderly situation in Thailand (2008), it was found that 51.5 percent of the elderly people were left at home alone or living with only their couple, and this change tend to be increasing continuously [5]. Moreover, nowadays the elderly people are not being obeyed and respected from their children or grandchildren. They do not perceive the importance of elderly's teaching or comment because they believe that their comment is conservative. Most of the elderly is being abandoned from their family members. This results in the misunderstanding between elders and children [6].

Due to the lacking of a good relationship in the family, this causes the psychological effects on the elderly people. These reflect their feeling that they are worthless, lonely and discouraged in life, and their quality of life declines, eventually. The problems in lacking of personal intimacy, care and love and loneliness, depression

or living aimlessly are all the psychological problems that need to be considered [7]. It is an evident that the quality of life of older people should be paying attention for caring assistance and social support.

Quality of life (QOL) in elderly people due to the aging society changes as discussed above impacts the society awareness of the assistance to the elderly, which is very necessary and important in order to provide care for the elderly that has been regularly comfort that affects to the emotions. Quality of life at a certain level can be measured by the well – being and the other aspects such as satisfaction and happiness with life as a whole [8]. Contributes to a sense of pride in themselves among the elderly in their careers as well as social welfare facilities for the elderly, the encouragement of social life make elderly cannot adapt to their social change. This results to the quality of life for older people livelihoods continuous to act as meaningfulness in the family and society. According to the World Health Organization (2006) has defined QOL as an individual perception of their position in life in the context of culture and value system in which they live and relation to their goals, standards, expectation and concerns [9].

From the previous research of elderly in Thailand, it was found that the elderly people who participate in the activities in social and community had an opportunity to communicate and socialize with other people. This let them performs physical and mental health. The social learning was the great opportunity in the joint activities with other people [10]. Elderly also have the opportunity to convey their potential exists

as well as the exchange of experience, knowledge, wisdom and skill with another person [11].

Activity Theory based on Havighurst (1953) can be described into four characteristics for measuring successful aging according to activity: 1) a way of life that is socially desirable for this age group, 2) maintenance of middle-age activity, 3) a feeling of satisfaction with one's present status and activities, and 4) a feeling of happiness and satisfaction with one's life. Similarly, it can be identified as the social status of the elderly which focuses on the relationship in a positive way during practice activity on the life satisfaction of the elderly. This can be explained that when persons get older, the social role is reduced. However, their social is still needs as people in middle age [12].

This theory also described that elderly people are required to attend the event or activities for their happiness and good life as well as the adult age that can participate in activities on their own interest. This concept refers to activities other than the activities that people treat themselves. They are the activities that people do with friends, social or community, which can influence the elderly people practicing the sense of their valuable and beneficial to society. The substance of this theory can be explained by concluding that the social activity of older people is positively correlated with life satisfaction among the elderly. Therefore, the appropriate activities for the elderly are valuable and necessary.

Leitner and Litner (2004) found that activities including dancing, exercising, planting, and art and music activities are essential to improve the quality of life in the elderly [13].

Thai elderly situation (2004) revealed that the elderly who remain in various activities or other community participation would have the opportunity to communicate and socialize with others in society. In addition, this encourages older people to use their free time and also provide the elderly with good physical health and mental health. The elders had the opportunity to share and learn with social activities with other people as well as the exchange of experiences, knowledge, wisdom and skills with others [11].

Music comes naturally to the origin of each human life which can explain the peace, relaxation, and sadness. Music also incredibly effects the treatment of some disease [14]. It can reduce stress, anxiety and sadness. Moreover, music experience affects to reduce the feelings of loneliness and promote relationships

Music is suitable for the elderly with its simple, calm or light [15]. Music can help relief in physical, psychological, social and spiritual in the elderly by causing attention, and enthusiasm evoke the memories. It also can help regulate mood, reduce stress and sadness, reduce anxiety, increase concentration, and promote relations with other people [16], [17]. The benefits of music are discussed as follows: 1) the music will be a great companion for the elderly, 2) music will help elderly create

continuously without losing the last, and 3) music is a matter of enjoyment. The elderly will feel refresh and relax when they hear the music.

Music has a great influence on the psychology and physiology as the strength of the relaxation better than the other reinforcement. Music is the training process skills that can distract from external stimuli by focusing on what is being done to prevent the mind from obscurity. Moreover, music can enhance meditation and relaxation [18], which is appropriate for the elderly. The musical activities stimulate the emotional and mental health, and they can also enhance relationships. Moreover, the American music conference (2007) found that the use of a keyboard player can reduce anxiety, depression in the elderly and help the elderly interact with other people that can enhances self-esteem and reduce depression [19].

Music therapy is the elements that can be modified to develop and maintain physical, mental, emotional, and social health. The music therapists will perform the therapy that is set goals through various musical activities. The goal of music therapy is not focused on musical skills, but focusing on the development of physical, mental, emotional, and social depending on the need of each individual who are receiving treatment [20].

According to Bussakorn (2010), music therapy in Thailand can be divided in to 3 characteristics: 1) music therapy in the form of the activity that can be listening, singing, playing the music, 2) music therapy for treatment in specific conditions that can be music listening in order to reduce pain, reduce stress, or reduce anxiety, and 3)

music therapy for the traditional events in the local area in the case of faith and believe [21].

Most researchers were optimistic about the effects of music therapy with individuals who suffer from mental illnesses. Research has demonstrated that individuals improve after being treated with music therapy [22], [23], [24], [25], [26], [27], [28], [29], [30]. Two studies found that adult patients improved in social contact, interpersonal communication, and overall behavior who suffer from schizophrenia [24], [26]. An experimental study [31] found that a group of patients with schizophrenia, bipolar, and disorder that received music therapy versus routine therapy improved the negative symptoms such as anxiety and depression. The authors concluded that music therapy is effective as a treatment.

Musical activities not only advance the learning of new skills but help better enjoy our lives through enhanced emotional facets as well. This period of life can also lead to depression and loneliness. Music fills those hours with activities that stimulate the brainwaves and give elders a sense of accomplishment and quality of life improves along with the mental well-being [32].

Angklung is a musical percussion in Thailand which is characterized by the interaction of the wood and barrel, which is the original instrument from Java (Indonesia). It is known for the unique voice. Angklung is a percussion instrument made of bamboo, and one player can play only two notes. The nature of Angklung symphonic orchestras requires 5 or more players [33].

In the elderly, Angklung helps promote the coordination of physical and tasks. Especially, the wrist of muscles for flicking Angklung also promotes memory and concentration in a note. The elderly will awake to the beat and learn the coordination of the various organs. Playing Angklung requires the unity of the great performers to cause a melodic and harmonious. The music requires concentration to remember the notes accurately. Playing Angklung also enhance relationships because any single person cannot be played strictly with their obligations when it comes to shaking. The only one note cannot be played alone [34]. This related with the study of Thammaruja (2004) found that Angklung can create the harmony itself that can result in the increasing of self-esteem and the valuable and they can exchange comment to each other. These can create the good relationship and the participation in the activity [35]. The study had also created the recreation program by playing Angklung in older adults with depression in Banglamung homecare center. The participants were 20 elderly, and the results were found that after the experiment elderly participants had lower depression than before the experiment, and then the elderly that were only provided the regular nursing care. With the nature of Angklung, it cannot be played alone, playing Angklung results in the unity of the group that help increase self-esteem and reduce depression [35].

Wangwan and Sasat (2011) studied the effects of playing Angklung with the group process activities on the loneliness of the elderly in residential home. The study found that the elderly in experimental group after participated in Angklung activity

with group process had the lower loneliness than before the activity and lower than the control group who received the usual care with a statistically significant level [36].

Samutprakan is one of province in semi-urban areas of Thailand that is currently challenging to the increasing in the elderly community. The numbers of elderly people living in Samuthprakarn were 63,920 people. Maung district is purposely selected for this study because the aging population is expanding which was found 24,623 elderly people living in this district. Moreover, almost half of those elderly diagnosed with the chronic diseases including hypertension, diabetes, and heart diseases [37]. In addition, this area has been transited to the rapid growth of the industrial movement and the changes of the economic, social, and lifestyle. This affects the structure of family style which changes from the extended family to single family. The role of a family member of taking care of the elderly has been decreased. The high numbers of the elderly people are neglected and being at home alone. In addition, they are inactive and rarely to participate in the community activities. The preparations to get ready to support the issues of the elderly and improve the quality of life of older people are urgently needed.

Nevertheless, the studies that develop the intervention in the form of music activities and study the effect of the intervention in this area remains overlooking. For this reason, researcher is interested in applying Angklung instrument into the form music intervention model (a common practice in the form of Angklung activities) to improve the quality of life among the elderly people in Maung district, Samuthprakarn

province and studying the effect of the intervention to the quality of life by adopting World Health Organization Quality of Life questionnaire-version for older people (WHOQOL-OLD) which consists of six domains: Sensory Ability, Autonomy, Past, Present and Future Activities, Social Participation, Death and Dying, and Intimacy. Due to the fact that the nature of Angklung is simple and everyone can play without any background knowledge of music. Playing Angklung requires the collaboration of the band members to create a song. This musical event is expected to improve the quality of life of elderly and can be applied to strengthen the elderly community in Thailand for sustainability further.

1.2 RESEARCH QUESTIONS

1.2.1 Does the Angklung intervention model change the quality of life toward six domains: sensory ability (SAB), autonomy (AUT), past, present and future activities (PPF), social participation (SOP), death and dying (DAD), and intimacy (INT) among elderly People in Muang district, Samutprakarn province?

1.2.1.1 Does the Angklung intervention model change the quality of life toward six domains: sensory ability (SAB), autonomy (AUT), past, present and future activities (PPF), social participation (SOP), death and dying (DAD), and intimacy (INT) among elderly people in Muang district, Samutprakarn province in before and after receiving the intervention?

1.2.1.2 Does the Angklung intervention model change the quality of life toward six domains: sensory ability (SAB), autonomy (AUT), past, present and future activities (PPF), social participation (SOP), death and dying (DAD), and intimacy (INT) among elderly people in Muang district, Samutprakarn province between experimental and control group before and after receiving the intervention?

1.3 RESEARCH OBJECTIVES

1.3.1 To develop the Angklung intervention model for elderly people in Muang District, Samutprakarn Province.

1.3.2 To evaluate the effectiveness of the Angklung intervention model for improving the quality of life toward six domains: sensory ability (SAB), autonomy (AUT), past, present and future activities (PPF), social participation (SOP), death and dying (DAD), and intimacy (INT) among elderly people in Muang district, Samutprakarn province.

1.3.2.1 To compare the mean score of the quality of life toward six domains: sensory ability (SAB), autonomy (AUT), past, present and future activities (PPF), social participation (SOP), death and dying (DAD), and intimacy (INT) among elderly people in Muang district, Samutprakarn province within group before and after intervention.

1.3.2.2 To compare the mean score of the quality of life toward six domains: sensory ability (SAB), autonomy (AUT), past, present and future activities (PPF), social

participation (SOP), death and dying (DAD), and intimacy (INT) among elderly people in Muang district, Samutprakarn province between experimental and control group before and after intervention.

1.4 RESEARCH HYPOTHESIS

1.4.1 Null Hypothesis:

1.4.1.1 The quality of life toward six domains: sensory ability (SAB), autonomy (AUT), past, present and future activities (PPF), social participation (SOP), death and dying (DAD), and intimacy (INT) among elderly people Muang district, Samutprakarn province is not different within group before and after the intervention.

1.4.1.2 The quality of life toward six domains: sensory ability (SAB), autonomy (AUT), past, present and future activities (PPF), social participation (SOP), death and dying (DAD), and intimacy (INT) among elderly people Muang district, Samutprakarn province is not different between the experimental group and control group before and after the intervention.

1.4.2 Alternative Hypothesis:

1.4.2.1 The quality of life toward six domains: sensory ability (SAB), autonomy (AUT), past, present and future activities (PPF), social participation (SOP), death and dying (DAD), and intimacy (INT) among elderly people Muang district, Samutprakarn province is different within the experimental group and control group before and after the intervention.

1.4.2.2 The quality of life toward six domains: sensory ability (SAB), autonomy (AUT), past, present and future activities (PPF), social participation (SOP), death and dying (DAD), and intimacy (INT) among elderly people Muang district, Samutprakarn province is difference between the experimental group and control group before and after the intervention.

1.5 OPERATIONAL DEFINITIONS

Angklung intervention model: The music activity practice in the form of Angklung activity for the elderly that was set out 1 day per week for 8 weeks including the week for practicing of instrument. The activities were the form of practicing in the note, the holding, and playing. This was also include the movement practice in the body following the note and song. The length of time will be 2 hours per each time.

Aung-ka-lung: A musical percussion in Thailand which is characterized by the interaction of the wood and barrel, which is the original instrument from Java (Indonesia), will be used for the activity event for improving the quality of life among the elderly in Maung district, Samutprakarn province. Angklung that was used in this study was the original Angklung from Java (Indonesia). This Angklung has light weight, and has a sound system that can be played in a variety of international music. This is suited for the elderly people.

Health status: The participant's perception of their health status that can be the history of illness which refers to health status that was diagnosed by healthcare professional including diabetes, hypertension, heart diseases, and other chronic diseases, and health complaints which included visual impairment, hearing impairment, sleeping problem, recognition impairment, urinary incontinence, and other impairments.

Health insurance: The mode of payment for health care services including government officer insurance, universal coverage, and private sector insurance.

Community participation: The participants' experiences in attending the community activities in both the traditional events and the activities that the community provides.

Music preference: The experiences of music in listening and playing.

Quality of life: Quality of life is the individual perception of their position in life in the context of culture and value system in which they live and relation to their goals, standards, expectation and concerns which includes six domains: Sensory Ability, Autonomy, Past, Present and Future Activities, Social Participation, Death and Dying (WHOQOL- OLD Group, 2005).

1.6 CONCEPTUAL FRAMEWORK

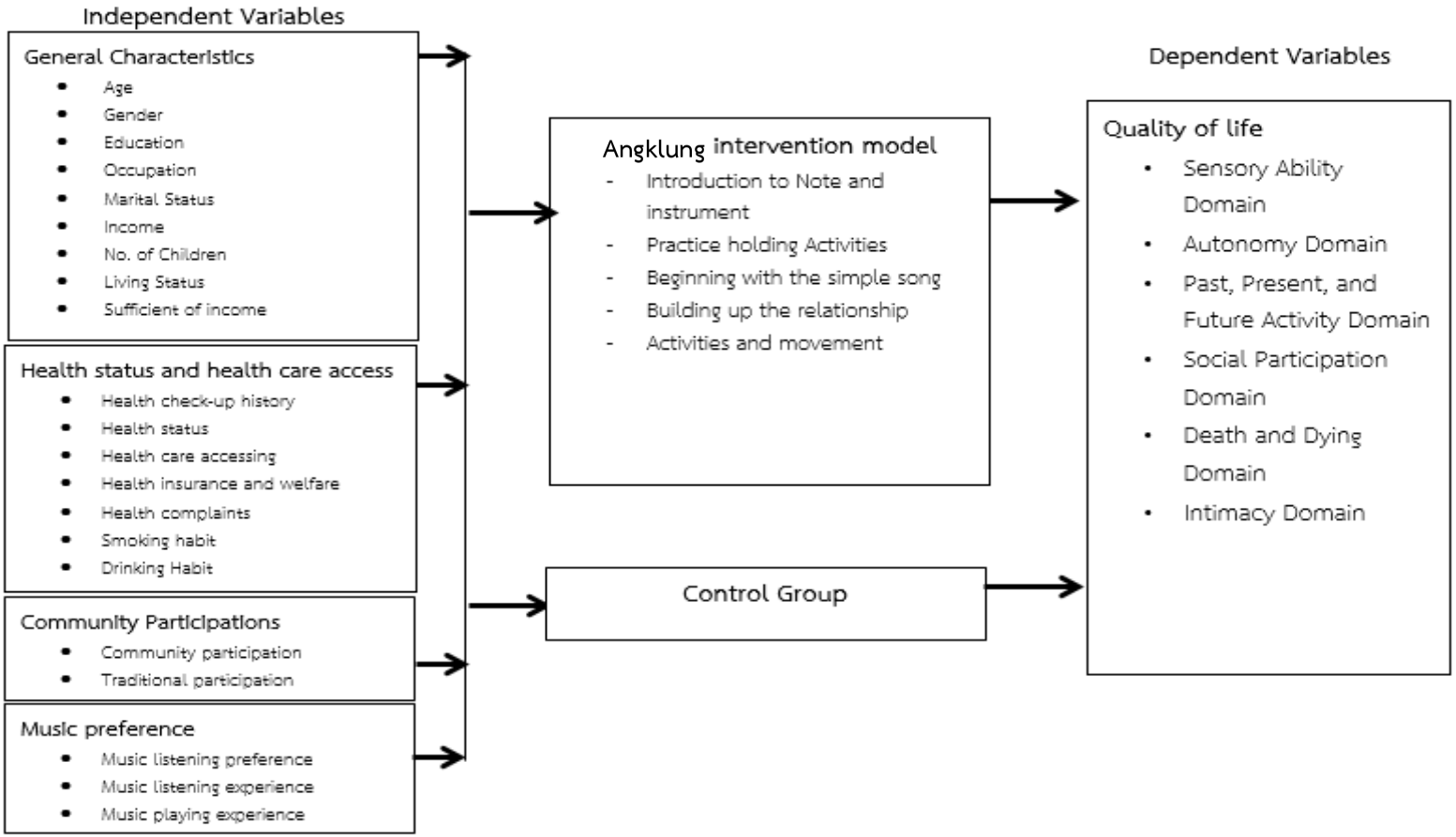


Figure 1.1: Conceptual Framework

CHAPTER II LITERATURE REVIEW

Corresponding with the objective of this study, a literature and research review present in this chapter emphasized on five major parts. The related literatures are reviewed as follows:

1. Elderly
2. Quality of life
3. The activities in the Elderly
4. Music and Music therapy
5. Angklung instrument
6. Review of related study

2.1 ELDERLY

2.1.1 The Definitions of the Elderly

The World Health Organization (2010) defined elderly as a person aged 60 years old or older according to their age or social defined as the formulation of social or retired from working. In developed countries, most of them are based at the age of 65 years and over [38].

United Nations (UN) defines the elderly that they refers to both male and female population aged 60 years old or older and can be divided into the three levels

according to an aging society that are 1) aging society means that a society or a country that has a population aged 60 years old and older over 10 percent of the population, or the population aged 65 years or older over 7 percent of the country's population, 2) aged society or a complete of an aging society means that a society or a country that has a population aged 60 years and older more than 20 percent of the total population or the population aged 65 years and older more than 14 percent of the population, and 3) super-aged society means that a society or a country that has a population aged 65 years and older over 20 percent of the total population [39].

The definition of elders was defined most meaning of the elderly based on age as the research factor. Throughout this study, elderly means people who are 60 years old or older and they can be men or women.

2.1.2 The Changes in the Elderly

The elderly people as those aged 60 years old or older unavoidably face to the changes of cells in the body occurring with age. When human naturally entering to the old age, the performance and efficiency of the organs will be reduced and deteriorated. These changes will be varying on an individual basis of the elderly.

2.1.2.1 Physical and Physiological changes

The physical and physiological changes are depending on the individual basis of genetics, lifestyle, and behavior which can be explained as following [40], [41]:

• **Visual impairment**: The elderly people were commonly found a visibility problem resulting in an obstacle to the lives of the elderly, and this may lead to falls and other consequent issues. Other problems found among elderly were presbyopia and cataract.

• **Hearing impairment:** The problems often found were the loss of the ability to hear. The elderly people could have low ability in hearing the high tones, but they could hear a low tone markedly lower than normal speech.

• **Muscles:** Their muscles are smaller and the performances and operations were reduced and fatigued quickly.

• **Genitourinary Tracts**: In the elderly, bladder capacity is reduced resulting in the frequent urination and urinary constituents.

• **Respiratory system impairment:** The efficiency of lungs is reduced. The symptoms include being easy exhausted.

• **Cardiovascular system:** The heart muscle is weakened and the blood vessel walls have been thickening with fat resulting in the atherosclerosis. The flexibility of the blood vessel has decreased led to the high blood pressure.

• **Nervous and brain systems:** Due to a reduced number of neurons, this result in the dementia, slow movement, and low sensation. The brain weight of the elderly is also normally reduced, and it has been found that 10% of the brain weight is reduced from the aged of 25 to 75 years old (Xavier et, al., 2003). In

addition, the relationship between the brain, muscles and joints cannot be performed normally affecting their posture and the conditions of the memory.

• **Endocrine system:** In the elderly, gonadal steroid hormones have been decreased and the parathyroid hormone has changed resulting in the decreasing in bone cells and this will be the occurrence of an osteoporotic fragility fractures, especially the spine, hip, thigh and wrist bones which cause the pain of the back, wrist, and others easily.

From the survey of Thai elderly under the Health Promotion Program, Ministry of Public Health (MOPH) in 2013, the elderly faced to the complaints and impairment including the body movements (57.8 %), hearing impairment (23.8%), visual impairment (19.2%), learning disability (3.7%), and psychological or behavioral problems (2.6%). In addition, these issues were also increasing with the age [42].

2.1.2.2 Psychological changes

Psychological changes correlated with the changes in physical and social because of the deterioration of the organs that influence the mental state of the elderly as well as the adaptation of the various environments. The changes in psychological of the elderly results from the loss of the various aspects including [43]:

1. The loss of beloved person that can be the close friend, relatives or couple because of the death affects the elderly feeling of depression, loneliness and anxiety.

2. The loss of social status and economic according from lacking of income, losing of the job and decreasing in the responsibility will influence on an impression of losing their positions, value, and meaning in life. It also affects the relationship to others in the society. Because of these, the elderly cannot adapt and accept for the changes.

3. Loss of the relationship in the family because of the role of the elderly in counseling for family members has decreased. The respectfulness from the family members to the elderly has also been ignored. As a result, these intervene the elders' feeling of valueless, loneliness and worthless.

2.1.2.3 Social and Cultural change

The current social and cultural issues relate to the cause of physical and mental health problems. Thai social and culture nowadays tend to change into the Western style. These impacts were found to be the huge effect among the elderly for the changes that can be explained as following:

1. Social condition changes: Since the current society has ignored the roles of the elderly in many aspects including role-related tasks and the role in their family. The elderly used to have the gigantic role and responsibility in the family for the householder, but has been turned out to be the dependence. The elderly also lose the power and social roles that they used to have.

2. Being abandoned: This is the results from the social and traditional pattern changed to be modernization affecting the expansion of the city and urban which impact to the social and family pattern.

2.1.3 The Situation of Thai Elderly

The United Nations predicts that by the year of 2001 to 2100, it is a century of elderly people. The world is entering in an aging society. Each country will be entering in an aging society according to the circumstances and environment of each country such as economic growth and medical and nutrition development [44].

The structure of Thai elderly population currently was found that among the total population of 64.92 million the population aged 60 years old and over was 10.02 million representing 15.44 percent. The rate of the elderly population in Thailand has been increasing dramatically. In the year of 2010, the proportion of the elderly was found 10.7 percent of the total population or 7.02 million people, and in 2012 it rose to 12.8 percent of the total population (8.3 million people). The proportion of the elderly population was currently found 14.7 percent (9.5 million people), and it is expected that in 2025, Thailand will have the elderly more than 20 percent (14.4 million people), and this means that Thailand has completely become the aging society. By 2031, Thailand will be transited into the classification of a “super aged society” [42].

Presently, more Thai elderly people are living alone. Since Thai family pattern in this time and age has been changed from the extended family to the single family for the past 2-3 decades, the family average size per household has decreased sharply. The numbers of members in Thai household thirty years ago were found the average of 5 people, but in 2000 this decreased to be 4 people and in 2014 it is estimated to decrease to 3 persons per Thai household. Consequently, the number of elderly living alone or only with their spouse is increasing respectively. The number of the elderly living alone increased from 7.6% in 2007 to 8.6% in 2011 and 8.7% in 2014 and the number of the elderly living only with their spouse expanded from 16.3% in 2007, 17.6% in 2011, and 18.8% in 2014 [45]. On the other hand, the number of the elderly living with their child continuously decreased. This trend was found in urban and semi-urban areas than others. This continuing proceed will intervene the implications of the elderly care and their quality of life, especially among the elderly in urban and semi-urban area [46].

The changing in economic, social, lifestyle, and family members play a role in caring for the elderly. Fewer seniors would have to be abandoned to stay home alone because their children have to go to work outside the home. The elderly have been less attentive. More than that, cities and suburbs are experiencing the abandonment of the elderly because of social change. Moreover, the elderly rarely participate in the activities. As a result, the quality of life of the elderly was found at the poor level [47].

