

Impact of the Revised Life Review Program on Quality of Life for Residents with
Alzheimer's Disease in South Taiwan's Long Term Care Facilities

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ABSTRACT

Quality of life (QOL) is the goal for services to elders particularly those with Alzheimer's Disease (AD) for whom successful outcomes are likely to mean small improvements. There is no universal definition of QOL or consensus on what components constitute the phenomena. Therefore, it is difficult to compare efficacy of services or service providers, or to know whether or not QOL has been achieved. Lawton (1997) advocates for defining QOL as a multidimensional phenomenon that cannot be evaluated as a single entity nor measured by one instrument and that must be evaluated from subjective and objective perspectives. This study investigates the efficacy of a revised version of the life review program (LRP-TW) to influence improvement in the QOL of elders with mild to moderate AD in four long term care facilities in South Taiwan when QOL is construed as a multidimensional entity (i.e. SF-36, MMSE, and GDS). An experimental, repeated-measure design was employed with 34 residents in four facilities randomly assigned to experimental and control groups. The experimental group participated in the 10-week, bi-weekly, LRP-TW; the control group received the typical programs routinely delivered to the residents in each of the facilities. The LRP-TW, framed by continuity and developmental theories (Erikson, 1950; Atchley, 1989) and life review reminiscence (Butler, 1963), included life stage relevant activities reflective of the Taiwan culture of earlier times that correspond to the dates when the subjects would have been at each successive stage. Quantitative analyses of data revealed that objective and subjective indicators of QOL were significantly intercorrelated to each other, but the LRP-TW did not significantly affect the objective and subjective measures of QOL. However, qualitative analyses of data revealed that the LRP-TW successfully applies a

variety of leisure activities as tools to trigger each participant's past leisure experiences and related memories. The LRP-TW is promotable as a recreational therapy intervention in long term care facilities throughout Taiwan. Further study with a larger sample size and efficient measuring strategy continuing the search for reliable methods for measuring QOL as a multi-dimensional compound model are needed.

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CHAPTER I

Introduction

It is reasonable to assume that having a life with quality is important to people of all ages. Caregivers of dependent elders are required to target quality of life as a priority outcome for their residents. However, it is difficult to hold caregivers accountable when there is no consensus on what constitutes quality of life or how to measure the construct. This study attempts to address this problem.

Statement of the problem

Quality of Life (QOL) is the prevailing indicator of excellent care and an important value for nursing home residents in the United States (Kane, 2003). It has been used generally to characterize the quality of health care services, facilities and drug/non-drug treatment/intervention. QOL is a multi-dimensional construct in which the elements are blended in different configurations; therefore it has been difficult for researchers or practitioners to accurately capture the changes in QOL as an indicator for the impact of an intervention or treatment. Numerous instruments have been developed relative to specific definitions of QOL and used to measure this complex construct. One type of instrument measures *health-related quality of life* and interprets the impact of health conditions. For instance, the 36-item Short-form (SF36; Ware & Sherbourne, 1992) is designed to measure individual functional status when affected by an illness; and the Sickness Impact Profile (Bergner, Bobbitt, Carter, & Gilson, 1981) measures the impact of disease and impairment on daily activities and behavior. Another type of instrument measures *disease-specific quality of life*, the focus of which is on a specific illness and the

aspects of QOL most affected by that illness. Definitions and measures of a specific QOL for people with Alzheimer's disease and related dementias have often been discussed (Dröes et al, 2006). Several measures, such as dementia quality of life (DQOL; Brod, Stewart, Sands, & Walton, 1999), Alzheimer's disease related quality of life (ADQOL; Rabins, Kasper, Kleinman, Black, & Patrick, 1999), and quality of life- Alzheimer's disease (QOL-AD; Logsdon, Gibbons, McCurry, & Teri, 1999), stress QOL outcomes in psychosocial and emotional domains, including affect, self-esteem, attachment, social contact, enjoyment of activities, and other such factors. These measurements may successfully reflect subjective satisfaction with life. However, objective behaviors or status indicated health conditions have been dismissed when one's QOL is interpreted. It seems to be impossible to create a single instrument that can claim superiority and can adequately capture the broad canvas of QOL. There is no "gold standard" measure of QOL, especially in the presence of dementia and the assessment should consider both subjective and objective dimensions from multiple sources (Lawton, 1997; Sloane et al, 2005).

According to Lawton (1991b, p.6), QOL is "a multidimensional evaluation by both intrapersonal and social-normative criteria, of the person-environment system of an individual in time past, current, and anticipated". Lawton conceptualized QOL in terms of four evaluative sectors: behavioral competence, perceived quality of life, psychological well-being, and objective environment (see Figure 1). Lawton insisted that QOL is not merely an "intrapersonal" or subjective appraisal of how close to a personal benchmark that each individual's life has come thus far, but that objective and observable

surface features (e.g. cognitive ability, social interaction, and emotional expression) also can reflect the life quality via multi-disciplinary measurements. A comprehensive QOL indicator should consist of both the individual's intrapersonal perceptions and external performance covering physical and psychosocial domains instead of just from one perspective.



Figure 1. Lawton's four sectors of the Good Life

In brief, QOL is frequently cited as a measure of success or failure of health care but there is no universally accepted definition of QOL. This is of particular concern when the persons whose QOL is being examined have cognitive impairments, and their own perception of QOL might be easily dismissed as unreliable data (Ready, Ott, & Grace, 2004). Obtaining parallel sources both from subjective (i.e. self-report) and objective (i.e. medical test or observation) perspectives should be considered, especially when someone has compromised cognitive functioning. Therefore, this study attempts to utilize several measurements to collect data indicating subjective and objective views of QOL for people with Alzheimer's disease.

Need for study

This study targets people with Alzheimer's Disease (AD) not only because their opinions are frequently dismissed (e.g. proxy evaluation is the common method for QOL measurement), but also the population is rapidly increasing throughout the world. It is becoming a global issue; the worldwide prevalence of AD was 26.6 million cases in 2006 (Brookmeyer, Johnson, Ziegler-Graham, & Arrighi, 2007). Hebert, Scherr, Bienias, Bennett, and Evans (2003) estimate that the number of people with AD based on 2000 US census and National Center for health Statistics Mortality Data was approximately 4.5 million individuals in 2000; however, by 2050, this number is predicted to increase to 13.2 million. Their research also concluded that "the number of persons with AD in the US population will continue to increase unless new discoveries facilitate prevention of the disease" (Hebert et al, p.1119). In the United States, AD has already leapt to the fourth leading cause of death, after heart disease, cancer and stroke, in the elderly in this decade, and has become one of the major causes of institutionalization of aged people (Reisberg, Javed, Kenowsky, & Auer, 2005). Unfortunately, Taiwan has an even worse situation due to the insufficiency of professional care for this population. It was estimated that there are 110,000 patients with dementia among the 23 million people of Taiwan; however, 13 institutions specialize in dementia care providing just 1000 beds (Tang & Li, 2006). Although the previous epidemiological studies in Taiwan indicated that the prevalence of dementia in community elders was between 1.7 and 4.4%, the recent report revealed that the prevalence of dementia in the long-term care units of Taiwan is at least 10 times higher than the community setting (Chen et al., 2007). This nationwide

investigation reported that the dementia prevalence is 26.8% in residential homes, 61.8% in the assisted living facilities and 64.5% in the nursing homes. These numbers not only reveal the deficiency of specialized care services in Taiwan, but also imply that the needs of therapeutic intervention for dementia will be dramatically increasing in the long-term care facilities.

AD is a progressive degenerative disease of the brain that causes dementia and may gradually damage cognitive ability, including loss of memory, the ability to learn, reason, make judgments, communicate and carry out daily activities (Alzheimer's Association [AA], 2007). Individuals with AD from initial onset to terminal stage may experience changes in personality and behavior, such as anxiety, suspiciousness or agitation, as well as delusions or hallucinations. Disturbing behaviors may cause healthcare providers and family caregivers much stress; there has been limited research to discover ways for maintaining function, improving mood state, and preventing or reducing disturbing behavior for individuals with dementia of Alzheimer's type (Buettner & Fitzsimmons, 2003). Currently, there is no cure for AD, and researchers are looking for new treatments to alter the course of the disease and to improve the quality of life for people with dementia.

Cognitive and behavioral interventions and rehabilitation strategies may be used concurrently with pharmacological treatment, especially in the early to moderately advanced stages of disease. Treatment modalities include counseling, psychotherapy (if cognitive functioning is adequate), reminiscence therapy, reality orientation therapy, and behavioral reinforcements as well as cognitive rehabilitation training (Olazarán et al.,

2004; Clare, Woods, Moniz, Orrell, & Spector, 2003). For instance, Tabourne (1991, 1995a, 1995b) developed a life review intervention for nursing home residents with mild to moderate AD and found benefits in decreasing disorientation and increasing social interaction, cognitive function, social skill, and psychological well-being. Rolland, et al. (2007) indicated that a simple exercise program, one hour twice a week, led to a significantly slower decline in scores for Activities of Daily Living (ADL) score in elders with AD living in a nursing home, compared to routine medical care. Research (Talassi et al., 2007) also showed that computerized cognitive program training can produce an improvement in cognitive and affective status of elders with mild AD and delay the progression of dementia. These results have shown that appropriate alternative programs can slow down the process of deterioration and improve quality of life for individuals over the course of the disease from diagnosis to the end of life.

Well documented benefits of reminiscence and life review include relief from depression (Mastel-Smith et al., 2006; Bohlmeijer, Smit, & Cuijpers, 2003; Haight, Michel, & Hendrix, 1998) and higher ego integrity in later life (Haight, Michel, & Hendrix, 2000; Poter, 1998; Shaw, Westwood, & deVries, 1999) by effectively increasing life satisfaction, self-esteem, and psychological well-being, and by decreasing hopelessness. Few studies revealed that these interventions benefited older adults generally, but they made a difference for seniors with dementia or memory deficits (Thorgrimsen, Schweitzer, & Orrell, 2002; Haight et al., 2003; Hirsch, Vassilis, & Mouragoglou, 1999; Lai, Chi, & Kayser-Jones, 2004). Research evidenced enhancement of psychological well-being and perceived quality of life benefits for this segment of the

elder population. However, there is limited research investigating a comprehensive, multi-dimensional impact of the life review approach on QOL with seniors with AD.

The Life Review Program (LRP) developed by Tabourne (1991) has had remarkable effects on cognitive, affective, and social functioning for institutionalized elders with mild to moderate AD in New Jersey. Grounded in Continuity Theory and the Developmental Theory of life stages, the LRP is a recreational therapy intervention that systematically employs numerous therapeutic activity strategies to evoke elders' pivotal memories in a supportive environment and counseling strategies to help the elders to process those memories. Elders are encouraged to concentrate on how (and why) they celebrated special events in the past, coped with the loss of friends and family, managed difficult or threatening situations, conflict, or defeat, always with the intent to help elders find meaning in lifetime accomplishments. A series of research studies (Tabourne, 1991; Tabourne, 1995a; Tabourne, 1995b; McKenzie, 2004; Lee, 2005) conducted or advised by Tabourne tested the efficacy of the LRP, finding decreased disorientation and increased social interaction, cognitive function, social skills, and psychological well-being. Although this evidence suggests that the LRP has a positive impact on various aspects of QOL for elders with AD, there has not been sufficient in-depth examination of QOL, conceptualized as a multi-dimensional entity, and the modulating influence of the LRP. It is therefore necessary to examine the effectiveness of a revised LRP intervention for Taiwanese elders (i.e. LRP-TW) in simultaneously improving multiple dimensions of quality of life for elders with AD in long term care.

Purpose of Study

The purpose of this study is to test the impact of the LRP-TW on QOL for long term care residents diagnosed with mild to moderate AD when QOL is construed as a multi-dimensional compound construct. If the measurement of a multi-dimensional compound construct can capture positive changes due to the LRP-TW, the effectiveness of the intervention on QOL can be supported.

Research Questions

To address the research problem that a multi-dimensional complex of QOL measurement for people with AD should be established to capture the changes caused by the intervention (i.e. LRP-TW), two research questions are potentially answered by this study:

1. What is the relationship between the objective and subjective indicators that compose a multi-dimensional complex of QOL measurement?
2. Is LRP-TW an effective RT intervention to improve QOL measured by multi-dimensional modules?

Research Hypotheses

To answer the research questions, an experimental, repeated-measures design is employed to test the following two hypotheses:

H₁1: There are moderate to strong correlations between subjective indicators and objective indicator of QOL

H₁2: Participation in LRP-TW results in positive changes in the QOL scores measured by a multi-dimensional complex measurement

Definition of Terms

Elders: Persons 65 years of age or older. From the chronological perspective, the range from 65 to 74 years of age is frequently referred to as the “young old”. The “old old” are those who fall into the 75 to 84 years of age group. Individuals who are above 85 years of age are referred to as the “oldest old” (Hawkins, May & Rogers, 1996).

Alzheimer’s disease: A progressive degenerative disease of the brain that causes dementia and may gradually damage patient’s cognitive ability, such as loss of memory, ability to learn, reason, make judgments, communicate and carry out daily activities. The presence of cognitive impairment and a suspected dementia syndrome should be confirmed by neuropsychological testing for a clinical diagnosis of possible or probable AD.

Histopathologic confirmation (microscopic examination of brain tissue) is needed for the definitive diagnosis (AA, 2007).

Life Review: a naturally occurring, universal mental process involving evaluation and re-synthesis of past experiences, particularly, the reappearance of unresolved conflicts. It is necessary for individuals to reintegrate the experiences of life in order to adapt to old age, and to possibly respond to the biological and psychological fact of death. (Butler, 1963; Kasl-Godley & Gatz, 2000).

Reminiscence: the act of recalling people, places, or events of one’s past.

The Life Review Program © (LRP) (Tabourne, 1991): 12-week intervention program grounded in Continuity Theory and Developmental Theory pairing therapeutic activities to themes of life progressing from birth to death. The LRP was developed for institutionalized individuals diagnosed with mild to moderate cognitive status impairment.

Quality of life: A multidimensional evaluation to reflect personal perspective on life, by both intrapersonal and social-normative criteria, of the person-environment system of an individual in time past, current, and anticipated (Lawton, 1991b).

Delimitations

This study is delimited to Taiwanese elders with mild to moderate Alzheimer's disease who:

1. are 65 years and older,
2. are residents in long-term care facilities that agree to host this study,
3. have mild to moderate cognitive impairment evidenced by their early indication of the scores on MMSE (10-23) and clock-drawing test (equal or below 10),
4. are able to communicate in Mandarin or Taiwanese,
5. are not displaying any delusional behavior during the study period.

Limitations

The limited cognitive ability of elders with AD may have influenced the validity of their self-reported QOL; however, some research (Novella et al., 2001; Kane, 2003) supports that people with moderate cognitive impairment have the ability to give valid and reliable answers to QOL questions. Factors that may influence the results, including the subjects' declining physical health and influences of social interactions outside of the program (LRP-TW), are not controlled. Subjects are recruited from different facilities that may cause some unexpected discrepancies. Therefore, in addition to the intervention groups, the effect of facility types will also be examined.

CHAPTER II

Review of the Literature

Quality of life (QOL) is the goal for services to elders particularly for those with AD whose successful outcomes are likely to mean small improvements. There is no universal definition of QOL or consensus on what components constitute the phenomena. Therefore, it is difficult to compare efficacy of services or service providers, or to know whether or not QOL has been achieved. Reports of research on this problem found in the literature consistently point out the difficulty of measuring quality of life (QOL) particularly of elders with Alzheimer's disease and to accurately capture changes in order to conclude intervention strength or treatment impact. The problem identified in the literature regarding measuring quality of life (QOL) of elders who have AD is the difficulty to accurately capture changes in quality of life and, thereby, accurately conclude intervention or treatment impact. The purpose of this study is to test the impact of the LRP on QOL for South Taiwan's long term care residents diagnosed with mild to moderate AD when QOL is construed as a multi-dimensional amalgam.

The theoretical framework for the study is discussed in detail in this chapter as are the indicators of QOL. Emphasis is on the specific issues unique to elders with AD and on the structure of the QOL model, the outcome measure of the effect of the life review intervention. The second section of the literature review presents the theoretical basis of the Life Review Program © Tabourne for elders. Specifically, continuity and human development theories, and leisure experience as an important aspect of development in later life. Issues unique to Taiwanese/Chinese culture are discussed along with a

comprehensive review of literature on reminiscence/life review as intervention and techniques of structured and unstructured reminiscence or life review.

Section I

Measuring the Quality of Life for People with AD

How to accurately measure the QOL of a person with AD is debated due to the unstable characteristics of the disease. To have a better understanding of AD, it is necessary to explore the issues around diagnosis and the progression of this chronic illness. AD is a “broad-based loss of cognitive function that is gradual and progressive” and it is “associated with plaque in the cortex and fibrillary degeneration in the pyramidal ganglion cells” (Porter & Burlingame, 2006, p53). In terms of neuropathology, it is characterized by two abnormal microscopic structures in the brain, i.e. neuritic plaques and neurofibrillary tangles, and functionally by a decreased metabolic rate of neurons (Alzheimer’s Association [AA], 2007; Alescio-Lautier, et al., 2006). Although AD has no known single cause, it is possible that something triggers the disease to manifest symptoms while the brain’s nerve cells were already damaged years before the symptoms appear (AA, 2007). Cognitive impairment is the major symptom of AD but the memory dysfunction, such as forgetfulness, is the most prevalent and prominent feature of the early stages of the disease. However, it is not easy to detect in the early stage because some cognitive changes are associated with normal aging (Reisberg, Javed, Kenowsky, & Auer, 2005). Some authorities (Chen & Li, 2000; Qiu, 2008) suggest that many hidden cases exist in Taiwan’s community because the number of diagnosed patients (i.e. registered officially) is fewer than the estimation. In Taiwan, people may only get the

diagnosis from a doctor due to the appearance of agitation or disturbing behavior since some decline in memory (e.g. forgetfulness) is common in elders.