2.1.4 Health Status of Thai Elderly

In the case of the situation of health problems among Thai elderly, the survey of the office of the international public health policy, Ministry of public health in 2009 found that from the burden of disease and injury of the Thai elderly population, the disability adjusted life years (DALYs) was revealed that the first top five ranks of the diseases found among male elderly people including stroke, coronary artery disease, chronic obstructive pulmonary disease, diabetes, and liver cancer and among female including stroke, diabetes, cardiovascular disease, Alzheimer's disease, and depression, respectively.

In 2011, 56.7 percent of the elderly received an annual health checkup. Almost 80% of Thai elderly currently faced to at least one chronic condition including hypertension, osteoarthritis, diabetes, coronary heart disease, dementia, and cancer. This can result in the disability and pain among elderly people. From the 2013 survey of health status of the elderly, the existence chronic diseases commonly found among the elderly people were hypertension (41.4%), diabetes (18.2%), and osteoarthritis (8.6 %) [48]. This can be revealed that the elderly people in the community were faced to many health problems along with the retrograde changes of the economic, social and environment. These inevitably affect the quality of life among the elderly in the community.

In the aspects of health behaviors of Thai older adults includes eating habit, sleeping, exercising, smoking, drinking the alcohol. Among Thai elderly people, the study found that the proportion of smokers and alcohol consumption decline with their age in both men and women. The elders who smoke regularly were likely to decline from 12.6 percent in 2007 to 8.4 percent in 2011 and conversely increase by 9.5 percent in 2014. Alcohol consumption among the elderly was also likely to decline from 3.0 % in 2007 to 2.8 percent in 2014 [42].

Samutprakan province is in the semi-urban areas of Thailand that are likely to increase in the elderly community and change into the aging society. The numbers of elderly people were 63,920 people, and the elderly people living with chronic diseases were found 21,001 people. 24,623 people of the elderly were living in Muang district. Almost half of the elderly were also found that they were living with chronic diseases [37]. Due to the changing in the family pattern, many of them are living at homes by themselves and rarely have the opportunity to participate in the community.

2.1.5 Health care access and health care services of Thai elderly

Three main factors that affect the decision of healthcare service accessing among the elderly were based on: 1) predisposing factors including demographic characteristics, social structure, ethnicity, education, health beliefs and attitudes toward health services and health personnel, 2) enabling factors including socioeconomic status or family resources, health insurance, welfare, and community

resources, and 3) needs or needs for health services including perceived needs and evaluated needs [49].

Department of Medical services, Ministry of Public Health studied the development of health services for an aging society. The elders came to hospitals under the Ministry of public health with the three levels of hospitals which are regional, general and community hospitals. 83.0 percent of the elderly with chronic disease received the treatment at the regional and general hospitals more than to be treated at community hospitals. The main reasons of the decision in selecting the hospitals for treatment were location (77.3 %), convenience (66.9 %), and satisfaction with the services (43.3%) [50].

2.1.5.1 Health Insurance

Universal Health Coverage: The principle of universal coverage under section 5 of the National Health Security Act of 2002 requires that all persons are entitled to the right of accessing in health services that meet the standard and efficiency according to the Act [51].

Government officer Medical Benefit Scheme: The medical benefit scheme is a system that provides health insurance benefits which is the most extensive coverage compared with other health insurance. The benefit is unlimited in the cost and the time of the medical care. The coverage includes the disease that is not beyond in the other coverage or insurance, and it covers for the government officers' parents,

spouses and children [46]. This scheme that covers government officers and the family was found 8.5 percent of the total population. The proportion of the population aged 60 years old and over in this health care bureaucracy has reached more than 45 percent of those people who had this coverage, and the medical costs among this population are higher than other age groups [52].

Most of the Thai elderly people were found that they used 30 baht universal coverage card (64.1 %) followed by government officer medical benefit scheme card (33.7 %) for receiving the medical care [51].

2.1.6 Community and traditional participations of the elderly

Community and traditional participations or social participation in late life has a positive influence on quality of life, psychological well-being and health. Continued social functioning is a commonly proposed domain of successful ageing. Social relations can beneficial for the health of older adults along a range of health indicators including physical and cognitive functioning [53] [54]. Elderly people's involvement in physical and social activities helps them to preserve their physical and cognitive abilities and may delay the onset of the dependence associated with ageing. A better health and functional status can also be associated with higher levels of social participation [55].

WHO (2008) has been explaining that a crucial direction for policy to promote health equity concerns the participation of civil society and the empowerment of

affected communities to become active protagonists in shaping their own health. Community participation as the part of social participation can take on a number of different forms including the direct involvement or work with communities for collaborating by partnering with affected communities in each aspect of the decision including the development and empowerment by ensuring that communities retain and control the key decisions that affect elderly's wellbeing [56]. The older people need to continue in actively participating to community life. However, traditional thinking about older age and retirement is being challenged. Personal restrictions associated with aging and determinants related to the social and physical environment can impact to the social and community participation of older people. Elderly with the opportunity to spend time on recreation and leisure as well as social and community interaction can enrich older people's lives, and it is crucial for older people to feel included and valued within their local community. Community and social participation of the elderly people have the various advantages for the society and could engage them in the social activities that appears to be particularly beneficial to the health, wellbeing and empowerment of older adults. Importantly, community and social participation and their functioning can be the keys for ageing successfully. Some studies suggest that maintaining social participation in late life has a positive influence on quality of life, psychological wellbeing, health, cognitive functioning and life expectancy [57] [58]. However, personal restrictions associated with aging and the determinants related to the social and physical environment can further hinder the

social participation of older persons that tends to decrease with age [59] [60] [61] [62]. Since, older adult's relationships have the specific characteristics that make them more prone to the social isolation [63] due to the reduction of living and action space in old age, older persons social life tends to be more restricted to close relatives and the number of friends of their personal network and the contact frequency in relationships tends to decrease with age [64]. However, there is an increasing trend for older people to live alone.

This trend was found in the urban and semi-urban area of Thailand. The elderly increasingly is left at home and rarely participating in any community and traditional events. This effects to elderly's quality of life.

2.2 QUALITY OF LIFE (QOL)

2.2.1 The concept of quality of life

Quality of life (QOL) is an important element desired by every human being. According to Cooley (1998) stated that the term of "quality of life" does not affect to only one's lack of disability and illness, but also comprise the one's balance in psychological physical and social domain. However, quality of life is a multidimensional concept and subjective that is increasingly being recognized as a useful outcome in social care and health [65]

Hunter (1992) stated that the quality of life means a life of well-being in the physical, psychological, social and economic [66].

Jackle (1974) defined the quality of life that the most important elements comprising a quality of life are the satisfaction of living that is the individual's pleased to life and the satisfaction of living from a routine. These are all the perception that their lives are meaningful which can maintain the development in the various things [67].

Dalkey and Rourke (1973) defined the meaning of the quality of life that means the feeling of the normal life. This might be the satisfaction or dissatisfaction with their lives or the happiness or unhappiness in their lives [68].

Division of mental health and prevention of substance abuse, WHO (1997) defined quality of life as "an individuals' perception of their position in life in the context of the value system and culture where they lived and in relation to their goals, expectations, concerns and standards. According to Nilsson J. et al (2006) state that the subjective nature of quality of life implies that it can be conceptualized differently by different groups of people. Gender, age, cultural, and health status factor are some of the significant factors that influence their conceptualization [69].

According to the World Health Organization Quality of life assessment, the WHOQOL-OLD is a cross-culturally valid assessment of well-being. Assessment is operationalized trough 24 Liker-scaled items assigned to six facets (WHOQOL-OLD, 2006). The instrument was developed through a collaboration of 25 national centers around the word. The final version of WHOQOL-OLD contained six facets of four items

each; the comparisons between the WHO QOL-BREF and WHOQOL-100 used in the pilot and the field trial studies [70].

In this study, the WHOQOL-OLD will be used in this study for the measurement of the quality of life in the elderly people living in Maung district, Samutprakarn province to assess the effect of the music intervention for those elderly.

2.2.2 Component of the quality of life

According to The WHOQOL-OLD (2006): The global construct of quality of life is composed of six major underlying domains, as follows [9]:

1. Sensory abilities (OLD-SAB) domain: perceived sensory conditions that have effect on daily life such as impairments to sense affect daily life, loss of sensory abilities affect participation in activities, problems with sensory functioning affect ability to interact, and rate sensory functioning.

2. Autonomy (OLD-AUT) domain: perceived autonomy conditions such as freedom to make own decisions, feel in control of your future, people around you are respectful of your freedom, able to do things you'd like.

3. Past, Present and Future Activities (OLD-PPF) domains: satisfied with opportunities to continue achieving, received the recognition you deserve in life, satisfied with what you've achieved in life, happy with things to look forward to.

4. Social Participation (OLD-SOP) domain: the perception of social participation that has effect on daily life such as have satisfied with the way your time, satisfied with level of activity, satisfied with opportunity to participate in community.

5. Death and Dying (OLD-DAD) domain: the perception of death and dying that have effect on daily life such as concerned about the way you will die, afraid of not being able to control death, scare of dying, and fear pain before death.

6. Intimacy (OLD-INT) domain: the perception of intimacy such as feel a sense of companionship in life, experience love in your life, opportunities to love, and opportunities to be loved.

2.2.3 Quality of life measurement

According to World Health Organization an organization with direct responsibilities on global health index and global development, has defined the term 'health' as psychological, physical and social completed condition that is not only the non – disable or illness – free (The WHOQOL group,1996). From this definition of health, the health care outcomes and the measurement of health condition does not involve only the severity of morbidity and the number but includes quality of life. The major goal in health care is the person's well-being or quality of life [70].

This study will be used WHOQOL-OLD to measurement of the quality of life among elderly people in Maung district, Samutprakarn province. According to World Health Organization (2006) stating the WHOQOL-OLD project aims to test and develop a quality of life assessment for older people. This started in 1999 and the aim of project was to test and develop a generic measuring the quality of life in older adults for cross-cultural/international use.

WHO (2006) examined the quality of life WHOQOL-OLD with 5,566 elderly people from 20 national centers and the resultant Cronbach's alpha coefficient as a measure of internal consistency reached satisfactory values an acceptable range from 0.72 to 0.88 for each facet score and the total score of Cronbach's alpha coefficient was 0.89.

2.2.4 The WHOQOL-OLD Measurement

1. Sensory abilities (OLD-SAB) facet

The "Sensory Abilities" facet is assesses sensory functioning and impact of loss of sensory abilities on quality of life such as impairments to senses affect daily life, loss of sensory abilities affect participation in activities, problems with sensory functioning affect ability to interact, and rate sensory functioning.

2. Autonomy (OLD-AUT) facet

The "Autonomy" facet refers to independence in old age and thus reports the number of being able to take own decision and to live autonomously such as

freedom to make own decisions, feel in control of your future, people around you are respectful of your freedom, able to do things you'd like.

3. Past, Present and Future Activities (OLD-PPF) facet

The "Past, Present and Future Activities" facet delineates satisfaction about at things looking forward to and achievements in life such as satisfied with opportunities to continue achieving, received the recognition you deserve in life, satisfied with what you've achieved in life, happy with things to look forward to.

4. Social Participation (OLD-SOP) facet

The "Social Participation" facet describes participation in activities of daily. Especially, in the community such as have satisfied with the way your time, satisfied with level of activity, satisfied with opportunity to participate in community.

5. Death and Dying (OLD-DAD) facet

The "Death and Dying" facet is related to worries, concerns, and fears about death and dying such as concerned about the way you will die, afraid of not being able to control death, scare of dying, and fear pain before death.

6. Intimacy (OLD-INT) facet

The "Intimacy" facet evaluate being able to have personal and intimate relationships such as feel a sense of companionship in life, experience love in your life, opportunities to love, and opportunities to be loved.

Table 2.1: Concepts and contents of the facet included in the WHOQOL–OLD module

Facet	Abbr.	Concept/content
Sensory Abilities	SAB	Sensory functioning, impact of loss of sensory abilities on quality of life.
Autonomy	AUT	Independence in old age; being able or free to take own decisions and to live autonomously.
Past, Present and Future Activities	PRF	Satisfaction about at things to look forward to and achievements in life.
Social Participation	SOP	Participation in activities of daily living, particularly in the community.
Death and Dying	DAD	Worries, concerns, and fears about death and dying
Intimacy	INT	Being able to have personal and intimate relationships

2.2.5 Scale structure

Table 2.2: Items included in the facets of the WHOQOL-OLD module

Facet	Abbr.	No. of items	Items of facets	Possible range of raw score (*Min, Max*)
Sensory Abilities	SAB	4	1+2+10+20	(4,20)
Autonomy	AUT	4	3+4+5+11	(4,20)

Facet	Abbr.	No. of items	Items of facets	Possible range of raw score (*Min, Max*)
Past, Present and Future Activities	PRF	4	12+13+15+19	(4,20)
Social Participation	SOP	4	14+16+17+18	(4,20)
Death and Dying	DAD	4	6+7+8+9	(4,20)
Intimacy	INT	4	21+22+23+24	(4,20)

The WHOQOL – OLD modules compose of 24 Likert – scaled items assigned to six facets: "Sensory Abilities" (SAB), "Autonomy" (AUT), Past, Present and Future Activities (PRF), Social Participation (SOP), Death and Dying, Intimacy (DAD), Intimacy (INT). The score of these six facets of WHOQOL – OLD module can be combined to produce a general (Overall) score of quality of life among older adults, denote as the WHOQOL – OLD module "total score".

2.2.6 Scoring

Table 2.3: Items included in the facets of the WHOQOL-OLD module

Facet	Abbr.	Sum items	Scoring			
Sensory Abilities	SAB	4	Old-01*	Old-02*	Old-10*	Old-20*
Autonomy	AUT	4	Old-03	Old-04	Old-05	Old-11
Past, Present and Future Activities	PRF	4	Old-12	Old-13	Old-15	Old-19
Social Participation	SOP	4	Old-14	Old-16	Old-17	Old-18
Death and Dying	DAD	4	Old-06*	Old-07*	Old-08*	Old-09*

Facet	Abbr.	Sum items	Scoring			
Intimacy	INT	4	Old-21	Old-22	Old-23	Old-24
Total score (OLD)	SUM	24	Old-01*	Old-02*	Old-03	Old-04
			Old-05	Old-06*	Old-07*	Old-08*
			Old-09*	Old-10*	Old-11	Old-12
			Old-13	Old-14	Old-15	Old-16
			Old-17	Old-18	Old-19	Old-20
			Old-21	Old-22	Old-23	Old-24

*Note: * Reverse – scored items*

Hence, quality of life is one of perception of life in relation to the culture and value of the society in which the people lives. It is associated with expectancy, goal, interests and standard of that people. Quality of life is composed of six major domains consist of sensory abilities (OLD-SAB), autonomy (OLD-AUT), past, present and future Activities (OLD-PPF), social Participation (OLD-SOP), death and dying (OLD-DAD), Intimacy (OLD-INT). This study followed the WHO's concept of quality of life(1996) was defined as individuals' perception of their position in life in the context of the value system and culture where they lived and in relation to their goals, expectations, concerns and standards.

2.2.7 Interpretation

Average scores are ranging from 4-20 in each particular. The scored 20 points, higher in the percentage of results has the better quality of life. The total quality of

life with scores ranging from 24 - 120 points when the totals of all the respondents scored can be compared with the norms given below.

Score 24 - 55 points (20 to 46.4%), indicating a poor quality of life.

Score 56 - 88 points (46.5 to 74.0%), indicating a mid-life quality.

Score 89-120 points (74.1- 100%), indicating the high quality of life.

2.2.8 Why the WHOQOL-OLD is Suitable for measuring elderly QOL?

In this study, the researcher use WHOQOL-OLD (2006) version of Thailand, which was adopting the standard questionnaires [9], [71] as a tool to measure the quality of life of the elderly. This instrument has been used in Thailand and has been measured for a conviction of a group of the elderly with 0.75 in reliability. The tool consists of 6 domains which are sensory ability, autonomy, past, present and future Activity, social participation, death and drying, and intimacy.

The review of the literature found that the quality of life in elderly in Maung district, Samutprakarn province was at the low level. Therefore, to assist in improving the quality of life with the regard to the way of life of the elderly, it needs to emphasize in participation of the activity. The researcher is interested applications of music intervention as a tool to improve the quality of life among the elderly.

2.3 THE ACTIVITIES IN ELDERLY PEOPLE

2.3.1 The Concept of Activity in the Elderly

In general, most people usually think about the elderly people who do not watch television, listen to radio, unemployment and sleep in the daytime every day regularly. This is incorrect. Elderly people are required to make their own fresh and lively and the most useful in any activities such as meeting with their friends, gardening, planting trees, doing the various hobbies, and participating in their family and community activities [11]. When they are attending social events, they will feel satisfied in life with valuable [10]. The activities for the elderly should be encouraged to focus at the capacity and ability of the elderly in all aspects so that the elderly have a sense that they are valuable and useful to society. The activities to meet the needs of the elderly are genuinely helpful.

The older people who are involved in community events and socialize had the opportunity to communicate and meet with individuals in society and had the opportunity to participate in various activities. This encourages the elderly to use their free time to benefit, but also makes the elderly healthier with good mental health. It enhances the relationship with the other as well.

Thai elderly situation (2004) revealed that the elderly who remain in various activities or other community participation would have the opportunity to communicate and socialize with others in society. In addition, this encourages older people to use their

free time and also provide the elderly with good physical health and mental health. The elders had the opportunity to share and learn with social activities with other people as well as the exchange of experiences, knowledge, wisdom and skills with others [11, 46].

2.3.2 Activity theory

Activity Theory developed by Havighurst (1953) describes the social status of the elderly which focuses on the relationship in a positive way during practice activity on the life satisfaction of the elderly [12]. This can be explained that when persons get older, the social role is reduced. However, their social is still needs as people in middle age. This theory believes that elderly people are required to attend the event or activities for their happiness and good life as well as the adult age that can participate in activities on their own interest. This concept refers to activities other than the activities that people treat themselves. They are the activities that people do with friends, social or community, which can influence the elderly people practicing the sense of their valuable and beneficial to society. The substance of this theory can be explained by concluding that the social activity of older people is positively correlated with life satisfaction among the elderly. Therefore, the appropriate activities for the elderly are valuable and necessary [72], [73].

Activities that are provided for the elderly should consider the following factors: modern and contemporary social change (Modernization Perspective) that is the role of human in society changed and intergeneration linkage which is a factor that is about the change and the life experiences of people when they are older. This could be the difference between people of the same age but different era role as the structure of the age of the person. Structural functional theory is the one factor explained that when people enter to older age, the role of them will decrease [74].

Havighurst (1953) described activity theory into four characteristics for measuring successful aging according to activity as following:

1. A way of life that is socially desirable for this age group.

2. Maintenance of middle-age activity

3. A feeling of satisfaction with one's present status and activities

4) A feeling of happiness and satisfaction with one's life.

Similarly, it can be identified as the social status of the elderly which focuses on the relationship in a positive way during practice activity on the life satisfaction of the elderly. This can be explained that when persons get older, the social role is reduced. However, their social is still needs as people in middle age [12], [75].

McClelland (1982) described the activity theory that the elderly who live happily must try to maintain a level of social activity of their own [10]. Activities can help elders with movement or activity which is always active [76]. The activities for

the elderly should be treated on their own activities that contribute to society, so that the elderly have the opportunity to meet, talk, and share experiences with other people. When the elderly people attended in the social events or community activities, it can cause life satisfaction and feel that they are valuable.

Activity theory allows elderly try to maintain their activities. The elderly who live happily shall endeavor to maintain a high level of social activity of their theoretical activity to maintain activity in the social. The elderly is able to live a normal life in society and a successful life in addition to that activity is what gives seniors a greater life satisfaction [77]. Selecting appropriate activities for elderly needs to use the concept based on the following aspects:

1. To meet the needs of the elderly.

Human needs at different ages are several common characteristics. From the demand side response to the needs of the body based on four factors include food, shelter, medicine and clothing. In addition, in the elderly it is the same. As already mentioned, they also need to be responsive to problems such as the situation in daily life. According to the fundamental needs of human, the demands are the procedure [78] as follows:

1.1 Physiological needs are the requirements that everyone wants the same four factors, including food, habitat, clothes, and medicines.

1.2 Safety needs are the needs to be protected from the dangerous threat to stability and security. In the elderly, care, love, and trust will make the elderly feel safely and happily.

1.3 Belongingness needs are the needs to be loved by someone. When people are getting old, they will experience of losing their job, spouse, and relationships with others. Participation in social events and meeting new friends can help elderly feel better.

1.4 Esteem needs: In the elderly, they are the need to be honored and respected by others than other ages. Even Thai culture, it is very important. Thus, a person who loves can help seniors with a sense of pride in the recognition. It will give the elderly with a good result for the mental image of the elderly as well.

1.5 Self-actualization needs: the demanding fulfillment in life that is the final effort and a huge potential to achieve the goal of their life and achieve success in life.

2. The meaningfulness of the elderly

In the point of view, the elderly persons in society that have the power of ideas, talented and highly experienced in the field to develop themselves and society. This can be explained by summarizing below [79].

2.1 The elderly person should have been raised to respect and accept that as part of the society

2.2 The elderly person should receive care and health care knowledge and use their experience to be useful to society.

2.3 The elderly persons have the opportunity to work and participate in society according to their needs and abilities.

For the elderly, being active means that the elderly can find the replacement forms of activity when performing activities which used to be easy throughout their lives, but they are no longer available because of their health limitations. Improving elderly in full participation and integration in the activities is the key to maintaining good quality of life of elderly people [80].

2.4 MUSIC AND MUSIC THERAPY

2.4.1 Music

Music is the sound that has been naturally organized orderly with the clear structure and pattern. Music can be usefully used into the three main aspects: aesthetic, treatments, and educational. Music affects the body, mind and brain function in many aspects. The studies showed the following results [21].

1. The effect of music on the body: it can cause a change of respiration rate, pulse rate, blood pressure, responding of the retina, strained muscles, and circulation.

2. The effect of music on the mind and brain: it can cause the changes in mood, perception, consciousness, imagination reality, non-verbal communication, and relaxing [81].

2.4.1.1 The elements of music

1) Rhythm can enhance concentration and help relaxing.

2) Pitch: Low pitch and moderate pitch can help feel calm.

3) Volume/ Intensity: It is found that soft sounds can cause peace while the loud noise can cause contraction or witching of muscles. The right and appropriate sound can build peacefulness and help in better concentration.

4) Melody helps to drain the deep sense of mind that cause the initiative, creative and reduce anxiety.

5) Harmony can help measure the level of emotion by the reaction when listen to the chorus of the song [21].

2.4.1.2 The Origins of Music

It is difficult to identify or say that music happen at any moment because it cannot find evidence that clearly references. It just can be assumed and observed. The historical evidence remains in the current presumptive principle and reason and

take into account the possible. The assumptions about the origin of music [82] are as follows.

1. Music may due to the imitating of animal cries including the birds. Although the sound of these animals may not be called as music, it can be understood to be the meaning of unknown singer imitation. These animals may cause humans to learn to blow the horn, bone or bamboo later. It will also learn to devise sound like wood, knock on wood, stone or so. Since it was intended to intimidate the animals to fear, it was later attributed to sing and dance.

2. Music may be due to the elevation of the human voice and talking plain.

3. Musical rhythm may be due to the use of human work that sang on some operations will result in the work made the work fun, not boring, or less boring like many centuries ago. Ancient Greeks and Romans used the drum to beat of the rhythm of the rowers paddle to get the tempo in pie as needed.

4. Musical sound that could be caused by a signal after it has adopted a different sort of come up with regulations resulting in a tune-up.

The assumptions may not be concluded with certainty how music happened, but these assumptions can cause the contribution to the development of music that took centuries.

Music is something that comes naturally to the origin of life, human life, and sometimes may not even know. Music can be both science and art that are both directly and indirectly in helping people to be happy, and relaxed stress. It is a musical training for the mind to be joyful, fun, peace, relax, and happy [83], [84]. Sometimes, it can be the treatment of morbidity of the disease incredibly. Music is close to what is around them, so to maintain life from birth until death [85] The music is associated with unavoidable not only the use of music in movies, but also music has infiltrated all areas of human activity. Since the issue of the traditions, culture and faith are coming along with music [84], [86].

Music has a great influence on the psychology and physiology as the strength of the relaxation better than the other reinforcement. Music is the training process skills that can distract from external stimuli by focusing on what is being done to prevent the mind from obscurity. Moreover, music can enhance meditation and relaxation [18], which is appropriate for the elderly. The musical activities stimulate the emotional and mental health, and they can also enhance relationships.

2.4.2 Music Therapy

The American Music Therapy Association (2012) has developed a specific definition of music therapy treatment for the elderly that “Music therapy treatment is efficacious and valid with older persons who have functional deficits in physical, psychological, cognitive, or social functioning. Research results and clinical experiences

attest to the viability of music therapy even in those who are resistive to other treatment approaches. Music is a form of sensory stimulation, which provokes responses due to the familiarity, predictability, and feelings of security associated with it" [20].