Two of the most widely used diagnostic criteria for AD come from the National Institute of Neurological and Communicative Disorders and Stroke –Alzheimer’s Disease and Related Disorders Association (MINCDS-ADRDA) criteria (Mckhann et al., 1984), and the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV, American Psychiatric Association [APA], 1994). Probable, possible and definite ADs were three different categories of criteria given by the MINCDS-ADRDA. For the inclusion of *probable AD*, a diagnosis of dementia was established by clinical and neuropsychological examination (e.g. Mini-Mental State or similar examination); at least two areas of cognition are progressively worsening but without disturbance of consciousness; the onset has been between the ages of 40 and 90 years; and finally there must be an absence of other brain disease/systemic disorder which could account for the cognitive decline. For inclusion of *possible AD*, individuals have a degenerative dementia syndrome, which fails to satisfy criteria for probable AD, with an atypical onset, presentation, or progression of severe cognitive deficits that can’t be linked to other identifiable causes. The diagnosis of *definite AD* must be made when criteria for probable AD are met and there is histopathologic evidence of the illness from autopsy or biopsy. The other diagnosis criteria of DSM-IV are defined as 1) causing the development of multiple cognitive deficits manifested by both memory impairment (e.g. impaired ability to learn new information or to recall previously learned information), and 2) one or more

cognitive disturbances (e.g. aphasia/language, apraxia/skilled movement, agnosia/recognition, or disturbance in executive functioning).

The above two diagnosis criteria are based on the presence of problematic behavior and dysfunction in cognition, but may lack biological information for clinical judgment. The use of neuroimaging and biological markers, such as positron emission tomography (PET), single photon emission computerized tomography (SPECT), and functional magnetic resonance imaging (fMRA), might yield precise diagnoses and predict the condition to exclude other cerebral pathology or subtypes of dementia (Qiu, 2008; Penrod et al., 2007). However, Penrod et al. suggested that the feasibility, cost utility, and usefulness of these techniques are still being researched for assessing progress.

Currently, there is no single test for the diagnosis of AD. However, in Taiwan, it is important to have discernible criteria for an appropriate AD diagnosis because not many possible AD patients are diagnosed or registered officially, even in the long term care facilities. For this study potential subjects came from the population of residents with symptoms listed on patient records that are consistent with AD, although diagnosis usually involves a thorough medical history and neuropsychological examination in order to assess memory and the overall function of the brain and nervous system (AA, 2007). Christensen (2002) proposed a complete physical examination with laboratory testing for the diagnosis of AD, including the following three steps: (a) a patient's clinical history and input from family member or friend; (b) a complete physical examination including laboratory tests and neurologic examination to exclude other causes (e.g. B12 deficiency, brain tumor, or hypothyroidism, etc); and (c) several simple screening tests that can be

readily administered in a primary care setting to assess patient's cognitive and functional ability (e.g. MMSE, clock drawing test (CDT), functional activities questionnaire, etc). In particular, MMSE (Folstein, Folstein, & McHugh, 1975) and CDT are the most commonly used screening tools for AD (Trenkle, Shankle, & Azen, 2007; Toepper, Beblo, Thomas, & Driessen, 2008). Therefore, these two measurements are the major tools used in this study to determine the criteria of inclusion.

MMSE is a well established tool and widely accepted for detecting dementia and predicting neuropsychological functioning (Jensen & Dehlin, 1993). It mainly tests left hemisphere function, including repetition, naming, orientation, attention, recall and comprehension. Traditionally, an MMSE score (0-30) of 23 has been recommended as the cut off point to identify cognitive impairment. A score of 23 or lower is indicative of cognitive impairment. A score between 20 and 23 is indicative of mild AD, 10 to 19 is moderate, and 0 to 9 is severe (Tiraboschi et al., 2000). However, cognitive performance measured by MMSE may vary due to different age and education levels (Crum, Anthony, Bassett, & Folstein, 1993; Uhlmann & Larson, 1991). Consequently, the presence or absence of cognitive impairment for any individual as defined by their MMSE score should be adjusted by their education level (Hartmaier et al., 1995). CDT has minimal language requirements (Lin et al., 2003) and can be a useful tool for detecting the decline of an individual's abstract thinking and reasoning power among early to mild AD patients (Tuokko, Hadjistavropoulos, Miller, & Beattie, 1992).

Cognitive impairments, such as memory loss and difficulty in information processing, are a defining feature of AD, and are the main characteristics compromised in

daily life, as experienced by people in the early stages of AD (Clare, 2003). As Alzheimer's progresses, individuals may also experience changes in personality and behavior, and progressive, irreversible loss of memory, deterioration of intellectual functions, apathy, speech and gait disturbances, and disorientation (Taber's cyclopedia medical dictionary, 1987). Onset is subtle and there is a gradual progressive decline, and even various patterns of deficits are seen in different stages. In early stages, there is loss of recent memory, language problems, personality changes, mood swings, and an inability to retain new information (Buettner, & Fitzsimmons, 2003). In later stages, there is severe deterioration of intellectual and physical functioning with complete loss of language, loss of bladder and bowel control, and inability to walk or perform activities of daily living. The person eventually may be unable to eat or swallow, with an increasing risk of death from malnutrition, aspiration pneumonia (Reisberg, Javed, Kenowsky, & Auer, 2005), as well as urinary tract infection and dehydration (Penrod et al., 2007). As stated in the literature, people with severe AD that show severe cognitive impairment, may not be able to have a coherent conversation with others. Because group discussion is essential to the intervention (i.e. Life Review Program), this study included people with mild to moderate AD as potential subjects only.

Characteristics of mild to moderate AD

The course of AD, with a progressive pattern of cognitive and functional impairment, can vary among individuals. An average duration from diagnosis to death is four to six years, but the actual duration of the disease can be from three to twenty years (AA, 2007). *Mild, moderate and severe AD* are the common classifications to describe the successive

stages of the disease. To diagnose *Mild AD* on clinical interview data, certain behaviors must be assessed, such as concentration, recent and past memory, orientation, calculation, and functional capacity (Reisberg et al., 2005). For example, individuals may not be able to recall current and recent events, remember some personal history of close friends or family members, to calculate a serious subtraction problem, to travel on his/her own, or to handle finances. Memory impairment is a major deficit due to hippocampus damage but does not affect all memory capacities equally (Carlesimo & Oscar-Berman, 1992). People with AD may not be able to remember some specific or particular event/episode, such as what they had for breakfast or who they had Christmas dinner with; however, they may still retain memory for general/fixed information, such as what sorts of foods they have eaten for breakfast or the date of Christmas (Sifton, 2000). Carlesimo and Oscar-Berman suggested that the reduction of explicit memory in one or more of four successive phases (i.e. acquisition, encoding, storage, and retrieval of information) is a pervasive symptom for people with AD. For example, they may display a difficulty in learning new information or remembering current news. Conversely, they may have better performance on tasks that require implicit memory which is fixed or does not depend on particular events (e.g. general knowledge for surviving, and personal experience). Implicit memory refers to a type of memory that previous experiences aid in performing a task without conscious awareness, and may survive largely unimpaired while at the same time a person's explicit memory is damaged by AD. However, there is still a partial deficiency in implicit memory for verbal ability in language, such as word-finding problems and difficulties in the naming of objects (Sabat, 1994). Alescio-Lautier

et al. (2007) also indicated that people with AD may display a dysfunction in visuospatial abilities. Particularly, they are unable to orient in an unfamiliar environment although they are still oriented to time, and to familiar places and peoples. They are still capable of simple tasks of daily life, but for some complex activities like paying bills or for banking, appropriate assistance is needed. In addition to cognitive impairment, several changes in patient's psychological behaviors are prominent in this stage, such as decreased interest in personal and social activities, flattening of affect/ apathy, and emotional or social withdrawal. Reisberg et al. suggested that these behavioral changes are frequently mistaken for depression rather than the result of decreased cognitive abilities. Besides, denial behavior can be viewed as a defense mechanism to protect an individual from the devastating consequences of awareness of dementia.

Most of the symptoms in moderate stage AD are similar to those in the mild stage, but are generally more overt. Profound deficits in cognitive function cause them to no longer be able to live in the community without any assistance. For example, an individual is unable to recall a major aspect of their current life, including home address or phone number, name of a family member, or their school name. Disorientation related to time or place, poor concentration and calculation ability are also significant signs in moderate AD (Reisberg et al., 2005). Psychiatric symptoms such as depression, apathy, or dysphoria may occur more often; otherwise, more overt behavioral disturbances, such as anger, agitation/aggressiveness, verbal/physical violence, anxieties, paranoia/delusion, obsession, wandering, and insomnia, etc., have a 30-70% occurrence rate in patients with AD (Wragg & Jeste, 1989; Hamuro et al., 2007). Sense of loss causes a loss of desire to

perform complex tasks and may induce frustration and individuals may become hostile and agitated (Buettner & Fitzsimmons, 2003). Hamuro et al. also showed that depressive mood, physical aggression and wandering were associated with the severity of AD. Specifically, physical aggression and wandering increased along with the disease severity but depressive mood decreased with the increasing level of severity. Nevertheless, those behavioral and psychological symptoms of dementia (BPSD), psychosis symptoms in particular, cause a loss of quality of life not only for the patients, but also their families and their care givers, and are a major reason for the later stage of patients with AD to require institutionalized care (Hamuro et al., 2007; Vellone, Piras, Talucci, & Cohen, 2007). In the *severe* stage of AD, a succession of functional losses results in the need for assistance with all aspects of daily living, including feeding, bathing, walking and going to the bathroom. Verbal abilities are limited to some simple sentences and eventually to single words (i.e. “yes”, “no”, or “ok”). Since the patient at the end of this stage has already lost their ability to communicate meaningfully and volitionally, very few interventions excluding some drug treatments (e.g. memantine) can be found in research to focus on this population (Reisberg et al., 2005).

On average, the duration from severe stage to death is 2-3 years for AD patients. However, the patient with AD from the onset to moderate stage may take 10 years or longer (Reisberg, et al., 2005). Therefore, interventions may be more effective when they are focused on patients with mild and moderate AD, and try to slow their decline and to enhance their quality of life. Intervention might best target the following cognitive and functional deficits:

1. Cognitive deficits: the level of impairment gradually increases in several cognitive functions, e.g. memory loss, disorientation to time or to place, and concentration
2. Affective deficits: some may demonstrate disturbed behavior, such as aggressivity (i.e. verbal outburst, physical outburst, agitation), affective disturbance (i.e. tearfulness, other depressive manifestations), anxieties and phobias (i.e. anxiety regarding upcoming events, other anxieties, fear of being left alone, other phobias)
3. Social deficits: the above disturbed behavior may decrease interest in personal and social activities, and lead to isolation within peers or family.

Therefore, to capture specific changes as the disease progresses, there is a need to focus on these domains. The aggravation of disease can be detected by the decline of cognitive, emotional, and social functions; however, the amelioration of symptoms may be indicated by the improvement of these functions or even maintaining present status. An important aspect of this study was the choice of appropriate measurements in order to detect the changes of these functions as the effects of intervention.

Measuring QOL in people with AD

In order to measure the efficacy of a revised version of the life review program (LRP-TW) intervention on the QOL of elders with mild to moderate AD in four long term care facilities in South Taiwan, it was necessary to clearly define QOL and how it can be measured for this population. The term quality of life (QOL) is widely used by practitioners and researchers, but there is no universal definition and the phenomenon

remains “a source of some confusion (Stewart & King, 1994, p27)”. The term “quality” implies an evaluation or measurement in some way, and “QOL” may indicate someone’s judgment or rating of his/her own life, including a variety of components of life such as health, social life, financial situation or work. Gabriel and Bowling (2004) indicated that QOL reflects both macro-societal and socio-demographic influences on people and the personal characteristics and concerns of individuals. It could be viewed as an indicator of subjective perception or a degree of satisfaction regarding his/her own life. Unfortunately for those with AD, “quality of life” is a concept much in the forefront of gerontological research but for the most part not in patients with Alzheimer disease (Lawton, 1994, p.138). Since the mid 1990s, gerontology has become interested in researching how to measure QOL in people with dementia but information is obtained from caregivers or health care professionals instead of directly from the persons with dementia. This operationalization does not reflect the definition of QOL since QOL should be judged or rated by self; however no global solution has evolved (Brod et al., 1999). The result is a debate whether QOL should be reported by the persons with dementia or their proxies.

In order to try to articulate precise evidence of QOL, Gabriel and Bowling (2004) interviewed 999 elders aged 65 or more years and identified five main themes that represented high QOL: (a) having good social relationships, help and support; (b) living in a safe environment including financial security, (c) engaging in hobbies and leisure activities to help maintain a social network and useful role; (d) having positive psychological well-being, (e) having good health and independence. Their report indicates that every interviewee has his/her own priority and interpretation of what

constitutes life quality. Another study (Berglund & Ericsson, 2003) supported this idea and found in interviews different meanings of QOL between geriatric staff and elders. Consequently, the proxy method of obtaining measures of an individual's QOL may not yield the same values the individual would give. Inevitably, seniors, particularly those who have dementia, have been characterized by inability to give reliable appraisal of the quality of their lives and, therefore, require proxy measures (Brod et al., 1999). Research reported that a significant proportion of persons with AD who live in long term care facilities cannot respond or provide responses of questionable validity due to a lack of memory, inability to concentrate, lack of the capacity for introspection, unawareness of their impairments and disabilities, inadequate or absent language skills, thought disorders, or acquiescent response bias (Sloane et al., 2005). However, Kane (2003) indicated that in her study there were substantial numbers of nursing home residents who scored poorly for cognition on their Minimum Data Set (MDS) assessment but were able to respond to a rather long QOL interview. It is to be regretted that the validation of the subjective measurement still left a question mark in her study. In the study by Novella et al. (2006), a poor to moderate relationship was found between the QOL report (i.e. SF36 score) from people with mild to moderate AD (MMSE is greater than nine) and the QOL report from their proxy evaluators (i.e. family and staff). Furthermore, the type of relationship between the index subject and the proxy evaluator, and the severity of dementia are two major factors that may influence the reliability of agreement. This finding corresponded to their earlier study (Novella et al., 2001) that found the severity of disease is the main determinant for the feasibility, acceptability, and reproducibility of the QOL

measurement. Because of this finding, QOL measurements may be unsuitable for severe dementia. Nevertheless, it may violate the core value of QOL which should represent personal judgment. Since obtaining a verifiable QOL report from the people with AD is a huge challenge for the practitioners or researchers, recent research has mainly focused on developing new scales as well as on the agreement between patient and proxy reports of QOL (Jonker, Gerritsen, Bosboom, & Van der Steen, 2004). Perhaps the optimal appraisal is the aggregate data of patient and proxy reports and evidence from other sources, such as observation of feedback from caregivers or health professionals.

Conceptualized a quality of life for people with AD

The meaning of the term, QOL, varies widely among individuals with different perspectives. Dröes et al. (2006) interviewed 106 elders with dementia regarding their opinions on what was important to their quality of life, and concluded that 12 domains exist: (a) affect/ feeling, (b) self-esteem/ self-image, (c) attachment/ involvement, (d) social contact, (e) enjoyment of activities, (f) aesthetic sense, (g) physical and mental health, (h) financial situation, (i) security and privacy, (j) self- determination and freedom, (k) being useful/giving meaning to life, and (l) spirituality/religion/faith. Although not every domain is important to all of the interviewees, there is no single aspect that can be said to represent a person's quality of life. The elders' opinions tended toward "a more holistic, socially integrated definition, acknowledging the role of psychological, spiritual, social-behavioral, and environmental interventions in the maintenance or enhancement" of QOL, but not limited to a single role or a single status as an essential dimension while measuring (Gentile, 1991, p80).

Lawton (1991b) conceptualized a structure of QOL in terms of a measuring model, which is different from a unidimensional measure produced directly or by combination of multiple attributes. He insisted that “a conceptual structure for quality of life is necessarily multidimensional, just as is life itself (p6)”, and generalized four robust evaluative dimensions: (a) behavioral competence, (b) perceived quality of life, (c) psychological well-being, and (d) objective environment, to represent individual life quality. Furthermore, for people with AD, multiple domains should be assessed, namely cognitive function, competence in activities of daily living (ADL), socially appropriate behavior, engagement in positive activities and presence of positive and absence of negative affects (Lawton, 1994). The following discussion has the further interpretation regarding the four domains based on Lawton’s concept. This discussion also provides the fundamental theoretical framework for this study to structure a complex measurement of QOL and its indicators.