Bussakorn (2011) describe that music therapy is happened to meet human needs in the field of safety and survival and the needs of being in society. Music therapy in Thailand can be divided in to 3 characteristics as: 1) Music therapy that is in the form of the activity that can be listening, singing, playing the music, 2) Music therapy for treatment in specific conditions that can be music listening in order to reduce pain, reduce stress, or reduce anxiety, and 3) Music therapy for the traditional events in the local area in the case of faith and believe [21].

2.4.2.1 The features of music therapy

Music therapy has characterized many aspects. It can be applied in all ages and features include a wide range of problems including ability to apply the skill level of the person easily, activate of the brain for many parts, encourage and promote the development of all aspects, help develop the social, emotional and mental skills, communication, and recognition.

2.4.2.2 The benefits of music therapy

Music therapy can be advantage in various forms in both young adults and older on target to meet the needs of different physical and psychological problems

such as impaired development of intelligence and learning, depression, anxiety, Alzheimer's disease, brain injury, physical disability, pain, and other conditions. The benefits of music therapy are concluded as following: 1) Positive thinking, 2) Anxiety / Stress Management, 3) Cognitive Skill, 4) Perception, 5) Attention Span, 6) Social Skill, 7) Communication and Language Skill, 8) Develop movement skills or motor Skill, 9) Muscle Tension, 10) Pain Management, 11) Behavior Modification, and 12) Therapeutic Alliance.

Music therapy has a wide range in its benefit depending on the adoption strengthen physically, mentally, emotionally and socially. This can be enhancing the quality of life by integrating with other treatments [87].

Kanjana conducted the quasi-experimental research with the purpose to investigate the effect of music therapy on depressed older adults in 130 older adults from 60 years old and over who were diagnosed with depression by the Thai Geriatric Depression Scale (TGDS). All subjects participated in music therapy group 8 times within 5 weeks. The result showed that the mean of the 10 older adults' depression scores before and after music therapy treatment were significantly different, and the level of depression among older adults in the follow up 4 weeks after treatment was lower than the depressive score before treatment, but higher than depressive score immediately after treatment [88].

2.4.2.3 The procedure and the form of music therapy

There is no format and process in music therapy. It will be designed to treat in individual by problems with an individualized treatment plan. The key steps are as follows [89].

1) Evaluating the treatment of patients – personal history and medical history - assess the problem and the desired target therapy - physical, mental, emotional, social, health and thinking skills assessment.

2) Planning the treatment - a program designed for individuals and groups based on a critical goal - to form the activity or processes as the musical composer, singing, and chorus imagination of

3) Treatment - Establish a relationship between the therapist and the recipient of the treatment sing instrumental music and music therapy combined with the treatment of other forms of integration.

4) Evaluating treatment - evaluate continuously and adjust their treatment accordingly.

2.4.3 The role and influence of music on the elderly.

2.4.3.1 Music experience and the elderly

Music experiences of the elderly refers to both music listening and playing experiences. Music experience is one of the key factors in promoting the well-being

and quality of life among elderly persons. The background of music experiences which refer to the experience of music listening and playing can be explained the well-being of the elderly. A number of studies have indicated that background music enhances performance of various tasks [90]. The results of the studies in background music was indeed important in examining their effects on human interaction. Music significantly enhanced satisfaction with communication. Music in the major mode appeared to encourage greater communication with others [90]. Moreover, music listening was also found to influence states of relaxation. The studies found significant effects of singing on psychological morale. Music background also had moderate-sized in the significant effects on stress. The constructs associated with the effects of music vary from study to study. Likewise, several terms for the relaxing effects of music listening were noted: relaxation, stress, anxiety. Another study found that the combination of music playing and music listening help reduce the emotional problems among the elderly [91].

2.4.3.2 Music preference and the elderly

Music preference refers to the preference of selecting song type to listen. The preference of music for listening is one of the key factors in promoting the well-being and quality of life among persons. The different types of music affected differently to the mood, and other emotional effects. The types of music have many genres and styles, and they are varieties according to the culture, area, or region of their origin. The common types of music might be categorized into classical and traditional, folk

traditional, popular, blues, country, jazz, and pop music. These types are different in their melody, lyrics, and instruments. The types of music may have an effects on the person's mood differently. One of the study on the effects of types of music on the cognitive and component of the stress, and found that the classical music that is calm and peaceful had the positive impact on cognitive and stress. One study in elderly people with calming music which is less than the rate of the heartbeat revealed that the elders who listened to the music for 10 minutes were less restless than the control group [92]. In this study, the types of music preference among the elderly were access for the types of "Look thung" referred to Thai country music which typically reflects the rural lifestyle, religious beliefs, and cultural and social patterns of Thailand, "Look krung" referred to Thai popular music or one of the international-style Thai music, "Thai deam" referred to Thai original music that is performed by the unique technique of Thai style, and "Sakon" referred to the international popular music.

According to the American Music Therapy Association (AMTA), music helps lower depression and decrease loneliness in older people. It suggests that by engaging in musical auditory experiences, we can alter our moods and outlook for the moment. The MTNA further states that by continuing to use these techniques, the effects of depression can be minimized. It may surprise you to know that actual studies have proven this hypothesis [20].

Several more scientific studies have also been done that show increased quality of life for individuals engaged in musical activities. The American Music Therapy Association has compiled a list of various benefits that can be derived from these activities when used by senior citizens.

Specific Outcomes:

• Reduced muscle tension improved self-image and increased self-esteem

• Decreased anxiety and agitation, and increased verbalization

• Enhanced interpersonal relationships and improved group cohesiveness

• Enhanced self-expression and self-awareness Increased motivation

• Improved perception and differentiation of feelings

• Improved ability to self sooth and cope with traumatic triggers

2.4.3.2 Musical activities and the elderly

Musical activities not only advance the learning of new skills but also help us enjoying our lives through enhancing emotional facets as well. The elderly usually experiences to the depression and loneliness. Music fills those hours for them with the activities that stimulates the brainwaves and give elders a sense of accomplishment and quality of life improves along with the mental well-being.

Music, dancing and movement activities can aid in maintaining walking endurance, improve range of motion, strength, functional hand movements and finger dexterity and improve limb coordination. For instance, using instruments (such as

drums) can be a motivating way to purposefully improve hand use, cross midline, and reach high/low. Co-treatment with an occupational or physical therapist also may enhance the effectiveness of music therapy strategies. Relaxation with music, toning (singing with vowels focused on a certain area in the body), and other techniques may help reduce the perception of pain and the need for pain medication [32], [93], [94].

Music therapy can increase bonding with others, cooperation with family members and support staff. By connecting with others and participating in a meaningful activity, many can alleviate feelings of isolation and loneliness. Studies show that group bonding and interaction with others may be more important in determining our overall health than any other health parameter such as diet, exercise or our genes. Group activities can promote positive, successful experiences with music while interacting with others. Successful experiences lead to increased self-esteem and foster self-express and creativity. Music therapy sessions can be a way for family members to spend meaningful time together in a creative, caring, and relaxing way either in the home or in a health care setting. It can bring intimacy for families through verbal and nonverbal interaction. Singing, songwriting, and playing musical instruments facilitate the expression of emotions even for someone who is not able to verbalize how they feel. Participating in meaningful music making or listening to music can help bring about changes in a person's mood or the way they feel [95], [96].

Coffman & Adamek (1999) examined the benefits of participating in a wind band toward elders' quality of life. The 52 participants were members of a Midwestern, United States wind band. The researchers found that, overall, participants believed that social relationships were the most important to quality of life; however, the main reason participants joined the band was the desire to make music. Coffman and Adamek made the recommendation that music therapists and music educators need to provide more opportunities for music engagement for healthy and active older adults [97].

2.5 ANGKLUNG INSTRUMENT

Angklung is an original, simple bamboo musical instrument of Indonesia known at least since the 18th Century. Angklung consists of 2-4 tubes of special black bamboo suspended in a white bamboo frame bound with rattan cords. The tubes are carefully whittled and cut by a master craftsperson to sound certain notes when the bamboo frame is shaken or tapped. Each Angklung produces a single note or chord. Thus, many players can each holding a single instrument and must collaborate together to play melodies. This develops teamwork, mutual respect (learning to live together), discipline, and artistic sense, even among players from different communities or nationalities. Traditional Angklung use pentatonic scale, while modern/ Angklung use dial tonic scale. Angklung is closely related with traditional customs, arts and cultural identity in West Java and Banten Provinces and elsewhere. Many philosophical values

are associated with the form of the instruments. Traditional Angklung are played during ceremonies, eg. rice planting time with the hope of a bountiful harvest, harvest time, circumcision, etc [98].

In Thailand, Angklung was imported in 1908 by Luangpradit Piroh from Java (Indonesia). The first Angklung imported was a pair of two cylinders that was very large and heavy. Playing Angklung use one hand to hold and another hand to rock or shake the vocal chords. Angklung that was originally imported had only five notes. Later, it was added more notes. Angklung are made with bamboo without any decoration [33].

Angklung is known for the unique voice. Angklung is a percussion instrument made of bamboo, and one player can play only two notes. The nature of Angklung symphonic orchestras requires 5 or more players. There are three rows of cylindrical piece of wood attached to a wooden trough. The characteristic of Angklung in Thailand is called “TAB.” One TAB of Angklung has only one note, so players are able to play only two notes. Angklung is now having all seven international notes system: Do, Re, Mi, Fa, Sol, La, and Ti. Playing Angklung with a beautiful melodic requires five players or more [33], [98].

2.5.1 Angklung and the Elderly.

In the elderly, Angklung helps promote the coordination of physical and tasks. Especially, the wrist of muscles for flicking Angklung also promotes memory and concentration in a note. The elderly will awake to the beat and learn the coordination

of the various organs. Playing Angklung requires the unity of the great performers to cause a melodic and harmonious. The music requires concentration to remember the notes accurately. Playing Angklung also enhance relationships because any single person cannot be played strictly with their obligations when it comes to shaking. The only one note cannot be played alone [88]. This related with the study of Thammaruja (2004) found that Angklung can create the harmony itself that can result in the increasing of self-esteem and the valuable and they can exchange comment to each other. These can create the good relationship and the participation in the activity.

It can be seen that music can help treatment for the illness for both physical and psychological aspects, especially Angklung instrument. Therefore, the researcher was interested in applying Angklung activities for the elderly in Maung district, Samutprakarn province because Samutprakarn province is one of the semi-urban area that the elderly people are rarely to participate the activity in the community and many of them are left at home from their family to work. This results in the psychological problems among the elderly in the long term, and also affects their quality of life. Consequently, music activity in the form of Angklung activity would be the guideline for improving the quality of life further.

2.6 REVIEW OF RELEVANT STUDIES

Tanratanakul (1999) has been organized Angklung music therapy in chronic psychiatric patients with the problems in both physical and emotional expression and aggression with 26 participants divided into 2 groups: control and intervention. They received a 1-month slow rhythm Angklung music therapy and medium for one month. Measurement before and after treatment were found to be different at a significance level of .05 of all the trials. Patients who participated in the Angklung music therapy were found to have a behavioral change [99].

Jananusart (1999) compared the results from the study "the use of music therapy activities and the muscle relaxation training on depression among elderly people in elderly nursing homes, Ban Bangkae, Bangkok." Fifteen patients were divided into three treatment groups: music events, muscle relaxation training group and the control group which comprised of five people per training program for 18 times with one hour, three times a week for six weeks. The results were found that both groups had lower depression than the control groupwith the statistical significance after the experiment [100].

Thammaruja (2004) studied the efficacy of recreational programs by playing Angklung in older people with depression. The samples of this study were the elderly living in Banglamung nursing home, Chonburi province. Twenty elderly people were divided into an experimental group and a control group of 10 people. The participants were trained by the prepared program, and the practice was three days a week for 6

weeks and one hour at a time. After the program, the depression of the elderly in the experimental group was less than before the program, and was less than the elderly in control group with statistical significance [35].

Suzuki et al. (2004) studied music therapy for patients with dementia using behavioral evaluation in patients with senile dementia in Japan with 10 samples. The study found that after using the music therapy for patients, the symptoms of irritability decreased significantly. From the findings of music study with the elderly it was agreed that music therapy can help treat the elderly people [101].

Jeon, Kim, and Yoo (2009) studied the effects of music therapy and exercise that there is a rhythm to life, health, blood pressure and strength of muscles in elderly women residing in nursing home for elderly women in Korea. It was found that music therapy and exercise rhythms had the positive effects on quality of life. Especially, on mental health, there was statistically significant difference in the experimental group for the diastolic blood pressure and strength of the arm muscles before and after music therapy [102].

Skingley and Vella-Burrows (2010) has study “the effects of therapy using music and singing in the elders, and the results revealed that music and singing can help in the treatment and therapy. The study found the benefits of music or singing that resulted positively in dementia patients, the diseases such as osteoarthritis, sleep problems and chronic pulmonary in the elderly residing at nursing home [103].

Thongwachira (2011) studied “the results of nursing by the use of music and environmental rearrangement for anxious behaviors in older adults with dementia. The objectives were to study the activities using music therapy and environmental rearrangement to reduce anxiety behaviors of older people with dementia among the elderly residing at nursing home, Bangkae, Bangkok with 32 patients participated in this study. The results of this study found that anxiety behaviors among the elderly at the end of the activities were lower than before with statistical significance. This shown that the activity of nursing has been effective in reducing anxiety behaviors in older adults with dementia. In 1st and 2nd weeks, the anxiety behaviors did not obviously decrease, but in the 3rd week, the behaviors have decreased markedly and slightly decline in a week later [104].

Wangwan and Sasat (2011) studied the effects of playing Angklung with the group process activities on the loneliness of the elderly in residential home. The study found that the elderly in experimental group after participated in Angklung activity with group process had the lower loneliness than before the activity with a statistically significant level of 0.05. Elderly participants who attended the Angklung activity with the group process had lower loneliness than the elderly in residential home who were received only usual care at the statistical significance level of 0.05 [36].

CHAPTER III METHODOLOGY

3.1 RESEARCH DESIGN

This study was the quasi-Experimental design with control and experimental groups with pretest and posttest. The design was used to examine the effect the Angklung intervention model for improving the quality of life among elderly people in Muang district, Samutprakarn province. The intervention was involved by using two groups pre-test and post-test for each group; and pre-test and post-test between groups design. The elderly people were divided into the intervention and control groups. The outcome of the intervention group was compared with control group which was located at Bangpakong district, Chacheongsoa province. The data was collected fourth times: the first time before the intervention implement, the second times after the completed intervention immediately, the third times at follow-up of 3 months, and at the 4 months. The research model was shown as follows:

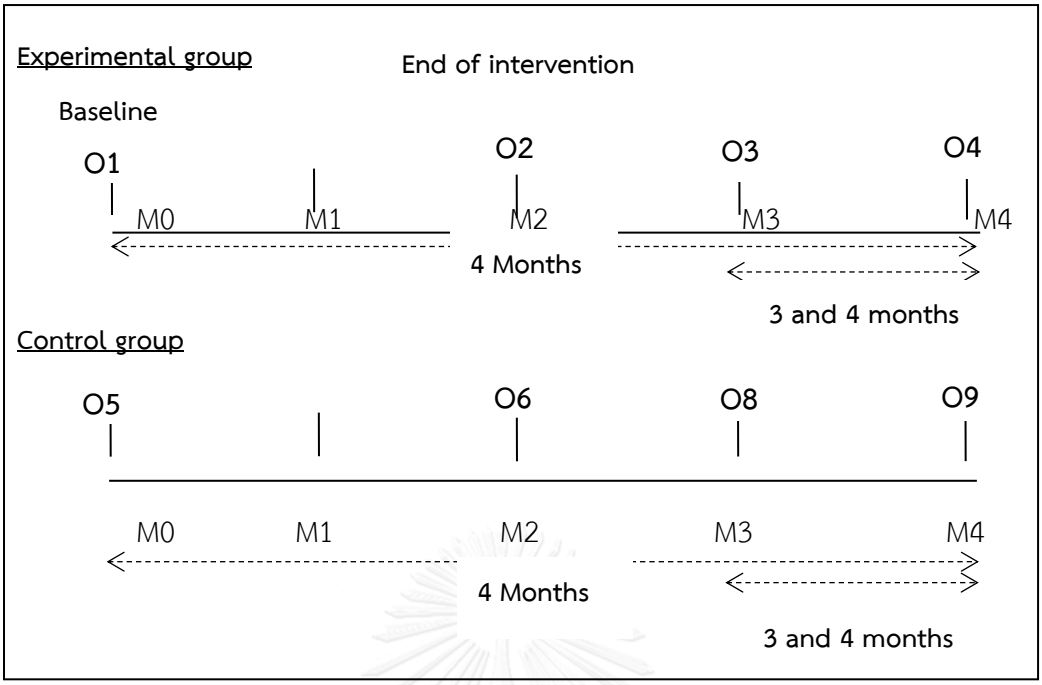


Figure 3.1: Study Design

O1 and O5 mean: the data collection at the pretest in the experimental and control groups before in the intervention (the 1st data collection).

O2 and O6 mean: the 2nd data collection at the 2nd month.

O3 and O7 mean: the 3rd data collection at 3rd month.

O4 and O8 mean: the 4th data collection at 4th month.

M0 – M2 mean: the 8 weeks of music intervention program to the elderly.

M3 – M4 mean: the follow-up periods of time which were two times: 3rd and 4th month after intervention with the interview questionnaire.

3.2 STUDY AREA

The study area was at Muang district, Samutprakarn province, Thailand. Researcher purposively selects this province because there were high numbers of elderly people age 60 years old and older. Samutprakan province is in the semi-urban areas of Thailand which is connected to Bangkok, Chachengsoa, and Samutsakorn province. Samutprakan province has 6 districts, 50 sub-districts and 375 villages. This area is likely to increase in the elderly community and change into the aging society. The numbers of elderly people living in Samuthprakarn were 63,920 people [37]. Samutprakarn has also been transited to the rapid growth of the industrial movement and the changes of the economic, social, and lifestyle including family pattern. Due to the changing, many of them were living at homes by themselves and rarely have the opportunity to participate in the community.

Maung district is located at the South-Western part of Samutprakarn province. The total area of Maung district is 190.557 km^2. There were 13 sub-districts and 86 villages in this district. Samrongnua sub-district was purposively selected because it has been likely to increase in the elderly community, and the elderly people in this area were being neglected and rarely to participate to the activity. In 2015, about seven hundred people aged 60 and over live in this sub-district. Researching in this area can provide researcher with useful information in regard to the quality of life and

the opportunity to participate in the community. Consequently, this area was selected to be an experimental area.

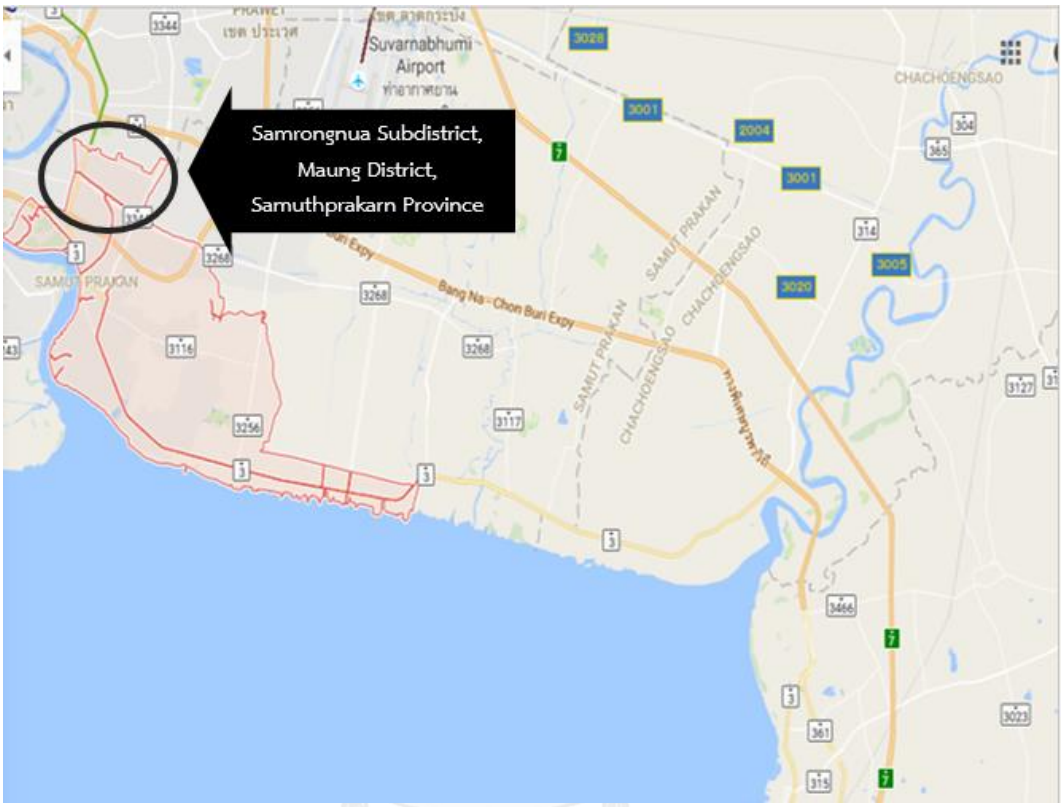


Figure 3.2: Study Area

The control area was taken place in Chacheongsoa province. This province is also the semi-urban areas of Thailand which is connected to Bangkok, Samutprakarn, Chonburi, Prachinburi province. This province is also likely to increase in the elderly community. The numbers of elderly living in Chacheongsoa province were found 58,591 people.

This province has been transited into the industrial area and the change of family pattern and the caring of elderly trend have also been found in this area.

Bangpakong district located at the West of Chacheongsoa province. Total area of Bangpakong district is 257.893 km^2. There were 12 sub-districts and 114 villages in this district. Bangkua sub-district was purposively selected as a control area. This area was chosen because the similarity of the economic status and the pattern or trend of the elderly's life to the experimental area.

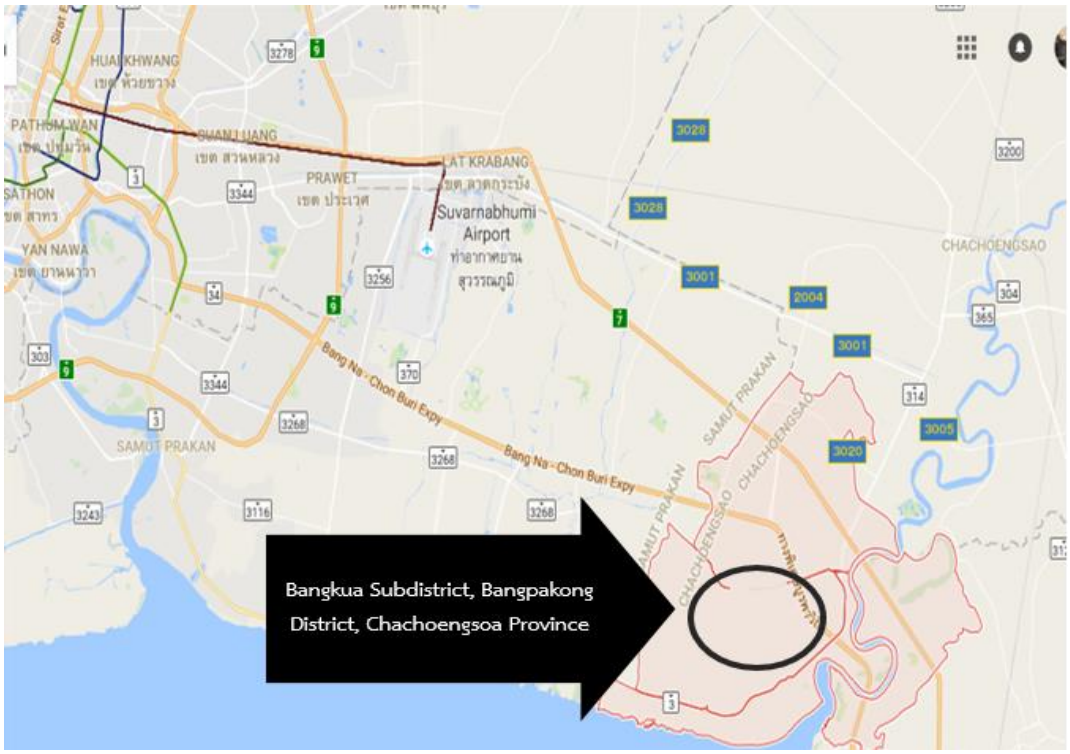


Figure 3.3: Control area

3.3 STUDY POPULATION

The study population was both male and female aged 60 years and over who had been living in Maung district, Samutprakarn province, the province in metropolitan area of Thailand that had been being likely to increase in the elderly community and

reported the poor quality of life. Many of them has been living in homes alone and rarely have had the opportunity to participate the activity in the community. In this study, the researcher determined the criteria for the selection conducted as follows.

Inclusive Criteria

- Age 60 years and above
- Having no serious disease
- Able to sit for 1-2 hour
- Able to speak with no hearing problem
- Willing to participate in this study
- No plan of moving out of the study area within 1 year.

Exclusive Criteria

- Participants with cognitive impairment.
- Participants with physical impairment.

3.4 SAMPLE AND SAMPLE SIZE

G. Power was used for calculating the sample size, which was in accordance from the previous research [105] with the effect size of 0.55, a two-tailed, α error of 5%, and a power of 80%. The total sample size calculated was 106.

The total sample size calculated in this study was added up 10% for dropout rate. Therefore, the total participants were 118, which were 59 persons in each group (intervention group and control group).

3.5 SAMPLING TECHNIQUE

The study used the purposive sampling technique to select the participants. The procedure is shown as follows:

Step 1: The purposive sampling was used in the study. Muang district, Samuthprakarn province was purposively selected to be the experimental group because the high in current rate of the elderly (24,623 elderly people) were living in Muang district. Almost half of the elderly has been living with the chronic diseases (Thai Information Center, 2015). Many of them have been living at home alone by themselves and rarely have had the opportunity to participate in the community. Bangpakong district, Chachengsoa province was purposively selected to be in the control group because of its similar in characteristic to Muang district, Samuthprakarn province.

Step 2: Sub-district of the sample was purposively selected by selecting one sub-district from 13 sub-districts in Maung district. In this research, Sumrongnua sub-district was selected to be the experimental group. For the control group, one sub-

district was purposively selected from 12 sub-districts in Bangpakong district. In this research, Bangkua sub-district was selected to be the control group.

Step 3: The process of selecting a sample to study groups of 59 people in each group. At this stage, the researcher selected the eligible samples for the study of each group. First of all, the researcher contacted the community for recruiting the elderly to be the participants in the research by the announcement including the poster advertisement and the community radio. The eligible elderly was randomly selected from the list of their name. 59 elderly people that were required to be the samples of this study were included in the study. The remaining of elderly was described that they would attend the activity to the next time.

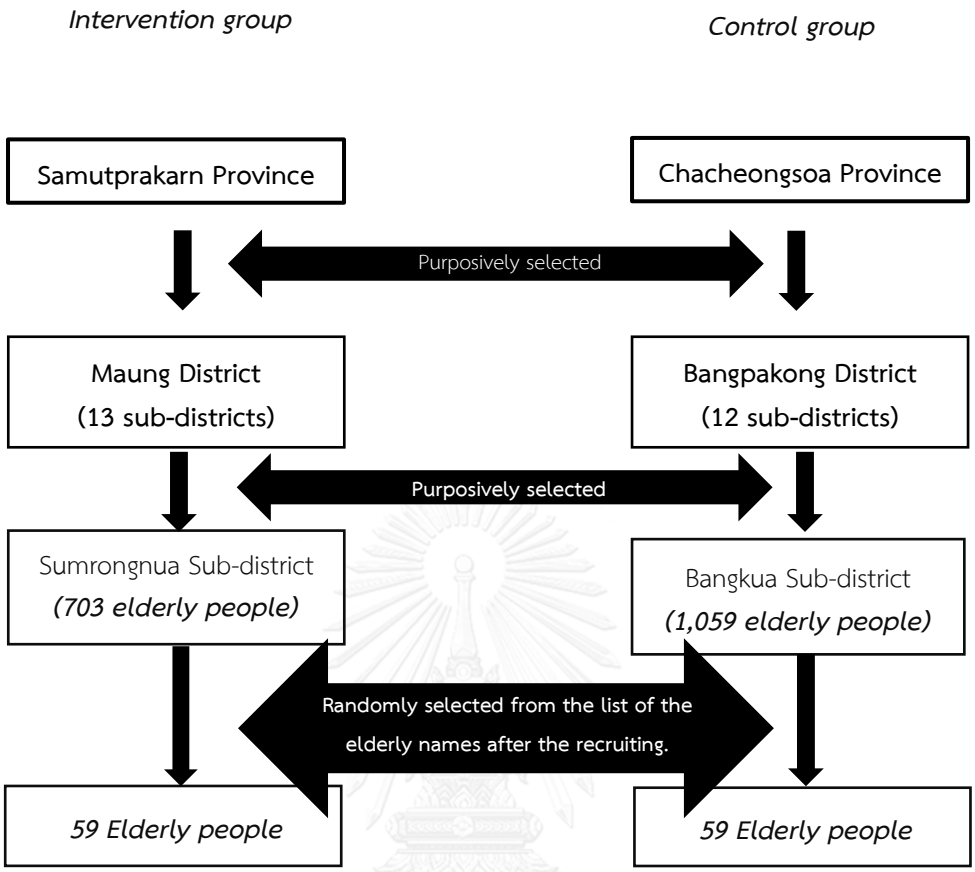


Figure 3.4: Sampling Technique

3.6 RESEARCH PROCEDURES

In this study, music activity (Angklung intervention model) was used as a tool for improving the quality of life of elderly people in Maung district, Samutprakarn province. The study was conducted based on activity theory developed by Robert (1960) in the form of music intervention (Angklung activity) which consisted of the processes as follows.

1. Reviewing the literature regarding the activity theory developed by Robert (1960) and music activity in the form of Angklung instrument activity for the concepts and processes.

2. Determining the activities: The theory of the elderly (activity theory) of Robert (1960) in the form of music activity consists of four phases: preparation stage, initial stage, operating activities, and final state.

3. Determining the contents of the activities to cover the goal in the quality of life, the activity, and the music among the elderly.

4. Music activity, a common practice in the form of Angklung music activity conduction.

Stage I: preparation and planning of the activities. The design features defined the period of activity.

- A letter from the College of Health Sciences was submitted to request permission for entering to the area of research, indicating the objective, duration of study, guidelines and procedures for data collection in this study.

- Setting up the meeting with the assistants to identify the process of the research. This included the description and the detail regarding the instrument use that was the Angklung including any other basic of music for introduction and the understanding (This was cooperated from the faculty of Art,

Chulalongkorn University with an expert in Thai music and Angklung). The assistants were also described about the program to improve the quality of lives of the elderly as well as discussed the problem and the idea from the assistant.

Stage II: Initial stage (week 1)

- Implementing the intervention of program to improve quality of life. The researcher described the intervention information and details: introduction and summary of program such as the period of time, purpose, action, and evaluation of program after intervention.

- Baseline was tested for evaluating the quality of life of elderly before the activity start to assess the quality of life of the sample which composed of 6 domains: Sensory abilities, Autonomy, Past, Present and Future activities, Social participation, Death and Dying, and Intimacy using WHOQOL-OLD (2006) (Rattana, 2013).

The study participants were divided into two groups:

1. Intervention Group

This intervention group was set up into the music intervention, and the design was collaborated with an expert in music activity with an Angklung expert who was the instructor for the instrument and music activity from the faculty of Art, Chulalongkorn University. The intervention program consisted

of a total eight weeks (2 hours each time) regularly on Sunday at 9.00 to 11.00 a.m., and the place was at the Samrongnua municipal district meeting room. The sessions at the community consisted of interactive and practical Angklung training.

Angklung activities

Instrument: Angklung in this activity was the Indonesia (JAVA) Angklung because it is light weight that is more appropriate for the elderly than Thai Angklung which is very heavy. Moreover, a sound system can be played in a variety of international music. It is also the intention of the research in preparation to welcome the visiting of the economic integration of ASEAN as well.

Figure 3.5: Javanese Angklung

Music used: Music used in the activity was the song which the elderly in the intervention group had the opportunity for choosing the song by themselves. The songs were listed from the music professional or music

therapist for proving the appropriation and benefit for the elderly. The songs in the list were the various kind of song including the song that elderly is familiar such as Thai folk song, Thai classic song, Thai old-style song, western song, and traditional song. The songs have to be easy to play and have the simple notes. Moreover, the songs have to have the interactive and movement for the elderly movement. The examples of the songs were Loy Kratong song, happy birthday song, Chang song, and New Year song. Yamko Rambe Yamko, the song from Indonesia, which provided the well movement was included in the activity. The songs which formed the activity that was the highlight of the activity was included in this intervention.

How to Practice

1. Know how to hold and shake

2. Start learning how to play the Angklung by the simple notes: Loy Kratong song (To be understood by older people because everyone can sing this song).

3. Train singing alternated with playing Angklung instrument.

4. Train movements and singing with the beat along with song

5. Practice singing and craping the hands alternated with shaking Angklung to build the relationship with others.

How to play Angklung

The elderly could hold only one Angklung. The left hand holds the middle of the Angklung loosely, and the right hand holds the bottom of Angklung to shake the Angklung in the right and left quickly and alternately. This cause the sound in the middle of a bamboo shaken with the edges of two pieces of wood on both sides.

Figure 3.6: How to hold Angklung

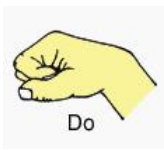
The Angklung was played by using a hand signal from the conductor standing in the front and center. The meaning number of 1-7 which shows by hand is the notes in the table shown below as table 3.1.

Benefits of playing Angklung

While playing Angklung, the elderly needs to concentrate on playing with the notes and vision to recognize the hand signals. The elderly needs to move the body to the left and right along with the rhythm of music with singing and clapping the hand to the rhythm that need to be done with correct melody.

The benefits of playing Angklung of the elderly are to practice perception of hearing, sight, and movement, clapping to the beat, and singing simultaneously. Therefore, nerve-related awareness will be urged to work harmoniously.

Table 3.1*:* The example of the hand signs and notes that will be adapted to be appropriated for the elderly people

Note	Kodaly Hand Signs	Hand signs for elderly
D / 1		
R / 2		

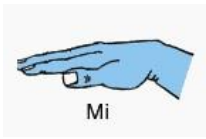
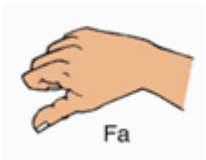
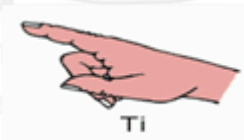
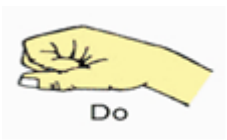
Note	Kodaly Hand Signs	Hand signs for elderly
M / 3		
F / 4		
S / 5		
L / 6		
T / 7		
D* / 1*		

Table 3.2: The notes and songs that appropriate for using in the training among the elderly

Loy Kratong song (the easy note that is good for the beginner)

- - - -	- 5 - 5	- 3 – 5	- 6 - 1*	- - - 2*	- 1* - 6	- - - 5	- 5 – 3
- - - 5	- 6 - 1*	- - - 6	- 1* - -	- 5 - 6	- 1* - 2*	- 1* - 6	- 5 – 5
- - - -	- 1* - 1*	- 1* - 1*	- 1* - 1*	- - - -	- 5 - 5	- 5 - 5	- 5 - 5
- - - 1*	- 1* – 1*	- - - 2*	- 3* - -	- 3* - 2*	- 1* - 6	- 5 - 6	- 1* - 2*
- - - -	- 3* - 3*	- 3* - 3*	- 3* - 3*	- - - -	- 1* - 1*	- 1* - 1*	- 1* - 1*
- - - 1*	- 6 - 5	- 6 - 1*	- 6 - 1*	- - - 1*	- 6 - 5	- 6 - 1*	- 6 - 1*

Yamko Rambe Yamko from Indonesia (full movement)

- - - -	- - - -	- - - -	- - - 1*	- - - -	- 5 - 5	- 6 - 3	- 5 - 6
- - - -	- - - -	- 5 - 5	- 6 - 2	- - - -	- - - -	- - - 3	- - - 1

- - - -	- - - -	- - - -	- - - 1*	- 5 - 5	- 5 - 6	- - - 5	- 6 - 5
- 6 - 1	- 2 - 3	- - - 2	- 3 - 2	- 3 - 1	- 2 - 3	- - - 2	- - - 1

- - - -	- - - -	- 5 - 5	- 5 - 6	- - - -	- - - -	- 5 - 5	- 6 - 2
- - - -	- - - -	- 1 - 1	- 2 - 3	- - - -	- - - -	- 2 - 2	- 3 - 1

Happy Birthday Song

- - - -	- 5 5 6	- - - 5	- 1 - 7	- - - -	- 5 5 6	- - - 5	- 2 -1
- - - -	- 5 5 5˚	- - - 3	- 1- 7	- - 6 -	- 4 4 3	- - - 1	- 3 - 2
- - - -	- 5 5 6	- - - 5	- 1 -7	- - - -	- 5 5 6	- - - 5	- 2- 1
- - - -	- 5 5 5˚	- - - 3	- 1 - 7	- - 6 -	- 4 4 3	- - - 1	- 2- 1

2. Control group

The elderly was not be trained for the Angklung practice. They attend only the usual community event.

Stage II: Initial stage (week 1) Cont.

- Experimental group was set up for the meetings to create an understanding of how to operate and configure. The objective of the music activity as a tool to improve the quality of life in elderly and the process of the activity was explained to the participants. The music, notes, instrument (Angklung), and how to hold the instrument were introduced. The elderly was first trained how to play Angklung for understanding (seven sound using the notes digits). The elderly had the activity in the group for choosing the song or the kind of music they would like to play by the music preference from the lists of songs which were provided by the music professional and proved to be the songs that were appropriated for the elderly. The song lists were including the various kinds of song such as Thai folk song, Thai classic song, Thai old-style song, western song, and the traditional song. The elderly participated to have the opportunity for choosing the kind of music and lyrics.

Stage III: **Operating activities (Music stage): 2nd week to 7th week**

- The practicing of Angklung was introduced beginning with the short song with the simple notes (Loy Kratong song). The music activity was operated by practicing the song with the expert instructor who was trained and assigned to create the application of the training which is appropriate for older people. Each week the difficulty of the note for playing increased with the variety of notes from simple notes to difficult notes which contain many dynamic of the song. The activities were included sing and move or dance alternating with playing Angklung.

Stage IV: **Final stage (8th week)**

- The monitoring and evaluation stage: The aim of this was to evaluate the quality of life after the activity at the end of two – month music intervention. The participants who allocated to the intervention group entered a two- month follow-up period. This study follow – up three times consisting of the end of intervention (2nd, 3rd, and 4th months.

- The final of the music activity was performance in the festival or the traditional day such as Loy kratong song, Happy Birthday song, New Year song and etc.

Table 3.3: The procedure of intervention program

Week	Purpose	Activity	Duration	Materials and responsible person
0	- Preparation and planning of the activities. The design features defined the period of activity.	**Stage I: preparation and planning** 1. Preparing and planning of the activities. 2. Designing features and the period of activity. - A letter from the College of Health Sciences was submitted to request permission for entering to the area of research, indicating the objective, duration of study, guidelines and procedures for data collection in this study. - Setting up the meeting with the assistants to identify the process of the research. The assistant was also described about the program to improve the quality of lives of the elderly as well as discussed the problem and the idea from the assistant.	-	Materials - responsible person - researcher - Research assistants
1	- To implement the intervention of program to improve quality of life. - The introduction and summary of	**Stage II: Initial stage** 1. Explain the purpose of the Angklung activity as a tool to improve the quality of life in elderly. 2. The researcher, research assistant, music conductor	2 hours	Materials - Power point - Blackboard - Angklung Responsible person -Researcher

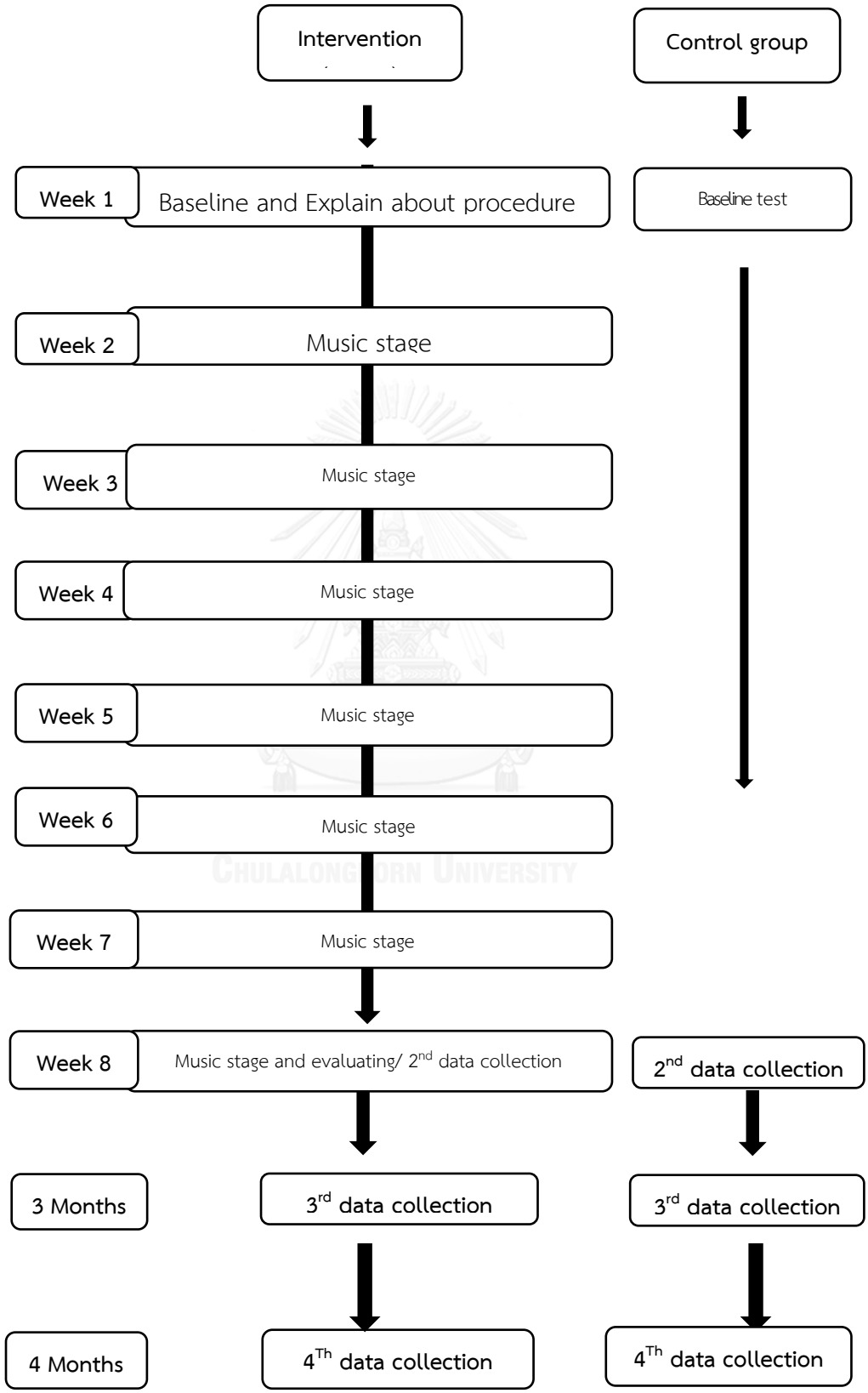
Week	Purpose	Activity	Duration	Materials and responsible person
	program such as period of time, purpose, action, and evaluation of program after intervention. - To provide information to the group in the first session	introduce themselves to build relationships - The researcher described the intervention: introduction and summary of program such as period of time, purpose, action, and evaluation of program after intervention. 3. Identify research objectives and the process of collecting data. 4. Stating the ethical consideration in research and the participants signed the consent to participate in the study 5. Baseline was tested for evaluating the quality of life of elderly before the activity start. 6. Experimental group was set up for the meetings to create an understanding of how to operate and configure. - The objective of the music activity as a tool to improve the quality of life in elderly and the process of the activity. - Music, notes, and instrument (Angklung) were introduced. *- How to hold and shake the instrument was introduced.* *- The elderly had the activity in the group for choosing the song or*		- Research assistants - Music Professional (Instructor)

Week	Purpose	Activity	Duration	Materials and responsible person
2	- Operating music (Angklung) activities	*the kind of music they would like to play by the music preference from the lists of songs.* **Stage III: Music stage** 1. The practicing of Angklung was introduced beginning with the short song with the simple notes. 2. Reviewing the last week practicing at the first 15 minutes: holding and shaking the Angklung. 3. The music activity was operated by practicing the song with the expert instructor who trained and assigned to create the application of the training which is appropriate for older people. 3. The beginning with the easiest song, Loy kratong song because everyone can sing this song - Train singing alternate with playing Angklung instrument to create the relationship.	2 hours	**Materials** - Blackboard - Angklung - Keyboard - the tall narrow drum (tom-tom drum) **Responsible person** -Researcher - Research assistants - Music Professional (Instructor)

Week	Purpose	Activity	Duration	Materials and responsible person
3 ↓ 7	Music (Angklung) activities	**Music stage (3rd to 7th week)** 1. Beginning with first 15 minutes building up the relationship of the elderly and the review of last week practicing. 2. Each week, the song was increased the difficulty and the variety of notes from simple notes to difficult notes which contain many dynamic of the song. These songs were operated from the decision of the elderly at the activity of choosing the songs which were Loy Krathong song at the first week, and Yamko song. The activities were included singing and moving or dancing alternating with playing Angklung. 3. Trained singing alternate with playing Angklung instrument. 4. Trained movements and sing with the beat along with song. 5. Practice singing and craping the hands alternated with shaking Angklung to build the relationship with others. 6. Every song that the elderly practice was run up 1 time before the end of each session 1 round with all songs.	2 hours	**Materials** - Blackboard - Angklung - Keyboard - the tall narrow drum (tom-tom drum) **Responsible person** -Researcher - Research assistants - Music Professional (Instructor)

Week	Purpose	Activity	Duration	Materials and responsible person
8	- To monitor and evaluate - To summarize the activity	**Stage VI: Final stage (8th week)** - The monitoring and evaluation stage. - The aim of this was to evaluate the quality of life after the activity at the end of two months music intervention - Researcher summarized the activity to all the members and discussed the questions from the participants. - Summary of activities for the members to express comments on the event and also asked the questions after completing activities. - After research completed, the activity of the meeting among the elderly was created to build up the relationship between the elderly and the researcher expressed the gratefulness to the participants. ** After the practicing of Angklung music have done, the elderly had the performance of their activity of Angklung that might be on the Loy Kratong festival or New Year. ***	2 hours	**Materials** - Blackboard - Angklung - Keyboard - the tall narrow drum (tom-tom drum) **Responsible person** -Researcher - Research assistants - Music Professional (Instructor)

Figure 3.7: Diagram of intervention



3.7 MEASUREMENT TOOLS

3.7.1 Questionnaire

The research instrument used in this study was the questionnaires with four parts as follows:

Part I: Socio-demographic information

This part consisted of nine questions about the data of individuals such as age, gender, marital status, income, education level, and living status, occupation, number of members living in the same household, individual outcome, status of sufficiency income and savings, caregiver, caregiver during sickness.

Part II: Health status and health care access

This part consisted of nine questions: history of illness, health complaints, history of alcohol consuming, smoking behavior, history of physical checkup, experience of health care service visiting, history of health care accessing, and health insurance.

1) History of illness

The history of illness refers health status that was diagnosed by healthcare professional including diabetes, hypertension, heart diseases, and other chronic diseases.

2) Health Complaints

Health Complaints included visual impairment, hearing impairment, sleeping problem, recognition impairment, urinary incontinence, and other impairments.

3) History of alcohol consuming

Alcohol consuming refers any alcohol beverage that the elderly participants have consumed usually. This was categorized into “Never drinking” referred to nondrinking elderly, “Ex-drinker” referred to the elderly who used to drink alcohol but had stopped drinking, and “Current drinker” referred to the elderly subjects who have still been drinking alcohol.

4) Smoking behavior

Smoking behavior refers to smoking with any tobacco that the elderly participants smoked. This was categorized into “Never smoke” referred to nonsmoking elderly, “Ex-smoker” referred to the elderly who used to smoke but had stopped smoking, and “Current smoker” referred to the elderly subjects who have still been smoking.

5) History of physical check up

History of physical check-up was the history of any physical examination by health providers that the elderly has ever had the examination. This was measured by the frequency of the examination and the follow-up.

6) Place of health care services or access.

Health care services access refers to the subjects' experience of health care visited if they had any health problems consisting of five items including health care professional visiting at regional, general and community hospitals/ clinic, medicine from pharmacy, Thai traditional medicine, and not accessed to the services.

7) Health insurance

Health insurance refers to the current health insurance that subjects were used to access the health care services. The answer included having no insurance card, 30 baht universal coverage, government officer health care benefit, social security, and private insurance.

Part III: Quality of life (WHOQOL-OLD)

WHOQOL-OLD: These questionnaires were adopting The WHOQOL–OLD module composes of 24 Likert–scaled items assigned to six facets: "Sensory Abilities" (SAB), "Autonomy" (AUT), Past, Present and Future Activities (PRF), Social Participation (SOP), Death and Dying, Intimacy (DAD), Intimacy (INT). The

score of these six facets of WHOQOL–OLD module can be combined to produce a general (Overall) score of quality of life among older adults, denote as the WHOQOL – OLD module “total score” [9].