The first dimension, *behavioral competence* represents the “social-normative evaluation of the person’s functioning in the health, cognitive, time-use, and social dimension (Lawton, 1991b, p8)” and it can be arbitrarily measured according to objective performance and functioning status. This definition makes it clear that externally observable behavior can be used because it represents an objective perspective and it can be evaluated by social-normative and objective criteria, such as physical health, daily activities, cognitive functioning, time utilization and efficiency, and social behavior. Particularly, they are aspects of functioning that are strongly influenced by illness (Jonker et al., 2004). For instance, cognitive impairment might cause problematic daily

performance and ultimately result in the decline of quality of life, although cognitive function is not usually identified as an element of QOL(Lawton, 1994). Research by Carr, Gray, Baty, & Morris (2000) revealed that subtle changes in memory loss, or cognitive function complaints over time, are important indications for patients with mild AD, and daily self-reporting or proxy documentation (i.e. family or staff) might be a reliable informant. Nevertheless, a standard assessment instrument complying with social-normative and objective criteria, such as Mini-Mental State Examination (MMSE), can be another reliable source to detect the changes of cognitive functioning (Holsinger, Deveau, Boustani, & Williams, 2007). Lawton also recommended as predictors of threats to QOL, noticeable changes in abilities to perform activities of daily living (ADLs), another domain of behavioral competence. Serious consequences to socially inappropriate behavior (i.e. anxiety, depression, agitation) and disengagement from positive activities and social interaction with others, impact life quality results negatively. These are behaviors with measurable ratings made by an observer including observations of individuals engaging in organized group activity, interaction with peers and staff via verbal, tactile or eye-contact behavior.

The second dimension, *perceived quality of life*, refers to the person's subjective evaluation of function, and it has an internal structure that directly parallels the dimensions of behavioral competence (Lawton, 1991a; Ory, Cox, Gift, & Abeles, 1994). There is an "intrapersonal" (subjective) appraisal of how close to a personal benchmark each individual's life has come thus far. So the early life experiences may insulate personal perception of QOL and it will not be easily changed by any interference.

Specifically, this “domain-specific perceived QOL” is the degree of satisfaction with all important life domains, including health, social functioning, leisure activities, living accommodation or income (Lawton, Winter, Kleban, & Ruckdeschel, 1999; Jonker et al., 2004). Studies (Gabriel & Bowling, 2004; Dröes et al, 2006) stated that health concern is one of the major factors in QOL among an aging population, including people with dementia. Because poor health limits the ability to engage in individual leisure activities or social activities of all kinds, it indirectly results in negative effects and reduces social interaction with others. On the other hand, measuring health from a broader perspective based on an individual overall level of well being and quality of life is common method in healthcare. For example, World Health Organization (WHO, 1997) linked health to the QOL and defined QOL as

the perception by individuals of their positions in life, in the context of culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns. It is a broad ranging concept affected in a complex way by the person’s physical health, psychological state, personal beliefs, social relationships and relationship to salient features of their environment. (p.1)

Based on this definition, several health-related quality of life (HRQOL) measurements have been developed to discern individual perception on general health, physical health and psychological health. For instance, SF36 is a tool widely used to determine the effects of treatment on individual perceptions of QOL in clinic practice, research, and in health policy evaluations (Ware & Donald, 1992).

The third dimension, *psychological well-being*, according to Lawton, is determined by each person's ability to adjust to changes, or ease transitions while retaining and continuing to develop a sense of selfhood. Psychological well-being is seen as the generalized mental health outcome comprised of the complex of domain-specific QOL evaluation, and interpersonal factors that compose people's everyday lives, such as mental health, cognitive judgment of overall life satisfaction, and positive and negative emotion experienced as either states or traits (Lawton, 1999). Schmutte and Ryff (1997) also believed that psychological well-being evolves across the developmental life stages incorporated with personal life events, challenges and accomplishments. Therefore, psychological well-being may be affected easily by external circumstances and changes in life situation over short periods of time, such as current health condition or intervention. So it is preferable to use measures that indicate emotional states and perhaps, capture short-term changes, for example, following an intervention (Lawton, 1997).

Typical indicators of psychological well-being include mental health (i.e. depression), cognitive judgments of overall life satisfaction, and positive and negative emotion (Lawton, 1991b). Particularly, psychological well-being is associated with affective states which can be positive or negative in nature. A two-factor conception of affect (i.e. positive affect and negative affect) is still relevant when considering ratings or categorizations of arrays of emotions to aging (Lawton, Kleban, & Dean, 1993). Positive affect can be measured by various sectors of pleasantness, for example, happy, interested, energetic, content, and warmhearted; on the contrary, negative affect is represented by the sectors of unpleasantness, such as sad, annoyed, worried, irritated and depressed

(Lawton, Kleban, Dean, Rajagopal, & Parmelee, 1992). Of the negative affect factors, depression is a more focal symptom and prevalent in the older population (Yesavage et al., 1983). Zank & Leipold (2001) also verified that people with dementia experience cognitive impairment which had significant influences on their emotion (i.e. depression) and life satisfaction. Particularly, Geriatric Depression Scale (GDS) was developed as a basic screening measure for depression in older adults (Yesavage et al). It is easy to administer, needs no prior psychiatric knowledge and has been well validated in many environments.

The last dimension, *objective environment*, is hypothesized to afford some forms of behavioral competence and to constitute a subset of important conditions for perceived quality of life. It is advantageous to search for objective environmental factors that can be evaluated by physical or consensual criteria independent of the individual who experiences them (Lawton, 1991b). Providing points of orientation in the environment (i.e., clocks, calendars, current magazines and newspaper) and a consistently structured environment are essential for managing disorientation in elders with AD (Stumbo, & Peterson, 2004). Zeisel et al. (2003) developed an environment-behavior factors model to classify several environmental features in special care units for elders with Alzheimer's disease, such as exit control, walking paths, individual space, common space, outdoor freedom, residential character, autonomy support, and sensory comprehension, and used a rating checklist to detect the environmental influence. Their results showed that intentional environments might be associated with reduced depression, social withdrawal, misidentification, and hallucinations. This finding corresponds to the assumption that

objective environment can be a confounding variable or operating variable, and may change an individual's perception of psychological well-being and behavioral competency in a short time period.

These four dimensions may overlap one another and be dependent on each other in contributing to overall QOL, but each dimension may also be defined as an independent aspect of life with its own specific goals. Lawton (1991b) proposed that QOL should look separately at two aspects, one is the intrapersonal aspect, and the other one is the social-normative aspect. The intrapersonal views of QOL express that each individual has generalized a comprehensive set of values into a self judgment and is not accountable to any external standard, such as subjective psychological well-being and perceived quality of life. The social-normative aspects of QOL present a valid view of objectively measurable or consensual evaluations of facets of life that must be considered in the assessing process, such as objective environmental and behavioral competence. In addition, the concept of QOL should maintain a dynamic, ongoing nature because the interaction between person and environment is always reciprocal. For instance, a poor environment may decrease a person's well-being but sometimes people can alter their environment to make it better. Person and environment always influence each other and a poor environment may negatively impacts the person's QOL. On the contrary, an intervention or a treatment that altered the environment could play a role in improving a person's QOL. Based on Lawton's model, the impact of the intervention could be detected from a measure of changes in an individual's QOL. Therefore, the Life Review Program acts as the objective environment that has been manipulated in this study, and

the effects of this intervention should be detected from two perspectives: one is subjective measurement which comprises perceived quality of life and psychological well-being, and the other one is objective measurement which comprises objective behavior. Furthermore, the cognitive, affective, and social characteristics of mild to moderate AD should be considered in the selection of measuring indicators of QOL, and used to reasonably define the intervention outcome. The literature on life review is explored in the following section, and the implication for this study are discussed.

Section II

A Life Review Program for People with Alzheimer's Disease

Recalling one's past is a natural behavior, evaluative reminiscence is particularly important for people in crisis and for elders (Butler, 1963). The following section explores the literature concerning both Eastern and Western perspectives on life review to uncover the essential power behind the Life Review Program to mediate between latent skills and current level of functioning. This section also presents assumptions for this study to hypothesize the effects of the life review program.

Human development and continuity in aging

Confucius concluded autobiographically in reviewing his life at the late stage, as following: "吾十有五而志於學，三十而立四十而不惑，五十而知天命，六十而耳順，七十而從心所欲，不逾矩" (At the age of 15, I determined and devoted myself to learning; at 30, I established in my profession; at 40, my doubts faded; at 50, I fully committed to my granted mission by heaven; at 60, my ear was attuned; at 70, I followed my heart/desire without overstepping the mark. Translation as cited in Sun, 2008, p.563). Today, this famous saying not only represents Confucius's personal life strengths in different stages, but also guides Chinese people to pursue their lifelong goals and to complete their life tasks at certain ages. Confucius's message emphasizes that as humans develop, each person should gain certain strengths at a certain age due to accumulating knowledge and experience through continuous learning. Two thousand years after the death of Confucius, a Western psychologist, Erikson (1950) proposed a similar

developmental theory that outlines eight life stages of psychosocial development during which strengths are created that are “necessary for a mutual involvement in an ever-increasing social radius, from infancy through adulthood and into old age” (Erikson, Erikson, & Kivnick, 1986, p33). Erikson collected longitudinal life-cycle data over more than five decades and, together with colleagues, further clarified the eight life challenges to develop hope, will, purpose, competence, fidelity, love, care, wisdom, which are the major life strengths of infancy, early childhood, play age, school age, adolescence, young adulthood, adulthood, and old age (see Figure 2).

Old Age								Integrity vs. Despair WISDOM
Adulthood							Generativity vs. Self-absorption CARE	
Young Adulthood						Intimacy vs. Isolation LOVE		
Adolescence					Identity vs. Confusion FIDELITY			
School Age				Industry vs. Inferiority COMPETENCE				
Play Age			Initiative vs. Guilt PURPOSE					
Early Childhood		Autonomy vs. Shame, Doubt WILL						
Infancy	Basic trust vs. Basic mistrust HOPE							

Figure 2. Erikson’s psychosocial stages of life¹

¹From *Vital Involvement in Old Age* (p.36), by E.H.Erikson, J.M.Erikson and H.Q.Kivnick, 1986, New York: W.W. Norton & Company, Inc. Copyright 1986 by Joan M. Erikson, Erik H. Erikson and Helen Kivnick. Reprinted with permission.

For each major stage of development, a phase-specific developmental task is challenged, tackled and dealt with successfully or unsuccessfully. The specific task of each stage must be solved and the solution/strength is prepared from the previous phase and is continued in subsequent ones (Erikson, 1959). Developing life strengths necessarily relies on the dynamic balance of the two seemingly contradictory dispositions (i.e. syntonic and dystonic) in each stage of psychosocial development (Erikson et al., 1986; Kivnick & Murray, 2001). Kivnick & Murray (2001) further surmised that “individual health in any psychosocial theme requires a balance between strengths and weaknesses (p.19)” because psychosocial health rests on a “dynamic balance” of each theme’s syntonic and dystonic tendencies. For example, parents or caregivers must provide both contrary dispositions (i.e. a sense of trust and a sense of mistrust) for creating their children’s first life strength, hope, in the infancy stage. Opportunities for children to deal with situations involving trust and mistrust such as when children are put to bed in their own rooms but are awakened by their parents in the morning, or leave them with a friend over night but return to pick them up as promised.

At the last stage of old age, older adults should balance a sense of integrity and a sense of despair regarding his/her whole life by reviewing their past success and failure, commission and omission, or gain and loss. Work to find a balance between their successes and their failures or least successful outcomes for example occasions when they dropped a friend that hurt their feelings rather than chastising the behavior and keeping the friend, or feeling like a total failure when caring about oneself to another. Ultimately, the life cycle is completed with the last stage “integrating maturing forms of

hope, will, purpose, competence, fidelity, love, and care, into a comprehensive sense of wisdom (Erikson, et al., 1986, p.55)”. Corresponding to Confucius’s final strength to follow his personal desires without breaking the moral rule, Erikson also insisted that the optimal goal for the older adult in their last stages is to pursue “ego integrity (1950, p.233)” via strengthening the sense of self identity. A person who “achieves ego-integrity in old age believes his or her life has significance and meaning, is fulfilled, and does not fear death (Parker, 1995, p.520)”. Undoubtedly, both Eastern and Western cultures believe that older adults at the final stage should be free from any intrapersonal or external constraints, including the fear of death by using their wisdom accumulated from lifelong strengths. This premise resembles Atchley’s (1989) continuity theory for normal aging process that middle-aged and older adults attempt to accomplish their life challenges or tasks by applying familiar strategies in familiar areas of life.

According to continuity theory, older adults who are processing normal aging are motivated toward inner psychological continuity as well as outward continuity of social behavior (Parker, 1995). These are two major types of continuity presented by Atchley (1989) in the article “A continuity theory of normal aging”. Individuals maintain an inner continuity regarding “a remembered inner structure, such as the persistence of a psychic structure of ideas, temperaments, affects, experiences, preferences, dispositions, and skills (p.184)”. Individuals are highly motivated toward internal consistency, that is, they continue to remain the uniqueness throughout their lives. It is an important part of self-mastery and competence for effective day-to-day decision making. Internal continuity accounts for individuals seeking a sense of ego integrity because a long-standing internal

continuity relies on the maintenance of a sense of personal history and acceptance of that history. Conversely, external continuity is defined as “a remembered structure of physical and social environments, role relationships, and activities (Atchley, 1989, p.185)”.

Individuals may derive perceptions of external continuity by existing and functioning in familiar environments, practicing familiar skills, and interacting with familiar people. Parker (1995) interpreted this idea further as the need of social support and other’s awareness of the individuals as the motivations of external continuity. While interacting with others, receiving feedback from others also contributes to formation of self-identity. Therefore, individuals carrying on both internal and external continuity throughout their lives enhance the formation of self concept or identity. Individuals in later life will confidently “opt for familiarity and comfort over the unknown and potentially uncomfortable (Parker, 1995, p.521)” based on what they used to do when they encountered a similar situation. This concept is important to understanding the confluence among theories of development and continuity and for understanding how the LRP intervention intervenes when normal transitions are inhibited by disease, physical and psychological constraints. Obviously, memory is the major key to process internal and external continuity for elders because they have to recall what has come before. Thus Parker (1999) believed that reminiscence is a valuable mechanism for maintaining a sense of continuity because older adults prefer to talk about their life stories verbally, incorporating past events into an organized sequence, giving those stories a personal purpose and meaning for themselves.

Reminiscence

Reminiscence is an internalized behavior during which “there is often an interplay, a dialectic, between an individual’s internal mental processes and external manifestations of thought” (Parker, 1995, p.515). Although not everything that is thought internally is expressed externally, people who review the events of their life still select significantly valuable stories to reflect their values. Therefore, Parker proposed that the reminiscence process might be completed on two different levels: intrapersonally (internally) or interpersonally (in a dyad or group). When people talk about their past to others, they not only ruminate or introspect what they believe and value about the relationships among self-relevant events across time, but also they reconstruct an interpersonal context by obtaining input from others and achieving reciprocity or an exchange of ideas. This process contributes to developing, maintaining, or reconstructing personal identity.

Reminiscence is a complicated mechanism, it is not merely someone’s recall of the past, but also must represent a reinterpretation of events that contain certain meanings for the person. According to the literature (Bluck & Alea, 2002; Cappeliez, Rivard, & Guindon 2007; Watt & Wong, 2002; Webster & Haight, 1995), reminiscence may serve the following purposes:

1. *Integrative*: to find a sense of meaning and coherence in one’s life as continuity, and to view self as meaningful and coherent.
2. *Instrumental*: to use past experiences to solve current problems and cope with difficulties, and to view self as active and competent.

3. *Transmissive*: to transmit past experiences to an instructive story, and to view self as experienced and wise.
4. *Narrative*: to simply tell *self* stories, and to view self as communicative and entertaining.
5. *Escapist*: to find a refuge in the past glorified story, and to view self as blocked and futureless.
6. *Obsessive*: to ruminate on unresolved past difficulties and traumas, and to view self as fragmented and meaningless
7. *Death preparation*: to *deal* with the issue of death, and to view self as transcendent and spiritual.
8. *Intimacy*: to keep in contact with a departed through memories, and to view self as connected and faithful.

Generalizing from the above discussion, three global functions can be used to examine reminiscence as a mechanism for continuity: self-focus (coherence and meaning), guidance (knowledge-based), and social bonding (emotion management) (Cappeliez, Rivard, & Guindon, 2007). *Self-focus*, named “*private function*” by Parker (1995, p.521), refers to maintaining a sense of internal continuity and achieving a sense of personal identity. Creating a private life story or re-ordering personal events may also entail the recall, evaluation, and synthesis of positive or negative memories, and contain several functions of reminiscence (i.e. integrative, death preparation, obsessive and escapist). The *guidance function* includes instrumental and transmissive reminiscence; in terms of recalled and shared personal knowledge and experience. Episode of memory

involving stressful life circumstances may have the potential of restoration if the problematic life situation can be coped with, or can be applied to present success as a “lesson of life”. Narrative reminiscence can provide *social bonding* and intimacy in order to maintain relationships. Simply recalling the event and sharing the story eventually increases positive feelings and enhances social interactions; besides, social support may be obtained via feedback or confirmation from others. Additionally, expressing negative feelings (e.g. anger, sadness or nostalgia) induced by a tragedy (e.g. lose son), and releasing the grief may be a relief for the individual, with the support of others. *Emotional management* should be another independent function of reminiscence. Parker also suggested that *cognitive function* should be considered as a major component of reminiscence because reminiscence relies on encoding, decoding, and retrieval mechanisms. Although cognitive capacity may decrease with aging or disease (i.e. Alzheimer), older adults may enhance cognitive performance by exercising memory systems and improving plasticity via reminiscence.