Questionnaires, WHOQO-old consists of 24 questions with the questions that are meaningful, positive 17 questions, and the questions that are meaningful negative 7 items of sections 1, 2, 6, 7, 8, 9 and 10, each of the scale. The score is

	Positive question	*Negative question*
Strongly agree	= 5	1
Agree	= 4	2
Not sure	= 3	3
Disagree	= 2	4
Strongly disagree	= 1	5

Elements of the questions

1. Physical ability including items 1, 2, 10, and 20
2. The ability to make decisions including 3, 4, 5, and 11.
3. The component of activity ever done in the past, doing now and will do in the future, including 12, 13, 15, and 19.
4. The element of social relationships, including 14, 16, 17, and 18.
5. The element of thinking about death including item 6, 7, 8, and 9.

6. The element of sexual intimacy, including 21, 22, 23, and 24.

Interpretation

1. Average scores ranging from 4-20 in each particular. The scored 20 points, higher in the percentage of results has the better quality of life

2. The total quality of life with scores ranging from 24 - 120 points when the totals of all the respondents scored can be compared with the norms given below.

Score 24 - 55 points (20 to 46.4%), indicating a poor quality of life.

Score 56 - 88 points (46.5 to 74.0%), indicating a mid-life quality.

Score 89-120 points (74.1- 100%), indicating the high quality of life.

Part VI: Community participation and music preference

These questionnaires of community participation and music preference were used to explore the participants' experiences including the experience of attending community activities in both the traditional events and the activities that the community provides, the experiences of music listening, and the experiences of music playing among the elderly. The kind of music preference referred to the types of music that the elderly preferred to listen comprised of 4 types: 1) "Look Thung" defined as Thai country music which typically reflects the rural lifestyle, religious beliefs, and cultural and social patterns of Thailand, 2) "Look Krung" known as Thai popular music or one of the international-style

Thai music which is written in the form of a smooth poem explaining a sense of community with emotional tone of the soft, delicate, and intricate lyrics, but more polished and urban style compared to Thai folk music, 3) “Thai Daem” defined as Thai original music that is performed by the unique technique of Thai style which can be only instrument or instrument with singing, and 4) “Sakon” referred to the international popular music that is imported and being widespread in Thailand with its originally international for both lyrics and melody instruments as well as singer, songwriter, and music meaning. This part consists of 18 questions.

3.7 QUALITY OF MEASUREMENT TOOLS

The quality of life was adopted from the standard questionnaire from WHOQOL group. This set of questionnaires was tested the valid of questionnaire by WHOQOL group, and it was used widely in 22 countries around the world. WHOQOL-Old questionnaire was authorized by Mike Power [9, 71] (WHOQOL group director) to translate from English to Thai language. The questionnaire was carefully translated from English to Thai. Then, it was retranslated from Thai to English again to confirm the context and meaning of the questionnaire from the original of WHOQOL group.

3.8 DATA COLLECTION

The data collection was gathered by using face-to-face interview questionnaires by trained research assistants as the steps below:

1. The training course for research assistants was conducted by researcher and experts. They were trained for the interview and the intervention process in the necessary information.

2. The participants in the study were required to sign the consent form prior the participation.

3. The researcher and trained research assistants conducted the structural interview by using face-to-face interview, and all the data were checked for the completion of the questionnaire.

3.9 DATA ANALYSIS

The researcher collected the data manually, and SPSS for window was used for analyzing the data. The statistical used are shown as follows.

Statistical	**Reason**
1. Descriptive statistics (frequencies, means, and standard deviations)	To analyze frequency and percentage, mean and standard deviation of socio-demographic factors.

Statistical	Reason
2. Chi – square (X^2) (Categorical data)	To compare the association of socio-demographic characteristics between the intervention and control group
3. T-test 3.1 Independent t – test (Continuous data)	To compare mean score between the two groups on the baseline characteristics and quality of life between the intervention and control group
4. Repeated measure analysis of Variance. (ANOVA)	To compare the change overtime in quality of life (at the end of intervention 3, and 4 months comparison at base line).
4. Repeated measure analysis of covariance. (ANCOVA)	To compare the change overtime in quality of life (incorporate a "covariate") at the end of intervention 3, and 4 months comparison at base line.

3.10 ETHICAL CONSIDERATIONS:

This study was approved by The Ethics Review Committee for Research Involving Human Research Subjects, Health Science Group, Chulalongkorn University. Participants received both written and verbal information before they agreed to

participate. They had the right to refuse to participate in the study. The participants can withdraw from the study at any time. Their information was kept confidential.

CHAPTER IV RESULTS

This chapter includes the results and the interpretation of the data from the study. This study was the quasi-experimental with experimental and control study that aims to evaluate the effects of Angklung intervention model for improving the quality of life by using WHOQOL-OLD questionnaire. The study purposively selected the study area from Samutprakarn and Chacheongsoa province. Samrongnua sub-district, Maung district, Samutprakarn province was an intervention area and Bangkua sub-district, Bangpakong district, Chacheongsoa province was a control area. This study included the elderly people who are 60 and older. A total of 118 elderly were enrolled in the study both in intervention and control group (59 elderly each group). During the third evaluation one sample was dropped out for each the intervention and control group, and during the fourth evaluation one sample was dropped out from the intervention group because she has moved out. Therefore, there were 57 participants remaining in the fourth evaluation for the intervention group and 58 participants remaining in the control group as shown in the flow chart of the participants (figure 4.1).

This chapter consists of three components: 1) socio demographic characteristics of the participants, 2) the quality of life of participants (WHOQOL-OLD), and 3) the effects of the Angklung intervention program.

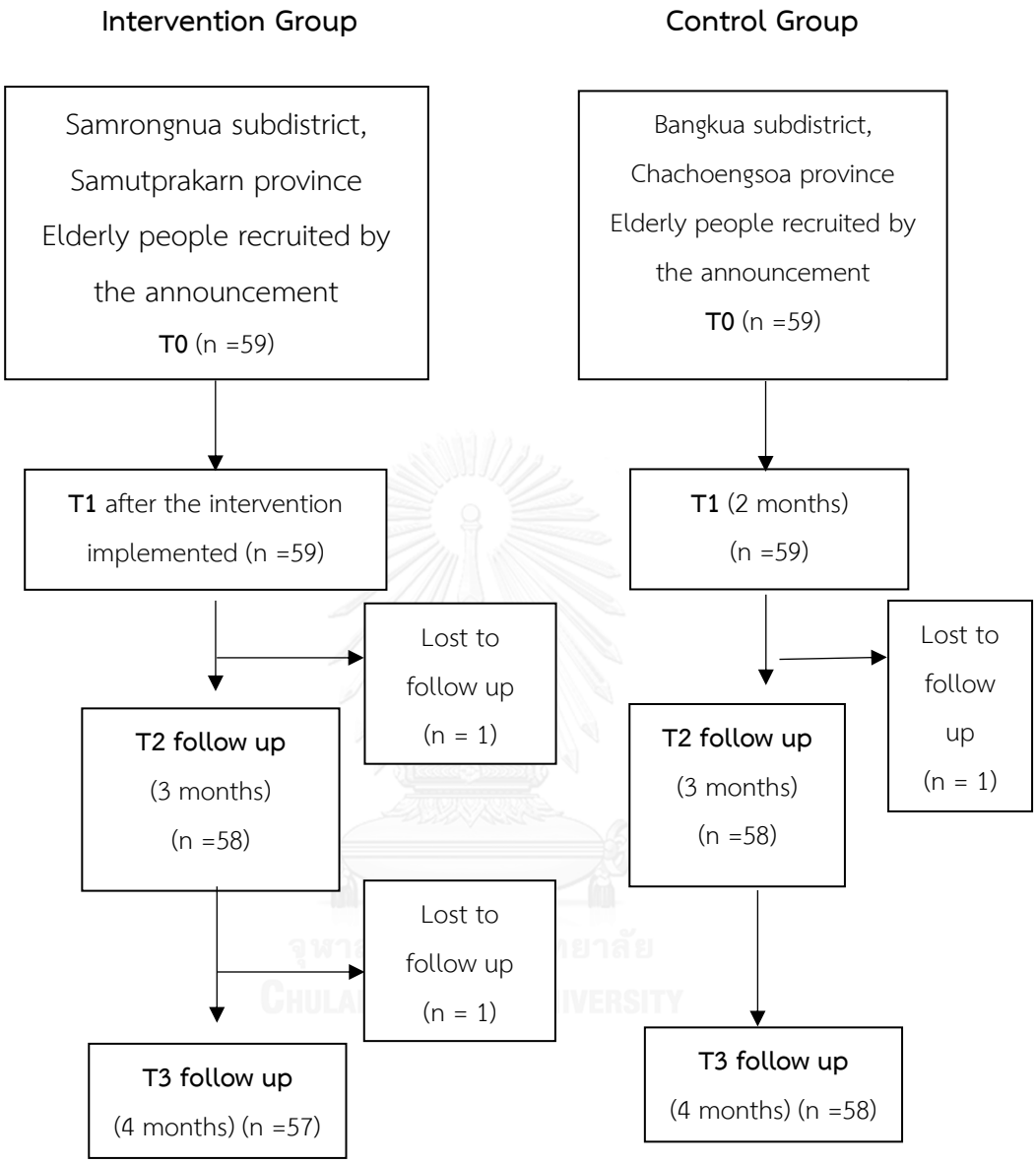


Figure 4.1 Flow chart of the study participants of the Angklung intervention model

4.1 BASELINE CHARACTERISTICS OF THE PARTICIPANTS

Age of respondents was not statistical difference. Mean age of the intervention group was 66.49 (SD = 4.46), and mean age of the control group was 67.46 (SD = 4.73). The findings revealed that gender between intervention and control group was statistically different (p-value = 0.024). The marital status in both intervention and control group were similar. Most of the participants were married (64.4% of control group and 59.3% of the intervention group). In educational level, there was significant difference between the intervention and control group (p-value = 0.031), and most of them were at the primary school level (51.6% of intervention and 81.4% of control group) as shown in table-4.1.

Economic Status: About half of the participants in the intervention group (54.2%) were unemployed, and almost half of participants in the control group (47.5%) was unemployed. In the term of occupation, there was no difference between the intervention and control groups. The average of the participants' income was found 7440.68 (S.D. = 8380.79) in the intervention group and 4771.19 (S.D. = 4393.14) in the control group with significant difference (p-value = 0.032). For the sufficiency of their income, in the intervention group 32.2% of them reported that their income was Sufficient but not for saving, but for the control group the participants reported "not sufficient and in debt" the most (37.3%) with statically significant difference (p-value=0.036) as shown in table 4.1.

For the number of children and number of family member, the findings showed that the number of children and the number of family member between the intervention and control group were not difference. More than fifty percent (59.3%) of the intervention group have 2 children or less followed with 3-4 children (35.6%) and more than 5 children (5.1%). In the control group, most of them (52.5%) had 3-4 children followed by less than or equal 2 children (42.4%) and more than 5 children (5.1%). In term of number of family members who were living with the elderly, most of the participants in the intervention group have ≤ 2 persons (54.2%) followed with 3-5 persons (37.3%) and more than 5 persons (8.5%). In the control group, the elderly were living with less than or equal 2 persons the most which found 47.5% of the participants followed by 3-4 persons (35.6%) and ≥ 5 family member (16.9%) as shown in table 4.1.

Table 4.1: General Characteristics of participants at baseline

General Characteristics	Intervention		Control group		P-value
	n	%	n	%	
Age (Mean ± SD)	66.49±4.46		67.4576±4.73		0.256
Gender					
Male	5	8.5	14	23.7	0.024
Female	54	91.5	45	76.3	
Marital Status					
Single	1	1.7	0	0	
Married	35	59.3	38	64.4	0.376
Widow	11	18.6	15	25.4	
Divorced/Separated	8	13.6	5	8.5	
Living together without Marriage	4	6.8	1	1.7	
Educational Level					
No education	5	8.5	3	5.1	
Primary School	34	57.6	48	81.4	0.031
High School	13	22.0	4	6.8	
Higher	7	11.9	4	6.8	
Occupational					
Unemployed	32	54.2	28	47.5	
Retired Employees	3	5.1	5	8.5	
Trading	8	13.6	10	32.3	0.276
Agriculturists	0	0.0	4	16.9	
Labor	15	25.4	12	20.3	
Business owner	1	1.7	0	0	
Income (Baht/month) (Mean ± SD)	7440.68±8380.79		4771.19±4393.14		0.032

General Characteristics	Intervention		Control group		P-value
	n	%	n	%	
Sufficiency of the Income					
Not sufficient and in debt	14	23.7	22	37.3	
Not sufficient not in debt	16	27.1	21	35.6	0.036
Sufficient but not for saving	19	32.2	14	23.7	
Sufficient and enough for saving	10	16.9	2	3.4	
Number of Children					
≤ 2 persons	35	59.3	25	42.4	0.166
3 -4 persons	21	35.6	31	52.5	
≥ 5 persons	3	5.1	3	5.1	
Number of Family members					
≤ 2 persons	32	54.2	28	47.5	
3 -4 persons	22	37.3	21	35.6	0.376
≥ 5 persons	5	8.5	10	16.9	

* P-value was calculated by using Chi-square test for nominal data and independent T-test for continuous data (accepted level is 0.05).

Health Status and Health Care Access

In terms of ***health status***, the results were shown that the history of illness was not statistically significant difference between intervention and control group (p-value = 0.969). Hypertension was the highest disease among the chronic diseases in both intervention and control group (45.82% and 69.5%, respectively) followed by diabetes (22.0% and 28.82%, respectively), and hyperlipidemia (28.8% and 30.5%, respectively). The hypertension disease was found statistically significant difference between intervention and control group (p-value = 0.09).

In part of ***annual health check-up*** was not statistically significant (p-value = 0.240). The majority of the elderly participants have been to the annual health check-up within 1 year ago (78.0% of intervention group and 67.8% of control group) followed by no history on the annual check-up (11.9% of intervention and 10.2% of control group) and annual check-up within 2 years ago (6.8% of intervention and 8.5% of control group).

In the part of the history of ***alcohol drinking,*** it was not statistically significant difference between intervention and control group (p-value = 0.101). Most of the elderly people in the intervention and control group had no history of alcohol drinking (79.7% and 76.3%, respectively) followed by drink only with friend (15.3% and 6.8% in intervention group and control group, respectively), but in the "ex-alcohol drinking" answer it was found in the control group more than the intervention group (5.1% and 13.6% in intervention group and control group, respectively). Only 3.4% of the control group was found being the current alcohol drinker. In the smoking history, there was not statistically significant difference (p-value = 0.840). Most of intervention and control group were found no history of smoking (89.8% and 86.4%, respectively) followed by ex-smoker (6.8% and 8.5%, respectively) and the current smoker (3.4% and 5.1%, respectively) as shown in table-4.2.

General health complaints including visual, hearing, taste and eating, memory, excretory system, respiratory and hand holding dysfunction (less power or shaking), sitting and standing problem and sleep disturbance were not significantly

different between intervention and control groups (p-value > 0.05) excluding walking dysfunction that was statistically significant difference (p-value > 0.010). The health complaints were found the most in visual dysfunction (62.7%) among the elderly in the intervention group, and 74.6% was found among the control group follow by hearing and taste and eating dysfunction as shown in table 4.2.

In the terms of ***health care access,*** it was found the statistically significant difference for the places of healthcare access (p-value=0.003) between the intervention and control groups. In the control group, the elderly was going to access the healthcare services from community hospital the most followed by general hospital and other (67.8%, 30.5%, and 1.7%, respectively). In contrast, for the intervention group, most of the participants were going to the general hospital followed by community hospital, private hospital, and other (52.5%, 37.33%, 8.5% and 1.7%, respectively). In the term of health insurance, two groups were statistically significant difference (p-value=0.030). Most of the elderly in both group used the universal health insurance (81.4% in intervention group and 84.7% in control group). However, the control group was found in the government retired health insurance higher than the intervention group as shown in table 4.2.

Table 4.2: Comparison of Health Status among study population at baseline

Variables	Intervention		Control		P-value
	n	%	n	%	
History of illness					
No history of chronic illness	9	15.3	10	16.9	0.969
Have history of chronic illness	49	83.1	48	81.4	
Other	1	1.7	1	1.7	
Type of Chronic Disease					
Hypertension	27	45.8	41	69.5	0.09
Diabetes	13	22.0	17	28.8	0.398
hyperlipidemia	17	28.8	18	30.5	0.840
Heart Disease	6	10.2	1	1.7	0.051
Kidney Disease	0	0.0	1	1.7	0.315
Annual health check up					
Never	7	11.9	6	10.2	0.240
Yes, within 1 year	46	78.0	40	67.8	
Yes, within 2 year	4	6.8	5	8.5	
Yes, More than 3 year	2	3.4	8	13.6	
History of alcohol drinking					
Never	47	79.7	45	76.3	0.101
Drink only with friend	9	15.3	4	6.8	
Ex-drinker	3	5.1	8	13.6	
Recently Drink	0	0.0	2	3.4	
History of smoking					
Never	53	89.8	52	86.4	0.840
Ex-smoker	4	6.8	5	8.5	
Smoker	2	3.4	3	5.1	

Variables	Intervention		Control		P-value
	n	%	n	%	
General health complaints					
Visual dysfunction	37	62.7	44	74.6	0.165
Hearing dysfunction	15	25.4	14	23.7	0.831
Walking dysfunction	12	20.3	25	42.4	0.010
Taste and eating dysfunction	2	3.4	5	8.5	0.242
Hand dysfunction/ Less power /shaking	2	3.4	4	6.8	0.402
Sitting and standing problem	7	11.9	12	20.3	0.210
Memory dysfunction	10	16.9	16	27.1	0.183
Excretory system problem	7	11.9	4	6.8	0.342
Respiratory dysfunction	2	3.4	1	1.7	0.559
Sleep disturbance	7	11.9	6	10.2	0.769
Disability	0	0.0	1	1.7	0.315
Place of healthcare access					
Community hospitals	22	37.3	40	67.8	0.003
General Hospital	31	52.5	18	30.5	
Private Hospital	5	8.5	0	0.0	
Other	1	1.7	1	1.7	
Type of Health insurance					
Universal	48	81.4	50	84.7	0.030
Government employee insurance	4	6.8	9	15.3	
Social Security	6	10.2	0	0.0	
Other	1	1.7	0	0.0	

* P-value was calculated by Chi-square test (accepted level is 0.05).

Community Participation and Music

In the part of ***community participation,*** it was found the difference between the intervention and control group with statistical significance (p-value < 0.001). Half of the elderly people (50.8%) in the intervention group was rarely participating in the community participation, and almost half of the elderly (49.2%) in the control group had never participated in the community participation. 22% of the elderly in the intervention group was sometimes participating in the community participation as same as the every times participating. For the control group, 23.7% of the participants were sometimes participating in the community participation followed by rarely and every times participating (18.6% and 8.5%, respectively) as shown in table 4.3.

In the term of ***traditional participation,*** it was also found the difference between the intervention and control group with statistical significance (p-value = 0.001). Almost half of the elderly people (45.8%) in the intervention group were sometimes participating in the traditional participation followed by every times, rarely, and never participating (25.4%, 22.0%, and 6.8%, respectively). For the control group, more than half of the participants (59.5%) reported that they participated in the traditional participation every times followed by sometimes, rarely, and never participating (32.2%, 5.1, and 3.4%, respectively) as shown in the table 4.3.

Music listening experience among the participants was found significant difference between the intervention and control group (p-value = 0.02). All of the participants in the intervention group was listening to the music, but 84.7% of the

control group reported that they were listening to the music. For the type of music preference, there was no statistically significant difference between groups. In the intervention group, Lookthung song was the highest rank that the elderly preferred to listen (78.0%) followed by Lookkrung, Thaideam, and international song (64.4%, 22.0%, and 3.4%, respectively) and the rank was found the similar results in the control group (80.0%, 54.5%, 21.8%, and 13.6%, respectively).

For the ***music playing experience***, 6.8% of the participants in the intervention group reported that they had the experience in playing music instrument, but only 1.7% in the control group was found the music playing experience. The results were shown in the table 4.3.

Table 4.3: Comparison of Community Participation and Music Preference among study population at baseline

Variables	Intervention		Control		P-value
	n	%	n	%	
Community Participation					
Never	3	5.1	29	49.2	
Rarely	30	50.8	11	18.6	
Sometimes	13	22.0	14	23.7	<0.001
Every time	13	22.0	5	8.5	
Traditional Participation					
Never	4	6.8	2	3.4	0.001
Rarely	13	22.0	3	5.1	
Sometimes	27	45.8	19	32.2	
Every time	15	25.4	35	59.3	
Music listening preference					
Listening	59	100.0	50	84.7	0.02
Not listening	0	0.0	9	15.3	
Type of music preference					
Lookthung (Thai country song)	46	78.0	44	80.0	0.790
Lookkrung (Thai popular song)	38	64.4	30	54.5	0.284
Thaideam (Thai original song)	13	22.0	12	21.8	0.978
Sakon (International popular song)	3	3.4	6	13.6	0.279
Music playing experience					
Never	55	93.2	58	98.3	
Ever play any kind of instrument	4	6.8	1	1.7	0.170

* P-value was calculated by Chi-square test (accepted level is 0.05).

Comparison of baseline characteristics

The comparisons of the baseline characteristics as shown in Table 4.1, 4.2 and 4.3 were revealed that gender, educational level, income, sufficiency of the income, place of healthcare accessing, types of health insurance, community participation, traditional participation, and listening music experience were statistically significant difference between the intervention and the control group.

4.2 QUALITY OF LIFE OF THE PARTICIPANTS

The quality of life (QOL) among participants at baseline was found that the overall of QOL score at baseline was significantly statistical difference (p-value <0.001) between intervention (mean ± SD: 87.53±8.31) and control groups (77.81±9.36). When each domain was analyzed separately, it was found that only sensory ability domain was not significantly (p-value=0.160) different between the intervention and control groups. However, other domains of QOL (autonomy, past, present, and further activity, social participation, death and dying, and intimacy) were statistically different at baseline (p-value < 0.05) as shown in table 4.4.

Table 4.4: Mean and standard deviation of Quality of life (QOL) and its 6 domains among intervention and control group at baseline

Outcome Variable	Intervention		Control		P-value*
	Mean	SD	Mean	SD	
Total Quality of Life (TQOL)	87.53	8.31	77.81	9.36	<0.001
- Sensory Ability (SAB)	14.17	2.93	13.51	2.07	0.160
- Autonomy (AUT)	15.27	2.61	14.10	2.13	0.009
- Past, Present, Further Activities (PPF)	14.00	2.17	13.02	2.16	0.015
- Social Participation (SOP)	14.63	2.64	12.71	2.18	<0.001
- Death and Dying (DAD)	15.25	3.59	11.22	3.25	<0.001
- Intimacy (INT)	14.20	2.12	13.25	2.31	0.022

* * P-value was calculated by Independent t-test (accepted level is 0.05).

Quality of life can be grouped into the level by the score of WHOQOL-OLD questionnaire which has three levels identified from the score ranged. From the study, it was found that at baseline, about half of intervention group participants were found the QOL score at the moderate quality of life level (50.8%) followed by the high quality of life level (49.2%). In the control group, most of the elderly participants' QOL score were also at the moderate level (84.7%) followed by high quality of life (13.6%), and the low level was found 1.7%. At 2-month after the intervention implemented, most of intervention group's QOL score was found at the high level (94.9%), and the moderate level was found only 5.1%. In contrast, most of quality of life in control

group was at the moderate (86.4%) and followed by the high quality of life (13.6%). At 3-month after the intervention, most of the intervention group had the QOL score at the high level (96.6%) and only 3.4% was at the moderate level. In contrast, in control group the QOL score was found being similar to the 2nd QOL score level. At 4-month after the intervention, 98.3% of the intervention group had the high level of QOL score, and it was found only 1.7% of participants in the intervention group that was found at the moderate level. For the control group at 4-month, the level was found the most at the moderate level (88.1%), and the high level was found only 11.9%. The number and percentage of participants in both group in each level was shown in table-4.5. The number and percentage of participants' QOL score in each item at baseline were also shown in table 1 in the appendix C.

Table 4.5: The Number and percent of participants in each level of QOL at baseline, 2-month, 3-month and 4-month.