Life review

Individuals appear to keep their past memories stored in the brain even as particular areas are gradually impaired by disease (i.e. Alzheimer’s disease). Reminiscence may be the key to unfold memories and make “the past become a rich resource of living in the present and anticipating the future (Gibson & Burnside, 2005, p175)”. Since the 1960s, reminiscence technique has developed as a popular psychosocial intervention and has been used by many professional practitioners, such as psychologists, nursing staff, social workers, occupational therapists, and recreational therapists. Reminiscence is defined as “the

act or process of recalling in the past (Butler, 1963)” that can occur in people of any age, and any person can retrieve his memories whether the reminiscer is a participant who shares stories with others, or an observer who listens to others quietly without sharing. Different from reminiscence, Butler (1963, p66) presumed that “life review as a naturally occurring, universal mental process characterized by the progressive return to consciousness of past experiences and, particularly, the resurgence of unresolved conflicts; simultaneously, and normally, these revived experiences and conflict can be surveyed and reintegrated”. Life review is more commonly observed in the aged because of the nearer end of life. Butler also made a clear distinction between life review and reminiscence referring to life review as guided reminiscences, or reminiscence as the means for achieving life review. He also argued that an individual must review, revive, and reintegrate the experiences of life in order to adapt to old age, and to possibly respond to the biological and psychological fact of death (Butler, 1963; Kasl-Godley & Gatz, 2000).

Life review work as a therapy

Life review as an intervention must be clearly differentiated from other types of recall (Webster & Cappeliez, 1993; Haight, Michel, & Hendrix, 1998). Haber (2006) proposed that life review is a commonly occurring process usually for people in later life. Through guidance, it systematically evokes elders’ salient memories at each stage of the life cycle, to help them cope with loss, guilt, conflict, or defeat, and to help find meaning in their accomplishments. Life review, as a specific form of “reminiscence”, may be triggered by different situations and may serve a certain purpose for elders. Allowing

them to go through the experience process to cognitively restructure past memories, review past strengths and re-interpret failures and accomplishments over the life cycle (Butler, 1974; Wong & Watt, 1991; McKenzie, 2004). Life review approach could be a tool that helps older people accept their lives, prevent despair, and achieve integrity.

Studies show that a type of structured reminiscence, life review, has effectively promoted life satisfaction of homebound elders (Haight, 1988), and the follow up results also revealed that the effects of the intervention lasted over a year (Haight, 1992). Haight and Dias (1992) also found that life review was the most effective type of reminiscing for elders from retirement communities and nursing homes to increase their life satisfaction and decrease depression. Hirsch & Mouratoglou (1999) recorded the progress of an older woman with memory difficulties. The major outcome in their study was that the subject successfully altered totally negative thoughts about her parents to include both positive and negative, and attained greater ego-integrity after the therapy. In this case study, life review therapy was successfully conducted despite the client's memory problems.

Life review program for people with AD

The life review program is structured on Erikson's eight stages of psychosocial development, "which produced the strengths necessary for a mutual involvement in an ever-increasing social radius, from infancy through adulthood and into old age" (Erikson et al., 1986, p.33). An effective life review program could be viewed as an intervention for elders with dementia to help them accomplish a successful integration of the personal accumulated experiences and achieve the result of self-acceptance, strong self-identity and recognition of one's worth and value (Tabourne, 1991).

Tabourne (1991, 1995a, & 1995b) used life review as a framework to develop a structured reminiscence recreational therapy intervention for confused nursing home residents in two studies and found that the Life Review Programs (LRPs) benefited the confused nursing home residents in decreasing disorientation and increasing social interaction, cognitive function, social skill, and psychological well-being, e.g. participants demonstrated improved memory, increased perceived social values of self, decreased levels of disorientation, reduced fear and anxiety, improved self-esteem, and improved social interaction within the activity group. McKenzie (2004) revised Tabourne's LRP to a new 10-week program centered in African American culture for African American dwelling seniors who live in the community. Although no statistically significant changes were found on participants' psychological well-being and life satisfaction, the participants still reported high levels of well-being and life satisfaction and stated that the program was helpful to make the review process easier. The interview results indicated that LRP triggered self-evaluation and self-reflection, and facilitated opportunities to draw meaning from life. This corresponded to one of the purposes of life review, which is to help individuals more easily reminisce about their past (Butler, 1963). A 4-week culturally specific program revised from Tabourne's LRP was tested by Lee (2005) in South Korea. The outcomes of the study verified that the program had a statistically significant effect on improving AD seniors' self-esteem and depression but had no statistically significant follow-up effect (after 6-month). From the qualitative data, six themes were identified from the interview: 1) the LRP facilitated the life review process, 2) the LRP helped discovery of meaning in life, 3) the LRP encouraged thoughts

about identity, 4) the LRP facilitated the process of evaluating life, 5) being in the LRP helped decrease emotional disturbances, and 6) the chance to be themselves was a big factor that increased participant's self-esteem and life satisfaction. These findings indicated that the value of the LRP is to help participants to meaningfully re-evaluate their lives.

The above review confirms that the LRP is an evidence-based recreational therapy intervention program based on a structured reminiscence, life review approach, to assist older adults in retrieving or redefining past memories and skills to compensate for present deficits in cognitive, emotional, and social functioning. Distinguished from strategies in other psychotherapy approaches, specifically using leisure experience as a modality, not only triggers and provides access to individual's memory storage, but also affords the opportunity to explore the meaning of leisure over the life span. Leisure, which is formed in diverse recreation activities, can be experienced in people's daily lives and has a huge influence on many aspects of human development, such as physical abilities or cognitive functioning.

Leisure and human development

Leisure, recreation, and play are important to individuals across their life span and people used to invest time and energy in doing it, particular in childhood; however, these needs are often dismissed for the adult, especially in Taiwan. Taiwan has been recognized as the most industrious country of the world in the 2002 IMD World Competitiveness Yearbook because Taiwanese on average invest 2,282 hours a year in work (Lan, 2003). Particularly among older adults, leisure was seen as free time as

opposed to “work” and it only can be sought once the basic living needs are satisfied.

Yeh (as cited in Liu, Yeh, Chick, & Zinn, 2008) proposed a definition of leisure from the Chinese view that,

Leisure is recognized as an arena in which an individual deals with two fundamental human concerns, that is, living a good life and pursuing happiness. There is little doubt the importance and consideration of leisure rises whenever our basic and most pressing needs are satisfied. (p.488)

Inherited from ancient Chinese agriculture society, daily leisure activities are equal to the short term rest after farming or hard work (Wu & Lin, 2004), and often are discouraged by the stereotype of “idleness” (i.e. a Chinese proverb: “業精於勤，荒於嬉” means “diligence makes success whereas pleasure-seeking makes failure”). Although the contemporary generation has adopted the concept that leisure is a major purpose of life from Western culture, the older generation tends to deny the importance of leisure and retain traditional habits that have made a huge influence in their life style. For example, several Chinese celebrations (i.e. Chinese New Year) have played an important role in Taiwanese society and the related activities, such as sacrificial rites or cuisine making, are required during the specified day or period. The original purpose of these activities was to show respect or connection with an ancestor, and just evolved into a tradition. Adults are allowed to do these activities without blame because they have a certain purpose, instead of just doing it in their spare time.

Even though leisure is equated with idleness and contrary to traditional values (i.e. industrious) within the older generation, it actually exists in their lives in various forms

and is beneficial across their life span. For example, most Chinese New Year activities require participation by the whole family together. Certain leisure benefits, such as family cohesion, may make a huge impact on the quality of life among the family members.

From the contemporary Western viewpoint of leisure studies, leisure serves many purposes and functions at different stages throughout a person's life, and is characterized by different activities none more essential than the activities of childhood. Cassidy's (2005) research indicated that the patterns of child leisure behavior may affect lifelong attitudes and future engagement in any life event. Leisure experience is not only the resource for personal relaxation and enjoyment, but also delivers standards for behavior and values that cross all domains of life (Siegenthaler & O'Dell, 1998). Nevertheless, leisure is also "a context for continuing development in later life" (Kleiber, 1999, p.164). Life can be categorized into several sequential stages (i.e. childhood, adolescent, adult, and older adult), as an individual transits from one stage to the next stage, they attempt to make adaptive choices by applying familiar knowledge, skills, and strategies when they encounter changes or challenges (Erikson et al., 1986; Atchley, 1989). Kleiber commented that "leisure is relevant to the processes of growth and adjustment in later life (p.164)". Therefore, past leisure experiences enrich the stored memory and are available for use in later life, and contribute to better integration at the end stage because those experiences carry a wealth of meaning for well-being, such as self-identity, self-esteem and self actualization (Cziksenmihalyi & Kleiber, 1991).