Time / Evaluation	Intervention			Control		
	Low (%)	Moderate (%)	High (%)	Low (%)	Moderate (%)	High (%)
Baseline	0(0.0)	30(50.8)	29(49.2)	1(1.7)	50(84.7)	8(13.6)
2nd month	0(0.0)	3(5.1)	56(94.9)	0(0.0)	51(86.4)	8(13.6)
3rd month	0(0.0)	3(5.2)	55(94.8)	0(0.0)	50(86.2)	8(13.8)
4th month	0(0.0)	1(1.8)	56(98.2)	0(0.0)	51(87.9)	7(12.1)

4.3 THE EFFECTS OF THE INTERVENTION PROGRAM

4.3.1 Effects of Angklung intervention model by using repeated-measures ANOVA

4.3.1.1 Effects Angklung intervention model on total quality of life (TQOL) among study population by using repeated-measures ANOVA

The mean score of total quality of life (TQOL) among the intervention group at 2-month after the intervention increased dramatically when compared to the control group. At 3-month and 4-month of follow up, the score of TQOL among the intervention group slightly increased. In contrast with those among the control group, the score stayed steadily. The mean scores of TQOL scores at times of measurement were depicted in Figure 4.2.

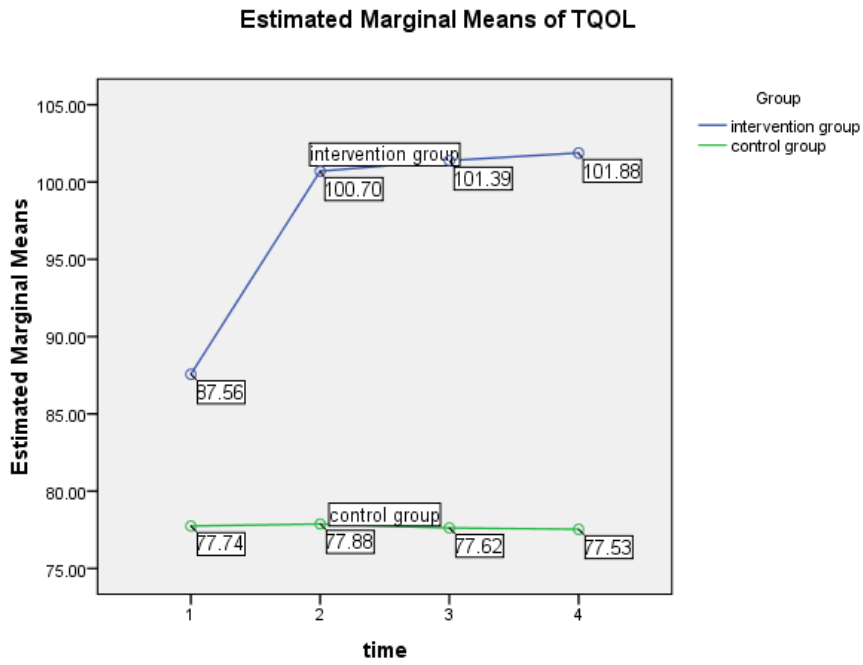


Figure 4.2: Estimated mean score of the total quality of life (QOL) among the intervention and control group at baseline, 2-month, 3-month and 4-month.

4.3.1.2 Effects of Angklung intervention model on sensory ability (SAB) domain score among study population by using repeated-measures ANOVA

With regards to each point of evaluation, it was found that SAB score of the intervention group was higher than the control group at baseline. However, the SAB score of the intervention group dramatically increased from baseline to 2-month and slightly decreased at 3-month, but the score slightly increased at 4-month. On the contrary, the SAB score of the control group appeared to decrease continuously from the point of measurement (Figure 4.3).

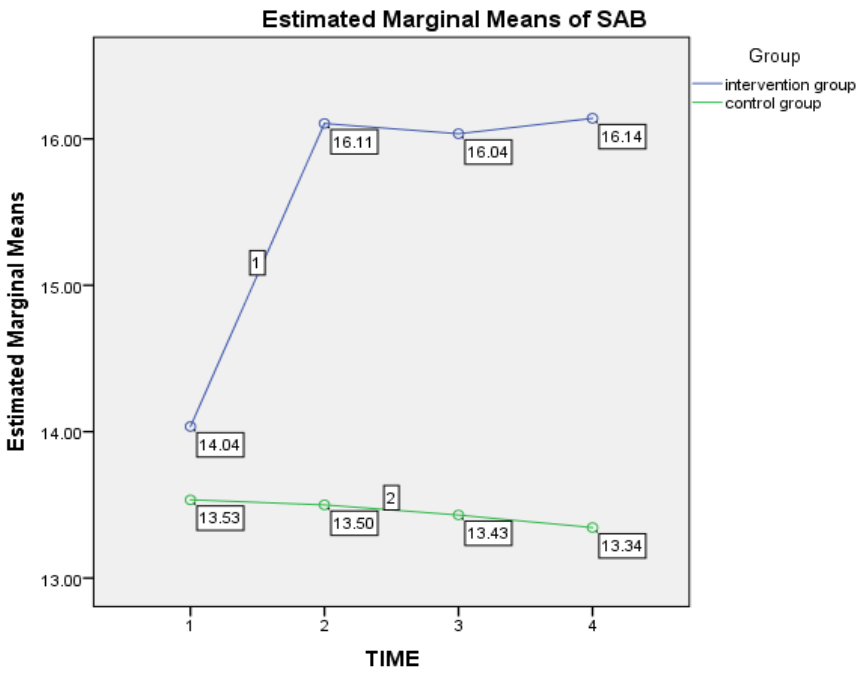


Figure 4.3: Estimated mean score of the sensory ability facet (SAB) in the quality of life (QOL) among the intervention and control group at baseline, 2-month, 3- month and 4-month.

4.3.1.3 Effects of Angklung intervention model on Autonomy (AUT) domain score among study population by using General Linear Model repeated-measures ANOVA

The difference of AUT scores between the intervention and the control groups appeared significantly at all measurement times. In the intervention group, AUT score was found significant increase as compared to the control group at 2-month after the intervention implemented. The mean scores of AUT scores at times of measurement were depicted in Figure 4.4. There was significant increase continuously in the mean scores indicating an improvement in AUT score between baseline and 2-, 3- and 4-month in the intervention group. For the control group, the AUT score slightly changed from baseline to every times of measurement.

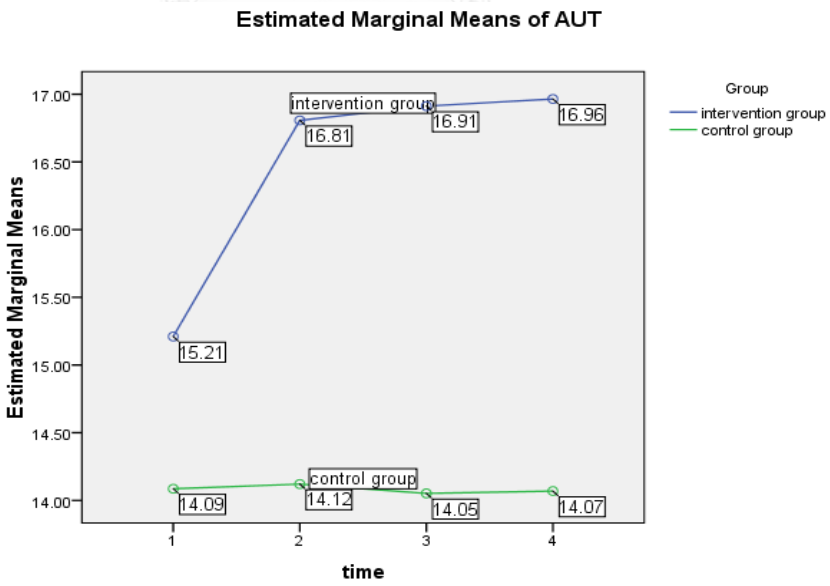


Figure 4.4: Estimated mean score of the Autonomy facet (AUT) in the quality of life (QOL) among the intervention and control group at baseline, 2- month, 3-month and 4-month.

4.3.1.4 Effects of Angklung intervention model on PPF domain score among study population by using General Linear Model repeated-measures ANOVA

For the mean of PPF score, the intervention group significantly increased more than the control group at every point measured. The greater significant increased also found in the intervention group at 2-month. At 3-month and 4-month of follow up, the score of PPF among the intervention group also increased continuously. In contrast, with those among the control group, the score stayed steadily. The mean scores of PPF scores at times of measurement were depicted in Figure 4.5.

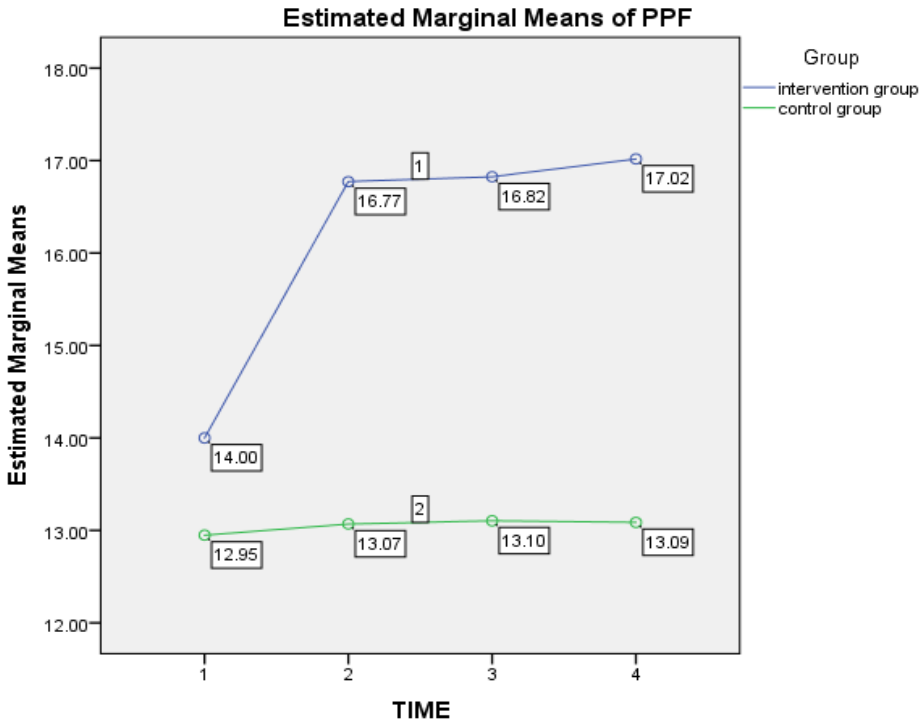


Figure 4.5: Estimated mean score of the Past, Present, and Future facet (PPF) in the quality of life (QOL) among the intervention and control group at baseline, 2-month, 3-month and 4-month.

4.3.1.5 Effects of Angklung intervention model on SOP domain score among study population by using General Linear Model repeated-measures ANOVA

For the SOP score, among the intervention group the SOP score continuously increased from baseline to 2-month, 3-month, and 4-month and higher than the control group. However, the SAB score of the intervention group and slightly decreased at, but the score slightly increased at. On the contrary, the SAB score of the control group appeared to decrease slightly from the point of measurement (Figure 4.6).

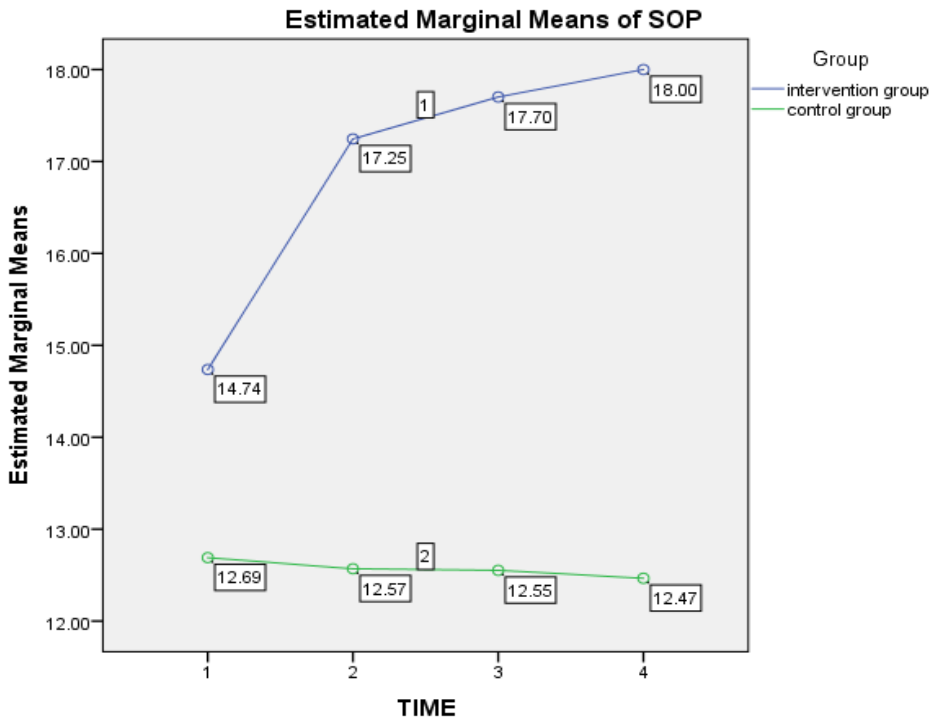


Figure 4.6: Estimated mean score of the Social Participation (SOP) domain in the quality of life (QOL) among the intervention and control group at baseline, 2-month, 3-month and 4-month.

4.3.1.6 Effects of Angklung intervention model on death and dying (DAD) domain score among study population by using General Linear Model repeated-measures ANOVA

After exploring the effect of Angklung intervention model on death and dying (DAD) domain score, it was found that mean score of DAD score among the intervention group dramatically increased as compared with the control group at 2-month, but slightly increased at 3-month and 4-month. There were slight changes in mean scores of DAD among control group for any times of measurement.as shown in figure 4.7.

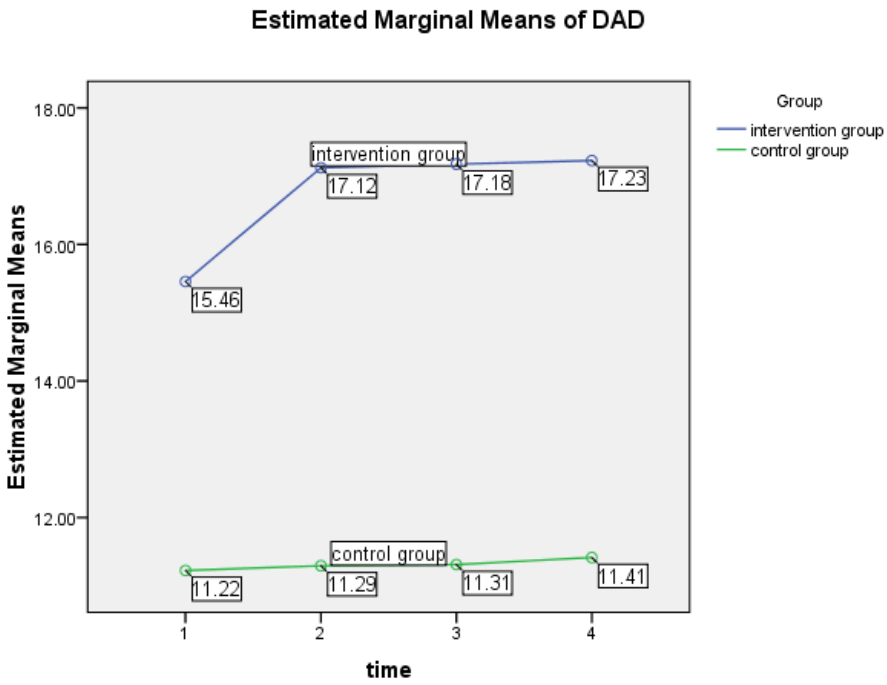
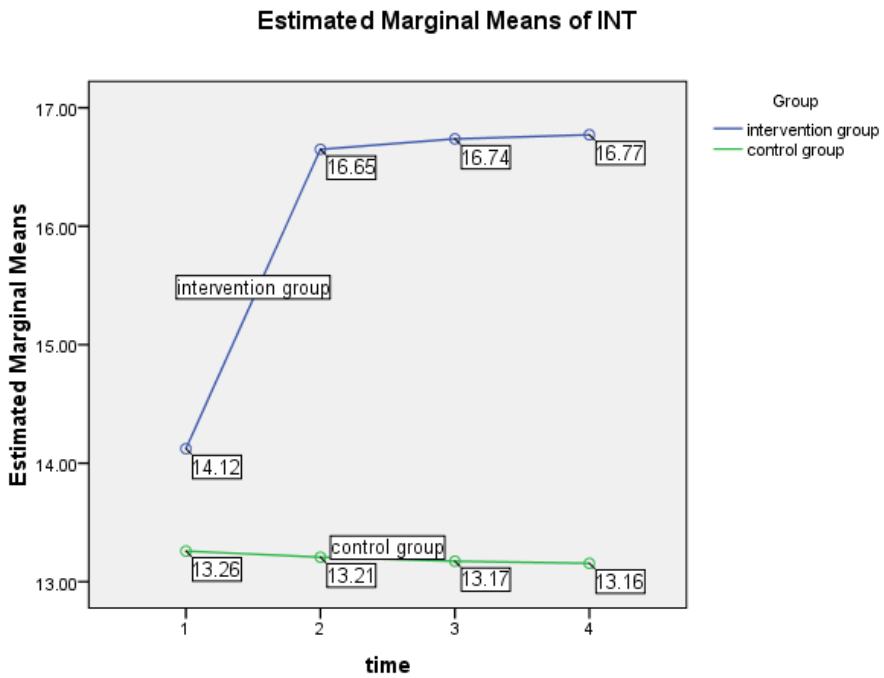


Figure 4.7: Estimated mean score of the Death and Dying (DAD) domain in the quality of life (QOL) among the intervention and control group at baseline, 2-month, 3-month and 4-month

4.3.1.7 Effects of Angklung intervention model on Intimacy (INT) domain score among study population by using General Linear Model repeated-measures ANOVA

The INT score of the intervention group was found greater significant increase as compared to the control group at 2-month after the intervention implemented, and it slightly increased at 3-month and 4-month. The score of INT among control group decreased with a minimal change at post-intervention. The mean scores of DAD scores at times of measurement were depicted in Figure 4.8.



. **Figure 4.8: Estimated mean score of the Intimacy (INT) facet in the quality of life (QOL) among the intervention and control group at baseline, 2-month, 3- month and 4-month.**

The mean differences of TQOL score between and within groups by using repeated measures analysis of variance revealed the interaction between group and time on TQOL and all six domains score between the two groups ($p<0.01$), and there were statistically significant differences between the TQOL and six domain score scores by group ($p<0.01$). The finding revealed time effect on the intervention group, but there was no time effect on control group on the score of QOL and all six domains (Table 4.6).

Table 4.6: Overall effects of Angklung intervention model on Quality of life and six domains at baseline, 2-month, 3 -month, and 4 -month by using repeated-measures ANOVA

Variable/ group	Times of evaluation				Time effect		Group x Time effect		Group effect	
	Baseline	2-month	3-month	4-month						
	Mean (SEM)	Mean (SEM)	Mean (SEM)	Mean (SEM)	*F*	*P*	*F*	*P*	*F*	*P*
TQOL										
Intervention group	87.56 (1.18)	100.70 (1.06)	101.39 (0.94)	101.88 (0.89)	134.47	0.00*	130.26	0.00*	227.92	0.00*
Control group	77.74 (1.17)	77.88 (1.05)	77.62 (0.93)	77.53 (0.89)	1.01	0.39				
SAB										
Intervention group	14.04 (0.33)	16.11 (0.31)	16.04 (0.24)	16.14 (0.25)	26.36	0.00*	28.18	0.00*	34.94	0.00*
Control group	13.53 (0.33)	13.50 (0.31)	13.43 (0.23)	13.34 (0.25)	2.96	0.07				

Variable/ group	Times of evaluation				Time effect		Group x Time effect		Group effect	
	Baseline	2-month	3-month	4-month						
	Mean (SEM)	Mean (SEM)	Mean (SEM)	Mean (SEM)	*F*	*P*	*F*	*P*	*F*	*P*
AUT										
Intervention	15.21	16.81	16.91	16.96	18.93	0.00*				
group	(0.32)	(0.22)	(0.21)	(0.20)			18.43	0.00*	65.32	0.00*
Control	14.09	14.12	14.05	14.07	0.41	0.61				
group	(0.31)	(0.22)	(0.21)	(0.20)						
PPF										
Intervention	14.00	16.77	16.82	17.02	68.81	0.00*				
group	(0.28)	(0.24)	(0.23)	(0.22)			66.42	0.00*	101.41	0.00*
Control	12.95	13.07	13.10	13.09	3.37	0.51				
group	(0.28)	(0.23)	(0.22)	(0.21)						
SOP										
Intervention	14.74	17.25	17.70	18.00	58.16	0.00*				
group	(0.31)	(0.24)	(0.22)	(0.19)			59.05	0.00*	223.54	0.00*
Control	12.69	12.57	12.55	12.47	1.88	0.16				
group	(0.31)	(0.23)	(0.22)	(0.19)						
DAD										
Intervention	15.46	17.12	17.18	17.23	9.99	0.00*				
group	(0.44)	(0.40)	(0.36)	(0.31)			8.06	0.003*	128.60	0.00*
Control	11.22	11.29	11.31	11.41	0.90	0.39				
group	(0.44)	(0.39)	(0.36)	(0.31)						
INT										
Intervention	14.12	16.65	16.74	16.77	66.43	0.00*				
group	(0.29)	(0.26)	(0.24)	(0.23)			66.59	0.00*	73.02	0.00*
Control	13.26	13.21	13.17	13.16	1.05	0.37				
group	(0.29)	(0.26)	(0.24)	(0.23)						

*p-value < .01

4.3.2 Effects of Angklung intervention model by using General Linear Model repeated-measures ANCOVA

4.3.2.1 Effects Angklung intervention model on Quality of life (TQOL) among study population by using General Linear Model repeated-measures ANCOVA

After using repeated measures analysis of covariance, the finding still revealed the interaction between group and time on QOL and all six domains between the two groups, and there were statistically significant differences between the TQOL and six domain scores by group ($p<0.01$) (table 4.7).

Table 4.7: Overall effects of Angklung intervention model on Quality of life and six domains at baseline, 2-month, 3 -month, and 4 -month by using repeated-measures ANCOVA

Total Quality of Life (TQOL)				
Within subjects source	***df***	***MS***	***F***	***P-value***
Time effect	3	7.19	0.65	0.581
Group x Time effect	3	886.87	80.58	<0.001
Between subjects source	***df***	***MS***	***F***	***P-value***
Group effect	1	26060.23	133.78	<0.001

Domain: Sensory Ability (SAB)

Within subjects source	*df*	*MS*	*F*	*P-value*
Time effect	3	0.514	0.42	0.74
Group x Time effect	3	20.63	17.01	<0.001
Between subjects source	*df*	*MS*	*F*	*P-value*
Group effect	1	356.27	24.78	<0.001

Domain: Autonomy (AUT)

Within subjects source	*df*	*MS*	*F*	*P-value*
Time effect	3	0.15	0.13	0.94
Group x Time effect	3	11.35	9.76	0.001
Between subjects source	*df*	*MS*	*F*	*P-value*
Group effect	1	580.22	57.32	<0.001

Domain: Past, Present, & Further Activity (PPF)

Within subjects source	*df*	*MS*	*F*	*P-value*
Time effect	3	1.11	1.21	0.31
Group x Time effect	3	34.62	37.58	<0.001
Between subjects source	*df*	*MS*	*F*	*P-value*
Group effect	1	520.84	51.19	<0.001

Domain: Sociality Participation (SOP)

Within subjects source	*df*	*MS*	*F*	*P-value*
Time effect	3	0.97	0.78	0.51
Group x Time effect	3	51.85	41.61	<0.001
Between subjects source	*df*	*MS*	*F*	*P-value*
Group effect	1	990.88	114.69	<0.001

Domain: Death & Dying (DAD)

Within subjects source	*df*	*MS*	*F*	*P-value*
Time effect	3	0.97	0.42	0.74
Group x Time effect	3	11.83	5.10	0.002
Between subjects source	*df*	*MS*	*F*	*P-value*
Group effect	1	1631.29	73.09	<0.001

Domain: Intimacy (INT)

Within subjects source	*df*	*MS*	*F*	*P-value*
Time effect	3	0.175	0.22	0.88
Group x Time effect	3	30.76	38.60	<0.001
Between subjects source	*df*	*MS*	*F*	*P-value*
Group effect	1	589.35	51.86	<0.001

* General Linear Model repeated-measures ANCOVA; df = degree of freedom; MS = Mean Square

CHAPTER V DISCUSSIONS, CONCLUSIONS, AND RECOMMENTATIONS

This chapter would show the conclusion and summarization of the finding, the discussion by clarifying the reason with the previous studies, and the recommendation of the research finding and guidance for further research. This study was the quasi-experimental with experimental and control study. The main purpose of this study is to evaluate the effects of the Angklung intervention model for improving the quality of life by using WHOQOL-OLD questionnaire. The study was conducted at Samutprakarn and Chacheongsoa province. Samrongnua sub-district, Maung district, Samutprakarn province was an intervention area, and Bangkua sub-district, Bangpakong district, Chacheongsoa province was a control area. The total of samples at baseline were 118 elderly (59 elderly each group). During the third evaluation one sample was dropped out for each the intervention and control group, and during the fourth evaluation one sample was dropped out from the intervention group because she has moved out. Therefore, there were 57 participants remaining in the fourth evaluation for the intervention group and 58 participants remaining in the control group.

Outcome assessment was carried out at baseline, 2-month, 3-months and 4-months after the intervention implemented. The measurement tool was WHOQOL-OLD questionnaire. Statistical analysis used were percentage, mean, median, independent t test, general linear model repeated measure ANOVA and general linear model repeated measure ANCOVA to evaluate the effects of the intervention.

5.1 THE DISCUSSION OF FINDINGS

5.1.1) Baseline characteristics of participants

The age of participants were ranged from 60 to 82 years (66.49±4.46 in the intervention and 67.46±4.73 in the control group). The results showed that majority of them were married (59.3% in an intervention group and 64.4% in the control group). The marital status was found similar with the National Health Examination Survey NHES in 2009. NHES [106] was found that 79% of male-aging and 45 % of female-aging was married. This was found similar with the study in among the elderly in the semi-urban area which found that most of the elderly (59.7%) had been married [107].

The gender of the participants was found the difference between intervention and control group. The majority of respondents were female (91.5% in intervention and 76.3% in the control group). The data from Population Projections for Thailand in 2014 found that Thailand had a population of 33.3 million females compared to only 31.5 million males. This sex ratio of 94.6 which means 94.6 males per 100 females. In the elderly population, the sex ratio will decrease. There are only 81.1 males per 100 females. Since females have longer life expectancy than males, the older the population, the more females than males. In 2014, among the young old (age 60-69 years), the sex ratio was 87.0, among the middle old (age 70-79 years), the sex ratio was 78.7, and among the oldest old (age 80 years and over), the sex ratio was 64.7 [108].

The employment status of the elderly was found that the high number in both groups were found with unemployed status (54.2% in an intervention group and 47.5% in the control group). In the case of the elderly who was currently working, the occupation that was found the most among participants in the intervention group was the labor or general employee, and trading occupation was found the most in the control group. The average numbers of children were 2.41±1.32 persons in the intervention group and 2.69±1.44 persons in the control group. Average numbers of family members who were living with the elderly in the intervention and control group were about 2 persons. From one study among the elderly who was living in the urban area, it was found that 90 percent report that they live with a family member. However, during the day, the elderly people were living alone because their members left to work resulted in they were living at home alone [109].

Most of the participants reported that they finished the primary school (57.6% in the intervention group and 81.4% in the control group). This was found similar in the study among the elderly in the urban and semi-urban area of Thailand which found that the primary school was the majority education level among the elderly [107] [109].

Income among the participants in the intervention group and the control group was significant difference as same as the sufficiency of their income. The average income among the intervention group was found 7440.68 ± 8380.79 which was higher than the control group (4771.19 ± 4393.14). For the sufficiency of their income, in the

intervention group, 32.2% reported that their income was sufficient but not for saving followed by 27.1% of insufficient but not in debt. On the other hand, 37.3% of the control group reported that their income was insufficient and in debt followed by 35.6% of insufficient but not in debt. This might result from in the control group, the income was lower than the intervention group.

Health Status and Health care access

In term health status, among health status 5 items including the history of chronic illness, history of annual health check-up, history of alcohol drinking, history of smoking were not different between the intervention and control group. More than 80% of the participants in both groups reported that they have had at least one chronic disease such as hypertension, diabetes, hyperlipidemia, and heart disease. This was found similar result that third of four among the elderly was found at least one chronic disease [109]. The majority of the participant in both groups (70.8% vs 67.8%) had been checked the annual health check-up. Over 70% of the participants had never drunk an alcohol as same as the history of smoking that over 80% of the participants had never smoked. The recent smokers were found 3.4% in the intervention and 5.1% in the control group.

For the health complaints, which refers to the previous complaining of the participants on their current health problem. They consists of 10 items included visual, hearing, walking, taste and eating, memory, and respiratory dysfunction, hand dysfunction/ less power/ shaking, sitting and standing problem, excretory system

problem, sleep disturbance, and disability. Visual dysfunction was found the highest percentage (62.7% of the intervention group vs 74.6% of the control group) among the health complaints in the participants of both groups followed by hearing and walking dysfunction. These were found the similar results of the other studies regarding the change in the elderly [110], [111].

Community Participation and Music

In the part of ***Community Participation,*** which generally access the participation in the community activities among the elderly participants, the results were shown the difference between the intervention and control group with statistical significance (p-value < 0.001). Half of the elderly people (50.8%) in the intervention group reported that they were rarely participating in the community participation, and almost half of the elderly (49.2%) in the control group had never participated in the community participation. This was found the similar results from the study of Chayanee Mier [112] who studied the community participation among the elderly in Patumthanee province and found that the majority of the elderly participated in social and community activities at a moderate level and the elderly rarely participated in the activities.

In the term of ***traditional participation*** that assess regarding the participation in the special events such as Buddhism traditional events, Songkran festival, wedding, and the other events**,** this participation was also found the difference between the

intervention and control group with statistical significance (p-value = 0.001). Almost half of the elderly people (45.8%) in the intervention group was only sometimes participating in the traditional participation followed by every times, rarely, and never participating (25.4%, 22.0%, and 6.8%, respectively). For the control group, more than half of the participants (59.5%) reported that they participated in the traditional participation every times followed by sometimes, rarely, and never participating (32.2%, 5.1, and 3.4%, respectively).

Music listening experience among the participants was found significant difference between the intervention and control group (p-value = 0.02) as well. All of the participants in the intervention group was listening to the music, but 84.7% of the control group reported that they were listening to the music. The other research from the field of music education found that there was evidence of a connection between participation in music and continued music participation as older adults. Older adults who participated in music were likely to have participated in music as children and adolescents or during their schooling years [113]. Not surprising, the intervention group participants who participated the intervention based on their willingness had 100% listening to the music. For the type of music preference, there was no statistically significant difference between groups. In the intervention group, Lookthung song was the highest rank that the elderly preferred to listen (78.0%), and it was found 80.0% among the control group. For the ***music playing experience***, 6.8% of the participants in the intervention group reported that they had the experience in playing music

instrument, but only 1.7% in the control group was found the music playing experience. This different might be the effect on the difference of the

The differences of some characteristics between the intervention and control groups in this study were found because the recruitment was the voluntary-based and the participants were from the announcement willing to participate the activities. The participants were friends and neighbors of each other. It might be the selection bias that it might affects to the results. Moreover, the participants in both groups were from the different province, but they are in the semi-urban area. Consequently, the covariate variables including gender, education, income, health insurance, community participation, traditional participation, and music listening experience were adjusted by using General linear repeated-measure ANCOVA.

5.1.2 The Quality of Life (by using WHOQOL–OLD questionnaire)

In term of quality of life using WHOQOL-OLD self-assessment questionnaires, the quality of life at baseline was found the difference among two groups with statistical significance. The mean score of the quality of life (total QOL) among the elderly participants in the intervention group was found 87.53 (SD=8.31), and in the control group was found 77.81 (SD=9.36) which both group reported at the moderate level. The previous studies have supported the results and showed similarly in the quality of life among aging in the semi-urban area that were at the moderate level

[114], [115]. Moreover, in the intervention group, the level was increased from moderate level to high level from baseline to the two follow up.

When considering each domain, it was found that only sensory ability facet was not significantly (p-value=0.160) different between the intervention and control groups. However, other facets of QOL (autonomy, past, present, and further activity, social participation, death and dying, and intimacy) were statistically different at baseline (p-value < 0.05). The mean score of past, present, and further activity at baseline was found the lowest among 6 facets in the intervention group, and in the control group death and dying facet was found the lowest mean score. The differences between groups that were found might form the differences from the other variables. This was supported from the study of Sukwatjanee [116] who found that the factors affecting QOL were education, occupation, personal income, family income, adequate income, status in the family, and medical welfare.

5.1.3 Effects of Angklung intervention model on the Quality of Life (by using WHOQOL –OLD questionnaire)

The average mean score of the quality of life at baseline were 87.53 in the intervention group and 77.81 in the control group. The statistical different of the quality of life score at baseline between the intervention and control group was shown in the study. The quality of life was classified into 3 levels included high QOl (QOL score= ≥ 89 score), moderate QOL (QOL score = 56-88 score), and fair QOL (QOL score

= 24 – 55 score). At baseline, it found that the majority of participants have had a moderate quality of life (50.8% and 84.7%). This finding was similar with several studies [114], [115].

General Linear Model repeated-measure ANOVA was shown that the overall effects of Angklung intervention on the total quality of life and its 6 facets were statistical significant difference. This finding consistent with the study of Seinfeld, Figueroa, Ortiz-Gil, & Sanchez-Vives (2013) [117] for the overall quality of life. This study explored whether beneficial effects on mood and quality of life could be achieved by learning music and practicing. A randomized controlled trial, piano lessons took place in group settings with each lesson, lasting one hour and a half at a community center. The older adults aged 61 to 84 took part in the program lasting more than four months. Sixteen older adults aged 63 to 80 were allocated to the control group, participating in other leisure activities. At follow-up assessments, it was found that piano lessons resulted in significant improvements on quality of Life Brief Questionnaire.

However, the finding appears to be different from the study of Belgrave [118] (2011), an American study which found that there was no significant improvement in quality of life and psychological well-being through musical activities. A randomized controlled trial evaluated the impacts of an intergenerational music program explored for twenty-six older adults living in a retirement facility. The program lasted 3 months, 10-sessions each lasting half an hour and consisting of singing, moving to music, structured communication, and instrument playing. Those in the control group did not

attend the music sessions. In pre and post- tests, older adults reported no significant changes in their psycho-social well-being as measured using the Loyola Generativity Scale. Another non-significant impacts on quality of life were reported in a pre- and post-test evaluation of Solé, Mercadal-Brotons, Gallego, & Riera [119] (2010). It was found that there were non-significant improvements in social and emotional outcomes such as satisfaction with self, perceived usefulness, and optimism.

When analyzed the six domains separately, it was also found that sensory ability (***SAB) domain,*** *which is the* sensory functioning and the impact of loss of sensory abilities was statistical significant difference. SAB domain increased after the intervention implemented and increase more than the control group while among the control group, the score was not visually changed. This consistent with many studies which found there were multiple physical benefits regardless of the elderly's health conditions. Cohen (2006) found that the elderly who participated in weekly music program showed better health, fewer doctor visits, less medication usage, more positive responses on mental health measures [120] [121]. Music participation, a social activity by nature, has offered a world of benefits for the elderly regardless of their health conditions. The elderly creates the well-being and a good health due to their musical participations. One of the study reveal the benefit of music activity for the elderly that the music was stimulating for the brain [122] [123] and kept awaking, thinking well, and functioning well. Music participation convene as a way of slowing

down the aging process because it can keep the elderly occupied, and focused on the activity.

Autonomy domain (AUT) is generally about the Independence in old age; being able or free to take own decisions and to live autonomously. The AUT score was found improvement by increasing after the intervention implemented compared to the control group. There were a few studies that clearly explained regarding the impact of music participation on the autonomy among the elderly. However, it can be in a form of sense of confidence and uplifting of the spirit. Many studies found that the elderly people during active music participation were strong feelings of pleasure and enjoyment through the act of music making. The older who was practice the active music was making the experienced a heightened sense of confidence [97] [123] [124]. Therefore, Angklung activity in the form of active music might help the elderly create a sense of the confidence in their decision and their life overall. In this study, the Angklung instrument has the unique activity itself because the elderly can create their confidence for playing and build their value affecting the improvement in this domain among the participants.

Past, Present and Future Activities (PPF) domain is the satisfaction about at things to look forward to and achievements in life. In this study, after the participants participated in the intervention, the score of PPF increased significantly compared to the control who did not receive the music intervention. This can explain from many study that found the benefit of music activity to this domain. One of the study found

that active music making for older adults is the challenge of learning new musical skills and resulting in pride and a sense of accomplishment [125],

Social Participation (SOP) refer to the participation in activities of daily living, particularly in the community. The SOP increased overtime among the intervention group. This can be explained that the Angklung intervention was combining activity theory and music therapy as the componence of the music activity. Therefore, the intervention group was practicing to be active. This consistent with other study that positive associations with others in musical groups have been shown to be important means of facilitating a sense of community and belonging in older adults [97] resulting in positive growth of the social self [126] [127]. Other study found that music participation can provide a means of establishing social connections with others. Connections with others tend to enhance and intensify the feelings of pleasure that accompany active music making [127]. Older adults were able to share the emotion of music on a deep level by making music together, without the necessity of language or conversation about the music. Findings of Conway and Hodgman (2008), showed that the experimental group with music activity was able to establish positive connections with different age groups [128]. Minchiello [122] found that social interaction during active music participation helped older adults feel connected to other older adults and that feelings of social connectedness grew increasingly is important.

Death and Dying (DAD) refers to worries, concerns, and fears about death and dying. DAD also significantly increased among the intervention group. For DAD, it might not be completely explained. However, it can be represent by understanding and purpose in life. One of the study have found that music participation in older adulthood can provide a sense of continuity and coherence in life. It might be that when increasing the participation and join several activities the elderly want to live longer. This sense of continuity through music participation contributed to a sense of place and purpose in life [97] [126] [127].

Intimacy (INT) refers to be being able to have personal and intimate relationships. The finding from this study indicated the increase in the INT score among intervention group compared to control group. Ernst and Emmons' study found that musical groups could replace the workplace as a source of friendships and a place of belonging and can create the bonding relationships with others through collaborative. Other research findings have been similar and showed that music participation helped older adults to find friends and build the personal bonds [122].

According to the difference of the characteristics at baseline, the effects of the intervention was analyzed using repeated-measure ANCOVA. The result revealed that the total quality of life and six domains: SAB, PPF, AUT, SOP, DAD and INT domains were also found the statistically significant difference.

The finding appears that the intervention was successfully on the total quality of life due to the Angklung intervention model motivated elderly to increase frequency

of social activity, social participation, activities, tasks, and the relationship through the integration of activity in the form of Angklung according to the tasks of playing that effect to the quality of life for all domains. The Angklung intervention would affect to the elderly by creating the positive sense of fun and happiness and can create a pleasurable feeling in control self-esteem and develop their skills including the social interaction for learning together with the social for changing attitudes through the movement and the aesthetics from the art and appreciation of the music activity.

5.2 CONCLUSIONS

The main purpose of this study was to evaluate the effectiveness of Angklung intervention model on the quality of life among elderly by using the music therapy and activity theory to create the activity and the participation for the elderly who usually left at home alone. The results of the program show the quality of life has increased significantly from the baseline to 2-, 3- and 4-month after intervention compared with the control group. This revealed that the Angklung intervention had positive impact on elders' quality of life. The activities in the community tended to help the elderly on improving their satisfaction and achievements in life from the concentration in the participation with others. The very good news is that the present study has shown the effectiveness of an intervention based on the music activity in the form of Angklung intervention model which was the activities that were very variety in its activity to improve quality of life. The benefits of the intervention related to

continuity of music participation. Moreover, activity theory can support music participation as a contributing factor in the psychological well-being of the elderly included those of activity and continuity as applied to them. Use of music therapy in the form of activity is one form of non-pharmacological approaches has several advantages in that it addresses the psychosocial, physical as well as social aspects. The Angklung music activity intervention, therefore, may have provided an avenue for appropriate expression of positive emotions with the communication and social interaction. This Angklung intervention model may lead to the way for the natural treatment without medication to restore mood, joy and increase the quality of life among the elderly people.

5.3 LIMITATIONS OF THE STUDY

1. Some socio-demographic characteristics of intervention and control group were different since recruitment because of the difference in the study area among the intervention and control group. This might affects to the outcome of the study.

2. The limitation of self-reported, some variables such as medical diagnosed, smoking and alcohol drinking may be contain error.

3. Time limitation, the study duration was 4 months. It was not enough to assess the sustainability of the outcome.

4. This research is conducted on the purposively selected area, this may not represent the whole population in Thailand and the elderly people were in a purposive selected community; it may not be generalizable.

5. The participants were elderly in semi-urban area that the quality of life generally are quite high at the baseline. This might affect the result of the study.

6. This research is conducted within the semi-urban area of Thailand, the study cannot generalize the environmental settings in other regions of Thailand.

7. Their experiences in the selected community may not be the same as other areas due to different community contexts, infrastructure, so such findings may not be comparable to other elderly people in different communities.

5.4 RECOMMENDATIONS

1. This study can be replicated and implemented to other areas with similar characteristics for promoting the quality of life among the elderly.

2. For improving the activity, it may need to add the song with singing. The evidence had shown that the type of song can effect to the quality of life. The activity can be alternated with singing along with playing.

3. The prevalence of sensory dysfunctions such as visual, hearing loose, smell and taste dysfunction was high in elderly. It was associated with the social participation and the life satisfaction in elderly. Providing education on health is also

significant to improve the quality of life and increase social participation, so the music activity and education on health are considered to implement together.

4. The length of the intervention needs to be extended to improve the skill of practicing and it can be the sustainable effects.

5. The cost-effectiveness of music activity as opposed to other kinds of music instrument that is more practical and innovative for the elderly can be considered in enhancing quality of life in the community for specific populations and age groups. It is hoped that this line of research would lead to additional financial support from the public and private sectors for the inclusion of music in daily life as well as reinforce the necessity of music in Thai life to enhance and maintain well-being for the elderly.

5.5 FUTURE STUDY

1. According to the Angklung instrument which cannot be played alone and not practical for practicing at home, the future study should consider the instrument that can let the elderly can practice at home or develop the music activity that keep the elderly being active at their home not only in the intervention period.

2. The cost of maintenances should need to be considered because of the nature of Angklung that can be easy to break. Therefore, the planning of future study should consider regarding this cost and the instrument selecting.

3. The arrangement of the note need to be considered to be grouped the elderly for each note for sitting in the same line. This can help the activity of playing Angklung be more effective.

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APPENDIX

APPENDIX A

ANGKLUNG INTERVENTION MODEL PHOTOS

The introduction and meeting for building the relationship and deciding for the songs from their preference including the introduction for the instrument (Angklung)

Practicing to hold and play the Angklung and learning for the notes and hand signs from the conductor which the elderly need to concentrate on playing and require vision to recognize the signs and the notes.

The elderly participants were trained to play the Angklung with the movement of the body and to the beat of music

The participants were trained to play the Angklung with the movement of the body to the rhythm of music as well as singing attributed to the rhythm of the music

APPENDIX B

QUESTIONNAIRES (ENGLISH)

THE EFFECT OF MUSIC INTERVENTION (AUNG-KA-LUNG) FOR IMPROVING THE QUALITY OF LIFE AMONG ELDERLY PEOPLE IN MAUNG DISTRICT, SAMUTPRAKARN PROVINCE, THAILAND.

This interview is a part of the research on the effects of treatments to improve the quality of life among elderly people in Maung district, Samutprakarn Province. Objective: To study the effect of using music intervention to improve the quality of life in elderly people in Maung district, Samutprakarn Province, Thailand.

Directions:

1. This interviews are divided into 4 parts.
   Part I: Socio-demographic information 8 questions
   Part II: Health status and health care access 7 questions
   Part III: Quality of life (WHOQOL-OLD) 24 questions
   Part VI: Community participation and music activity 6 questions
2. Please read the statement of interviews in each part carefully.
3. Please answer all the interview questions.
4. The interview is to provide information on a voluntary basis of the respondents. The research will not reveal the name of the data and keep this a secret for research purposes only and will not have any impact on the individual and the families of the respondents.

Part 1 Socio-demographic information

This part of interview requires personal information of those interviewed.
Please mark (/) in the box only option or fill in the blank to answer truthfully.

Questions	Information
1.Gender	□1) male □ 2) female
2. Age	..... years old

Questions	Information
3. Marital Status	☐1) Single ☐2) Married ☐3) widow ☐4) divorce ☐5) separated
4. Education	☐ 0) Not educated ☐ 1) Primary School ☐ 2) Secendary School ☐ 3) Diploma ☐ 4) Bachelor's degree or
5. Occupation	☐ 1) No occupation ☐ 2) Occupational ☐ 1) Retired government ☐ 2) Trader ☐ 3) Farmer ☐ 4) Employee ☐ 5) Business owner ☐ 6) own the apartment for rental
6. Income	☐ 0) No income ☐ 1) .....Bath/month Identify sources of income (can be more than one answer). ☐ 1) salary..... Baht per month. ☐ 2) husband/ wife .....Baht per month. ☐ 3) Children..... Baht per month. ☐ 4) grandchildren.....Baht per month. ☐ 5) neighbors..... Baht per month. ☐ 6) Acquaintances..... Baht per month. ☐ 7) Government..... Baht per month. ☐ 8) Agriculture..... Baht per month. ☐ 9) Other (please specify)..... Baht per month.
7. Are your income enough to live on your own?	☐ 1) Insufficient spending and debt. ☐ 2) Insufficient, no debt

Questions	Information
	☐ 3) Sufficient, no saving. ☐ 4) Sufficient and can be saved.
8. No. of Children	.....persons ☐ Alive.....persons

Part 2 Health status and health care access

Please mark (/) in the box only option or fill in the blank to answer truthfully.

Questions	Information
1. Health check-up history	☐ 0. No ☐ 1. Yes ☐ 1) 1 year ago ☐ 2) 2 years ago ☐ 3) 3 or more than 3 years ago
2. Health status	☐1) No disease ☐2) have the disease ☐ 1) diabetes ☐ 2) hypertension. ☐ 3) cardiovascular ☐ 4) Gout. ☐ 5) Other.....
3. Health care accessing	☐ 1) Community Health Clinic. ☐ 2) Public Hospital ☐ 3) Private hospital ☐ 4) Other.....
4. Health welfare and insurance	☐ 0) none. ☐ 2) Yes, please specify ☐ 1) Elderly Welfare ☐ 2) Government Card. ☐ 3) Civil Rights ☐ 4) Social Security. ☐ 5) Other.....
5. Do you have the following health complaints?	☐ 1.Visual Impairment ☐ 1.Treating ☐ 0. Not Treating 2. Hearing Impairment ☐ 1.Treating

	☐ 0. Not Treating ☐ 3.Walking problems ☐ 1.Treating ☐ 0. Not Treating 4. Eating problem ☐ 1.Treating ☐ 0. Not Treating 5.Handling problem/ shaking/weak ☐ 1.Treating ☐ 0. Not Treating 6. Inconvenience of sit /lie problems. ☐ 1.Treating ☐ 0. Not Treating 7.Regconition Impairment ☐ 1.Treating ☐ 0. Not Treating 8. Excretion Problems ☐ 1.Treating ☐ 0. Not Treating 9. Respiration problem ☐ 1.Treating ☐ 0. Not Treating 10.Problem with sleeping ☐ 1.Treating ☐ 0. Not Treating 11. Disability..... ☐ 1.Treating ☐ 0. Not Treating
6. Smoking Habit	☐ 1. Never ☐ 2. Stop smoking

	Period of smoking history.....year Stopping period .....year ☐ 3. Current smoker 3.1 No. of cigarette .....per day
7. Drinking Habit	☐ 0.Never ☐ 1.Only with companion ☐ 2.Stop drinking Period of drinking history.....year Stopped period .....year ☐ 3.Current drinker 8.1.....glass per day (250 ml.)

Part 3: The quality of life of elderly people

Direction: This interview is to assess the quality of life of elderly. This interview asks about the experience in the story of life in the last 2 weeks. Please mark (/) in the space that meets your comments.

Questions	**Strongly agree (5)**	**Agree (4)**	**Not decided (3)**	**disagree (2)**	**Strongly disagree (1)**
1. The decline in the system of recognition/ sensory (e.g. hearing, vision, smell, the taste, touch) affect the quality of your life.					
2. The loss of sensory system, for example, hearing, sight, smell, taste, and touch affect your ability to participate in various activities.					
3. You have the right to decide on any matters of your own.					
4. You feel that you can control your future.					

Questions	Strongly agree (5)	Agree (4)	Not decided (3)	disagree (2)	Strongly disagree (1)
5. You feel that the people around you respect your independence.					
6. How and how much do you worry that you will die?					
7. You afraid that you cannot control your death.					
8. How you afraid of the death that will happens to you?					
9. You are afraid of pain before death.					
10. The perception / sensory systems presently (such as hearing, vision, smell, taste, and touch) affect your interaction with others.					
11. You can do the activities you want to do.					
12. You are satisfied with the opportunities you get will lead to success in your life.					
13. You feel you deserve to accept the value of your life.					
14. You feel that you have completed or have enough to live.					
15. You are satisfied with the success in your life.					
16. You are satisfied with your life					
17. You are satisfied with the ability to do activities.					

Questions	Strongly agree (5)	Agree (4)	Not decided (3)	disagree (2)	Strongly disagree (1)
18. You are satisfied with the opportunities they have to participate in any community.					
19. You are happy with what you waiting for in the future.					
20. You think your exposure / awareness system (such as hearing, vision, smell, touch, taste, touch) working properly.					
21.You feel that you are not alone					
22. In your life, you experienced about love.					
23. In your life, how much do you have the opportunity to love?					
24. How much are you likely to be loved.					

Part 4: Community participation and music preference

Please mark (/) in the box only option or fill in the blank to answer truthfully.

1. Are you participate in the community activity?	☐ 0) Did not participate. Because …… ☐ 1) Participate, please specify…… ☐ 1) Rarely ☐ 2) Sometimes ☐ 3) Every time
2. Do you participate in the traditional activity?	☐ 0) Did not participate. Because …… ☐ 1) Participate, please specify…… ☐ 1) Rarely ☐ 2) Sometimes ☐ 3) Every time

3. Have you ever listen to the music?	☐ 1. Yes Type of music you prefer to listen ☐.1 Thai folk song ☐.2 Thai classic song ☐ .3Thai old-style song ☐.4 Western song ☐ .5 Other..... ☐ 2. No
4. Why do you like to listen to the music (can be more than 1 answer	☐ 1. Relaxing ☐ 2. Having free time ☐ 3. Liking ☐ 4. Other.....
5. Have you ever played any kind of music instrument?	☐ 1 .Yes Please Specify..... ☐ .2 No
6. Why do you like to play music? (can be more than 1 answer(	☐ 1. Relaxing ☐ 2. Having free time ☐ 3. Liking ☐ 4. Other.....

แบบสัมภาษณ์ (Thai Version)

ประสิทธิผลของการใช้โปรแกรมอังกะลุงเพื่อพัฒนาคุณภาพชีวิตของผู้สูงอายุในอำเภอเมือง จังหวัดสมุทรปราการ

คำชี้แจง

แบบสัมภาษณ์นี้เป็นส่วนหนึ่งของการวิจัย ผลการใช้โปรแกรมอังกะลุงเพื่อพัฒนาคุณภาพชีวิตของผู้สูงอายุ: อำเภอเมือง จังหวัดสมุทรปราการ

วัตถุประสงค์เพื่อประเมินคุณภาพชีวิตของผู้สูงอายุ อำเภอเมือง จังหวัดสมุทรปราการ และการนำเอากิจกรรมดนตรี (อังกะลุง) มาใช้ในการพัฒนาคุณภาพชีวิตของผู้สูงอายุ อำเภอเมือง จังหวัดสมุทรปราการ อนึ่งการตอบแบบคำถามครั้งนี้เป็นการให้ข้อมูลตามความสมัครใจของผู้ตอบ และผู้วิจัยจะไม่เปิดเผยชื่อผู้ให้ข้อมูล จะเก็บไว้เป็นความลับสำหรับการทำวิจัยเท่านั้น และไม่มีผลกระทบใดๆ ต่อผู้ตอบแบบสอบถามและครอบครัวทั้งสิ้น กรุณาอ่านคำสั่งของการสัมภาษณ์ในแต่ละส่วนอย่างรอบคอบ และกรุณาตอบทุกคำถามสัมภาษณ์ <u>แบบสัมภาษณ์มีทั้งหมด 4 ส่วน</u> ประกอบด้วย

ส่วนที่ 1 ข้อมูลทั่วไป จำนวน 8 ข้อ

ส่วนที่ 2 ด้านสุขภาพและการดูแลสุขภาพและการใช้บริการสุขภาพ จำนวน 9 ข้อ

ส่วนที่ 3 คุณภาพชีวิตของผู้สูงอายุ และวิถีชีวิต จำนวน 24 ข้อ

ส่วนที่ 4 การมีส่วนร่วมในชุมชนและกิจกรรมดนตรีจำนวน 6 ข้อ

ส่วนที่ 1 ข้อมูลทั่วไป

1. เพศ	☐ 1.ชาย ☐ 2.หญิง	1Gen
2. อายุ	อายุ ..... ปี	2Age
3. สถานภาพสมรส	☐ 1.โสด ☐ 2.สมรสถูกต้องตามกฎหมาย ☐ 3.หย่า/แยกกันอยู่ ☐ 4. หม้าย ☐ 5. อยู่ด้วยกันไม่จดทะเบียนสมรส ☐ 6. อื่นๆ.....	3MS...
4. การศึกษา	☐ 1.ไม่ได้รับการศึกษา ☐ 2.ประถมศึกษา ☐ 3.มัธยมศึกษา ☐ 4.อนุปริญญา ☐ 5. ปริญญาตรีและสูงกว่า	4Edu
5. อาชีพ	☐ 0.ไม่ได้ประกอบอาชีพ ☐ 1.ประกอบอาชีพ ☐ 1.ข้าราชการเกษียณ ☐ 2.ค้าขาย ☐ 3.เกษตรกร ☐ 4.รับจ้าง ☐ 5.ธุรกิจส่วนตัว/เจ้าของธุรกิจ ☐ 6.เจ้าของห้องเช่า/บ้านเช่า ☐ 7.อื่นๆ (ระบุ).....	5Work 5Occu
6. รายได้	☐ 0.ไม่มี ☐ 1. มี .....บาท/เดือน (โปรดระบุแหล่งของรายได้ และระบุได้มากกว่า 1 ข้อ) ☐ 1. เงินเดือนประจำ .....บาท/เดือน ☐ 2. ค่าจ้าง (รายวัน/ชิ้น/งวด) .....บาท/เดือน ☐ 3. ลูกหลานให้ .....บาท/เดือน ☐ 4. ญาติ .....บาท/เดือน ☐ 5. คนรู้จักให้ใช้จ่าย .....บาท/เดือน ☐ 6. เพื่อนบ้าน .....บาท/เดือน ☐ 7. รัฐสงเคราะห์ให้รายเดือน .....บาท/เดือน ☐ 8. งานเกษตร ปลูกพืช เลี้ยงสัตว์.....บาท/เดือน ☐ 9. อื่นๆ (ระบุ) .....บาท/เดือน	6Inco... 6Bath/M 6Sour 6Bath/M

7. รายได้ของท่าน เพียงพอต่อการดำรงชีวิตของตัวท่านเองหรือไม่	☐ 1.ไม่เพียงพอใช้จ่าย และเป็นหนี้ ☐ 2.ไม่เพียงพอใช้จ่ายไม่เป็นหนี้ ☐ 3.เพียงพอใช้จ่าย แต่ไม่เหลือเก็บ ☐ 4.เพียงพอใช้จ่าย และเหลือเก็บ	7Effi...
8.จำนวนบุตร	.....คน ☐ มีชีวิต.....คน ☐ เสียชีวิต/สาบสูญ.....คน	8Child 8Alive

ส่วนที่ 2 ด้านสุขภาพและการดูแลสุขภาพ และการใช้บริการด้านสุขภาพ

1. ท่านเคยตรวจสุขภาพประจำปีหรือไม่	☐ 0.ไม่เคย ☐ 1.เคย (ระบุ) ☐ 1) 1 ปีที่แล้ว ☐ 2) 2 ปีที่แล้ว ☐ 3) 3ปีหรือมากกว่า 3ปีที่แล้ว	1Hcheck However
2. ท่านมีโรคประจำตัว (ที่วินิจฉัยโดยแพทย์) หรือไม่	☐ 0. ไม่มี ☐ 2. ไม่ทราบ ☐ 1.มี (โปรดระบุ) 1..... ☐ 1.รักษาหายขาดแล้ว ☐ 2.กำลังรักษา ☐ 3.ไม่ได้รักษา 2..... ☐ 1.รักษาหายขาดแล้ว ☐ 2.กำลังรักษา ☐ 3.ไม่ได้รักษา 3..... ☐ 1.รักษาหายขาดแล้ว ☐ 2.กำลังรักษา ☐ 3.ไม่ได้รักษา 4..... ☐ 1.รักษาหายขาดแล้ว ☐ 2.กำลังรักษา ☐ 3.ไม่ได้รักษา 5..... ☐ 1.รักษาหายขาดแล้ว ☐ 2.กำลังรักษา ☐ 3.ไม่ได้รักษา	2Dis..... . D1Rx D2Rx D3Rx D4Rx D5Rx
3. เมื่อท่านเจ็บป่วย ส่วนใหญ่	☐ 1.สถานีอนามัย ☐ 2.คลินิก	4PlaceR

ท่านไปรับการรักษาที่ไหน	☐ 3.โรงพยาบาลรัฐ ☐ 4.โรงพยาบาลเอกชน ☐ 5.แผนโบราณ ☐ 6.ซื้อยากินเอง ☐ 7.อื่นๆ (ระบุ).....	
4. ท่านมีสวัสดิการการรักษาพยาบาลหรือไม่	☐ 0.ไม่มี เนื่องจาก..... ☐ 1.มี ท่านใช้สิทธิการรักษาใด ☐ 1.บัตรประกันสุขภาพ ☐ 2.บัตรข้าราชการ/บัตรจ่ายตรง ☐ 3.บัตรประกันสังคม ☐ 4.บัตรประกันชีวิต ☐ 5. อื่นๆ (ระบุ)..... ท่านใช้สิทธิการรักษานั้นหรือไม่ ☐ 1.ใช้สิทธิรักษา ☐ 0.ไม่ใช้สิทธิรักษาเนื่องจาก.....	5insur..... 5right... 5Used...
5. ท่านมีปัญหาสุขภาพดังต่อไปนี้หรือไม่ แล้วท่านทำอย่างไร	1.ปัญหาการมองเห็น ☐ 1.เคยตรวจรักษา ☐ 0.ไม่เคยตรวจรักษา 2.ปัญหาการได้ยินเสียง ☐ 1.เคยตรวจรักษา ☐ 0.ไม่เคยตรวจรักษา 3.ปัญหาการเดิน ☐ 1.เคยตรวจรักษา ☐ 0.ไม่เคยตรวจรักษา 4.ปัญหาการกินอาหาร ☐ 1.เคยตรวจรักษา ☐ 0.ไม่เคยตรวจรักษา 5.ปัญหาการการหยิบจับของ ☐ 1.เคยตรวจรักษา ☐ 0.ไม่เคยตรวจรักษา 6.ปัญหาการนั่ง/นอนไม่สะดวก ☐ 1.เคยตรวจรักษา ☐ 0.ไม่เคยตรวจรักษา 7.ความจำไม่ดี/อาการหลง/ลืม ☐ 1.เคยตรวจรักษา ☐ 0.ไม่เคยตรวจรักษา 8.ปัญหาระบบขับถ่าย ☐ 1.เคยตรวจรักษา ☐ 0.ไม่เคยตรวจรักษา 9.ปัญหาระบบทางเดินหายใจ	6see..... 6Hear..... 6Walk 6Eat..... 6Catch 6sit..... 6Memo 6stool...

	☐ 1.เคยตรวจรักษา ☐ 0.ไม่เคยตรวจรักษา 10.ปัญหาเกี่ยวกับการนอนหลับ ☐ 1.เคยตรวจรักษา ☐ 0.ไม่เคยตรวจรักษา 11.ความพิการ ทุพลภาพ ระบุ..... ☐ 1.เคยตรวจรักษา ☐ 0.ไม่เคยตรวจรักษา 12.อื่นๆ (ระบุ)..... ☐ 1.เคยตรวจรักษา ☐ 0.ไม่เคยตรวจรักษา	6gastro... 6Sleep... 6abnor...
6. ท่านสูบบุหรี่หรือไม่	☐ 1.ไม่เคยสูบ ☐ 2.เคยสูบแต่ปัจจุบันเลิกแล้ว ระยะเวลาในการสูบ.....ปี เลิกมา .....ปี ☐ 3.ปัจจุบันสูบ (กรณีที่สูบกรุณาตอบคำถามดังต่อไปนี้) 7.1 จำนวนบุหรี่ที่สูบ.....มวน/วัน	7Smok... 7numb...
7. ท่านดื่มสุรา (รวมหมายถึง เหล้า เบียร์ ไวน์ สาโท อุ เหล้าพื้นบ้านอื่นๆ ฯลฯ)	☐ 0.ไม่เคยดื่ม ☐ 1.ดื่มเฉพาะสังสรรค์กับเพื่อน ☐ 2.เคยดื่มแต่เลิกแล้ว ระยะเวลาในการดื่ม.....ปี เลิกดื่มมา .....ปี ☐ 3.ดื่มเป็นประจำ ปริมาณที่ดื่มต่อวัน.....แก้ว (250 มล.)	8drink... 8Freq..... 8Amo

ส่วนที่ 3 คุณภาพชีวิตของผู้สูงอายุ

คำถามต่อไปนี้ ถามถึงความสามารถในการกระทำต่างๆ ของท่านใน 2 สัปดาห์ที่ผ่าน

ที่	คำถาม	ไม่เลย 1	เล็กน้อย 2	ปานกลาง 3	มาก 4	มากที่สุด 5
1	การเสื่อมถอยของระบบการรับรู้ /สัมผัส (เช่น การได้ยินเสียง, การมองเห็น, การได้กลิ่น, การรับรส, การสัมผัส) มีผลต่อคุณภาพชีวิตของท่านเพียงใด					

2	การสูญเสียระบบระบบการรับรู้ /สัมผัส ตัวอย่างเช่น การได้ยิน การมองเห็น, การได้กลิ่น, การรับรส, การสัมผัส มีผลต่อความสามารถในการเข้าร่วมกิจกรรมต่างๆ					
3	ท่านมีอิสระในการตัดสินใจเรื่องต่างๆด้วยตัวเอง					
4	ท่านรู้สึกว่าท่านสามารถควบคุมอนาคตของตนเองได้เพียงใด					
5	ท่านรู้สึกว่าผู้คนรอบตัวท่าน เคารพความเป็นอิสระของท่านเพียงใด					
6	ท่านกังวลว่าท่านจะตายอย่างไร มากน้อยเพียงใด					
7	ท่านกลัวว่าจะไม่สามารถควบคุมความตายของตนได้มากน้อยเพียงใด					
8	ท่านกลัวการตายที่จะเกิดขึ้นกับท่านเพียงใด					
9	ท่านกลัวการเจ็บป่วยก่อนการตายเพียงใด					
10	ระบบ การรับรู้ /สัมผัส (เช่น การได้ยินเสียง, การมองเห็น, การได้กลิ่น, การรับรส, การสัมผัส) ของท่าน มีผลกระทบต่อการสื่อสารกับผู้อื่นเพียงใด					
11	ท่านสามารถทำกิจกรรมต่างๆ ที่ท่านอยากทำ ได้มากน้อยเพียงใด					
12	ท่านพอใจกับโอกาสที่ได้รับ ที่นำไปสู่การประสบความสำเร็จในชีวิตของท่านเพียงใด					
13	ท่านรู้สึกว่าท่านสมควรได้รับการยอมรับเห็นคุณคุณค่าของชีวิตเพียงใด					
14	ท่านรู้สึกว่าท่านมีทุกอย่างเพียงพอต่อการดำรงชีวิตแต่ละวันเพียงใด					
15	ท่านมีความพึงพอใจกับความสำเร็จในชีวิตเพียงใด					
16	ท่านมีความพึงพอใจกับการใช้ชีวิตตามแบบของท่านเพียงใด					
17	ท่านมีความพึงพอใจกับระดับความสามารถในการทำกิจกรรมต่างของท่านเพียงใด					

18	ท่านมีความพึงพอใจต่อโอกาสที่ตนได้เข้าร่วมกิจกรรมต่างๆในชุมชนเพียงใด					
19	ท่านมีความสุขในสิ่งที่ท่านรอคอยข้างหน้าเพียงใด					
20	ท่านคิดว่าการทำงานของระบบ สัมผัส/รับรู้(เช่น การได้ยินเสียง, การมองเห็น, การได้กลิ่น, การรับรส, การสัมผัส) ของท่านเป็นอย่างไร					
21	ท่านรู้สึกว่าท่านมีเพื่อนชีวิต (ไม่ได้อยู่คนเดียว) มากน้อยเพียงใด					
22	ในชีวิตของท่านท่านเคยมีประสบการณ์ความรักมากน้อยเพียงใด					
23	ในชีวิตของท่านท่านมีโอกาสที่จะรัก (ในสิ่งต่างๆ) มากน้อยเพียงใด					
24	ท่านมีโอกาสได้รับความรักมากน้อยเพียงใด					

ส่วนที่ 4 การมีส่วนร่วมในชุมชนและกิจกรรมดนตรี

1. ท่านเข้าร่วมกิจกรรมทางสังคมของชมรม/ชุมชน ที่ท่านเป็นสมาชิกบ้างหรือไม่	☐ 1. เข้าร่วม บ่อยแค่ไหน ☐ 1.นานๆ ครั้ง ☐ 2. บางครั้ง ☐ 3. ทุกครั้งที่มีกิจกรรม ☐ 2. ไม่ได้เข้าร่วม เพราะอะไร.....
2. ท่านร่วมงานตามประเพณี เช่นงานศพ งานบวช งานแต่งงาน ฯลฯ บ้างหรือไม่	☐ 1. เข้าร่วม บ่อยแค่ไหน ☐ 1.นานๆ ครั้ง ☐ 2. บางครั้ง ☐ 3. ทุกครั้งที่มีกิจกรรม ☐ 2. ไม่ได้เข้าร่วม เพราะอะไร .....
3. ท่านเคยฟังดนตรี/เพลงหรือไม่	☐ 1. ฟัง ชอบเพลงประเภท ☐ 1.ลูกทุ่ง ☐ 2.ลูกกรุง ☐3. ไทยเดิม ☐ 4.สากล ☐ 5. อื่นๆ..... ☐ 2. ไม่ฟัง ให้ข้ามไปข้อ 5
4. เหตุผลที่ท่านชอบฟังดนตรี/เพลง (ตอบได้มากกว่า 1 ข้อ)	☐ 1. ผ่อนคลายความเครียด ☐ 2. มีเวลาว่าง ☐ 3. ชอบ ☐ 4. อื่นๆ.....

5. ท่านเคยเล่นดนตรีหรือไม่ ประเภทอะไร	☐ 1. เคย ระบุ..... ☐ 2. ไม่เคย ให้ข้ามไปข้อ 7
6. เหตุผลที่ท่านเล่นดนตรี (ตอบได้มากกว่า 1 ข้อ)	☐ 1. ผ่อนคลายความเครียด ☐ 2. มีเวลาว่าง ☐ 3. ชอบ ☐ 4. อื่นๆ ระบุ.....

*********ขอขอบคุณในความร่วมมือและตอบแบบสอบถามค่ะ*******

Table 1: Number and percentage of participants' QOL score in each item at baseline

Questions	Intervention Group					Control Group					P-value
	1	2	3	4	5	1	2	3	4	5	
1. The decline in the system of recognition/ sensory (e.g. hearing, vision, smell, the taste, touch) affect the quality of your life.	0 0%	8 13.6 %	16 27.1 %	19 32.2%	16 27.1%	0 0%	11 18.6 %	22 37.3%	24 40.7%	2 3.4%	0.005
2. The loss of sensory system, for example, hearing, sight, smell, taste, and touch affect your ability to participate in various activities.	0 0%	10 16.9%	16 27.1 %	18 30.5%	15 25.4%	0 0%	8 13.6 %	26 44.1%	24 40.7%	1 1.7%	0.001
3. You have the right to decide on any matters of your own.	3 5.1%	0 0%	8 13.6 %	27 45.8%	21 35.6%	1 1.7%	2 3.4%	16 27.1%	33 55.9%	7 11.9%	0.010
4. You feel that you can control your future.	1 1.7%	0 0%	4 6.8%	19 32.2%	14 23.7%	1 1.7%	5 8.5%	26 44.1%	24 40.7%	3 5.1%	0.074

Questions	Intervention Group					Control Group					P-value
	1	2	3	4	5	1	2	3	4	5	
5. You feel that the people around you respect your independence.	3 5.1%	2 3.4%	11 18.6%	27 45.8 %	16 27.1 %	0 .0%	8 13.6 %	23 39.0%	25 42.4%	3 5.1%	0.001
6. How and how much do you worry that you will die?	3 5.1%	4 6.8%	5 8.5%	15 25.4 %	32 54.2 %	3 5.1 %	19 32.2 %	12 20.3%	21 35.6%	4 6.8%	<0.001
7. You afraid that you cannot control your death.	4 6.8%	8 13.6%	12 20.3%	9 15.3 %	26 44.1 %	3 5.1 %	20 33.9 %	17 28.8%	16 27.1%	3 5.1%	<0.001
8. How you afraid of the death that will happen to you?	3 5.1%	4 6.8%	9 15.3%	17 28.8 %	26 44.1 %	3 5.1 %	18 30.5 %	16 27.1%	19 32.2%	3 5.1%	<0.001
9. How are you afraid of pain and illness before dying?	2 3.4%	16 27.1%	16 27.1%	11 18.6 %	14 23.7 %	12 20.3%	29 49.2 %	12 20.3%	6 10.2%	0 .0%	<0.001

Questions	Intervention Group					Control Group					P-value
	1	2	3	4	5	1	2	3	4	5	
10. The perception/ sensory systems presently (such as hearing, vision, smell, taste, and touch) affect your interaction with others.	3 5.1%	13 22.0%	16 27.1%	11 18.6 %	16 27.1 %	0 .0%	2 3.4%	32 54.2%	23 39.0%	2 3.4%	<0.001
11. How can do you do the activities you want to do?	2 3.4%	3 5.1%	20 33.9%	25 42.4 %	9 15.3 %	0 .0%	3 5.1%	23 39.0%	28 47.5%	5 8.5%	0.475
12. You are satisfied with the opportunities you get will lead to success in your life.	3 5.1%	13 22.0%	16 27.1%	11 18.6 %	16 27.1 %	0 .0%	2 3.4%	32 54.2%	28 47.5%	2 3.4%	0.041
13. You feel you deserve to accept the value of your life.	1 1.7%	3 5.1%	27 45.8%	23 39.0 %	5 8.5%	0 .0%	8 13.6 %	23 39.0%	26 44.1%	2 3.4%	0.281

Questions	Intervention Group					Control Group					P-value
	1	2	3	4	5	1	2	3	4	5	
14. You feel that you have completed or have enough to live.	2 3.4%	8 13.6%	21 35.6%	20 33.9 %	8 13.6 %	4 6.8%	11 18.6 %	24 40.7%	18 30.5%	2 3.4%	0.283
15. You are satisfied with the success in your life.	1 1.7%	5 8.5%	17 28.8%	23 39.0 %	13 22.0 %	1 1.7%	11 18.6 %	23 39.0%	20 33.9%	4 6.8%	0.087
16. How are you satisfied with your life?	1 1.7%	3 5.1%	16 27.1%	28 47.5 %	11 18.6 %	1 1.7%	9 15.3 %	23 39.0%	22 37.3%	4 6.8%	0.083
17. How are you satisfied with your ability to do any activity?	0 .0%	2 3.4%	19 32.2%	33 55.9 %	5 8.5%	0 .0%	4 6.8%	31 52.5%	24 40.7%	0 .0%	0.019
18. You are satisfied with the opportunities they have to participate in your community.	0 .0%	2 3.4%	19 32.2%	29 49.2 %	9 15.3 %	10 16.9%	39 66.1 %	31 52.5%	10 16.9%	0 .0%	<0.001

Questions	Intervention Group					Control Group					P-value
	1	2	3	4	5	1	2	3	4	5	
19. You are happy with what you are waiting for in the future.	3 5.1%	11 18.6%	17 28.8%	24 40.7%	4 6.8%	0 .0%	9 15.3%	31 52.5%	17 28.8%	2 3.4%	0.058
20. How do you think your sensory system (such as hearing, vision, smell, touch, taste, touch) functioning properly.	2 3.4%	3 5.1%	29 49.2%	20 33.9%	5 8.5%	0 .0%	0 .0%	32 54.2%	25 42.4%	2 3.4%	0.136
21.You feel that you are not alone	3 5.1%	0 .0%	16 27.1%	32 54.2%	8 13.6%	5 8.5%	6 10.2%	10 16.9%	34 57.6%	4 6.8%	0.055
22. How are you experienced with “love?”	5 8.5%	2 3.4%	20 33.9%	31 52.5%	1 1.7%	0 .0%	6 10.2%	33 55.9%	20 33.9%	0 .0%	0.009
23. In your life, how much do you have the opportunity to love?	1 1.7%	1 1.7%	25 42.4%	29 49.2%	3 5.1%	0 .0%	5 8.5%	33 55.9%	20 33.9%	1 1.7%	0.115
24. How much are you likely to be loved.	0 .0%	2 3.4%	25 42.4%	27 45.8%	5 8.5%	0 .0%	4 6.8%	35 59.3%	19 32.2%	1 1.7%	0.094

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