Kleiber (1999) proposed four principal ways that leisure experience relates to human development. The first relationship, leisure experience is a "*derivative*" (p.26) from the

developmental processes and life circumstances, including all normative life events (i.e. graduation and retirement), or non-normative life events (i.e. divorce or a sudden inheritance). Leisure behavior changes can result from developmental changes in a person's social expectations and role responsibilities, for example, parents may discard some habits after they have a child. Secondly, leisure experience serves as an “*adjustive*” (p.27) buffer distracting individuals from certain negative life events, a major motivation for leisure behavior is as escape from life stress.

The third relationship between leisure and development is “*generative*” (p.27) growth and personal transformation. Leisure activities characterized by the freedom of choice offer the opportunity for individuals to express or recognize their self-images and improve their self-concepts (Haggard & Williams, 1991). These opportunities contribute to the growth of an increasingly complex self, in addition to the building and testing of new skills in the course of more mature self-expression. However, not all benefits of leisure are positive developments; on the contrary, an outcome can be a “*maladaptive*” developmental relationship if leisure is overinvested in. For example, athletes invest too much energy in one sport risking a narrowing of identity and the neglect of other tasks; and furthermore, negative leisure (i.e. gambling, or illicit drug use) definitely serves as an impediment to optimal development in youth. Thus, leisure experience may lead to both positive and negative influence for human development.

Based on the above assumption, Kleiber (1999) suggested that changes in leisure behavior, indicated by the function and value of leisure experience are predictable over a lifetime. In addition to the developmental changes, several longitudinal studies added that

cohort effects also make a huge contribution to the changes in leisure interests and values. People who were born in 1920 may have different leisure experiences in childhood than those who were born in 1950. It is necessary to differentiate among distinct but influential values and the various functions of leisure (i.e. culture habit, developmental process, and cohort effect) in discussing leisure experience across the life span. The following discussion presents the role of leisure in the dynamics of development during successive periods in the life course, framed by Erikson's eight life stages (Erikson, 1950; Erikson, 1959; Erikson et al., 1986) and anticipated changes in leisure behavior over the life span (Kleiber, 1999).

Stage I Infancy – Hope: Basic Trust/Mistrust

An infant learns to trust if his/her needs can be met constantly by the parent or caretaker (e.g. to feed baby when he is crying for food), but will also need an appropriate amount of mistrust (e.g. to be out of his sight) to be aware of threats. A balanced sense of trust and mistrust will reinforce a baby to develop “hope” by receiving any care or love from mother or caretaker because the world is a good, trustworthy, and safe place. Any activity providing emotional security and peacefulness may establish the trust relationship between baby and mother or caretakers, such as touching, holding and waving the baby, or humming a lullaby to the baby.

Stage II Toddlerhood- Will: Autonomy/Shame, Doubt

One-to-three year old children need to establish a sense of autonomy by gaining control of vital functions, being able to say “no”, and moving independently of parents. On the other hand, a toddler also needs to receive appropriate restraint but not excessive

interference that could result in shame or doubt about the child's ability to be independent and self directed. A balanced sense of autonomy and shame/doubt leads to beliefs about having personal will and efficacy and an initial feeling of freedom. Toddlers tend to do activities that involve exploration and experimentation at this stage, like chasing moving objects (e.g. dog, cat, or bug), playing in the sandbox or mud. Obviously, this stage is critically important for a person to learn freedom through leisure.

Stage III Play Age- Purpose: Initiative/ Guilt

By three to five years of age, children who have successfully resolved the issues of the previous two dispositions begin to exercise initiative. In this stage, children experience initiative by venturing out and attempting some new activities. Children explore their capabilities and limits. Sometimes those behaviors may easily overstep boundaries and are stifled by parents or caregivers, and then a sense of guilt will be induced. The balance between initiative and guilt brings with it a capacity for independent or purposeful action in the future without avoidance or dependence. Leisure activities that involve exploration and creation are emphasized as well in this stage. Play activities or games satisfy the need for independence and develop initiative, such as treasure hunting, tree climbing, and hide-and-peek.

Stage IV School Age- Competence: Industry/ Inferiority

Children in the age range of 6 to 12 should deal with the focal theme of industry and inferiority to establish relative competence. Being able to produce something in a certain way or to be encouraged by adults when the child produces something results in a sense of industry. By contrast, impediments often result in feelings of inferiority when others

(e.g. parents, teachers, and peers) blame or deride them for doing something. A healthy balance contributes to a sense of competence because the children learn to win recognition by working hard. This stage is also the essence of socialization because most cultures have established practices and opportunities for moving children out of dependence and preparing them to become productive members in the society. Examples include school classes, boy/girl scouts, sports, festivals, or cultural rituals. Many leisure activities involving participation in groups initiate children's socialization, such as dodge ball or playing marbles. Besides, leisure activity may also become a prize or reward after learning or working hard.

Stage V Adolescence- Fidelity: Identity/ Confusion

Adolescence, ages 12 to 18, is characterized by the struggle to transition from child into adult. The major task for this stage is to gain understanding of self and unique personal value at present or imagined for the future. The healthy balance of identity and role confusion results in developing an authentic self. Typical efforts to distinguish themselves involve trying a variety of beliefs, behaviors, and associations with people, such as parents, teachers, peers, or coaches to find a comfortable fit, and may drive the adolescents to maintain loyalty, fidelity, and responsibility in their social relationships. Leisure activities facilitate this process as well. Adolescents seek freedom to choose their leisure interests, to express their uniqueness or just be seen doing things differently than their parents. While taking a special interest in an activity or doing it with like-minded friends they reinforce a sense of independence and uniqueness, and relatedness that may be continued through adolescence to adulthood.

Stage VI Young Adulthood- Love: Intimacy/Isolation

From 18 to 35, young adults who successfully evolved from their identity struggles strengthen their ability to love others in this stage via reconciling experiences of intimacy and isolation. Intimacy emerges from experiences of stable and mature relationships with same or different gender close friends and sexual partners. The ability to enjoy being alone is necessary for a balanced development, but avoidance of intimacy or fear of losing the self in the presence of another leads to socially isolating behavior and self-abandonment. An intimate relationship requires two people to be able to accommodate the values and interests of one person to those of the other, including the patterns of leisure activity. It is not enough that two people just do fun things together; more importantly, both must continue to explore enjoyment, self affirmation, spiritual growth, and self-expression possibilities for new experiences separately and together.

Stage VII Middle Adulthood- Care: Generativity/ self-Absorption

Middle age from 35 to 65 years typically focuses on the strength of caring and concern for others, and developing the belief they can be loved and needed. Generativity is primarily the effort to guide the next generation, or help to shape the society and future generation (e.g. consultant or teacher). Conversely, a self-centered person who is unable or unwilling to help society move forward may develop a sense of self-absorption or stagnation due to a lack of productivity. Resolution of the competing foci results in an ability to nurture and care for others, while balancing care for self and care for others is the most advantageous outcome. Family leisure provides a great opportunity for families to spend time playing together and staying connected. There is special significance in

family relations, middle aged adults refine parenting skills, and model these skills to others in addition to facilitating emotional bonding and family cohesiveness, and sharing family values. A variety of leisure activities are appropriate as family leisure, such as camping/fishing, sports/games, holiday celebrations, vegetable gardening, cooking and eating the produce.

Stage VIII Old Age- Wisdom: Integrity/ Despair

Old age is the last stage of life, and integrity must be the dominant dispositional resolution of the earlier life crises based on a holistic view of one's entire life. Everyone has experienced significant events resulting in successes or failures, and gains or losses. Despair may be aggravated by reviewing the past, lost opportunities, mistakes, and poor choices, but the final life strength emerges from the wisdom generated by balancing realization of personal coherence and acceptance of some inconsistency. Wisdom empowers the older adult in the final stage to feel free from any constraints to enjoy the present life and prepares them to face death fearlessly or with limited regret. Therefore, leisure outcomes, particularly those that result from freely chosen activities, permit elders to voluntarily abandon assigned roles and obligatory activities, and encourage freedom to engage in things of greater interest. Older adults have the opportunity to continue existing psychological and social patterns of behavior by applying familiar knowledge, skills, and strategies to engage in the leisure activities.

Based on the above assumption that leisure activity contributes measurably to human development, the intervention of this study employed several leisure activities as the tools to trigger subjects' memory and to recall events most relevant to their lives.

Although the life review and reminisce are not unique approaches to enhance QOL of older adult's QOL in Taiwan, there is no record of using leisure activities in the modalities. However, the following section explores the value of the life review therapy for Taiwanese elders in order to inform program implementation and evaluation that is relevant to Taiwanese culture.

Effects of life review in Taiwanese elders

Reliability of life review therapy is being tested in Taiwan for use as an intervention for frail elders, particularly in long term care facilities and nursing homes. Few studies applying reminiscence or life review approaches for frail elders have been published in the journals of gerontology and nursing care in Taiwan. Using the search terms “reminiscence” and “Taiwan” via One Search (a search engine) of the University of Minnesota Library, generated 13 articles from the following online databases: Academic search premier (EBSCO), MNCAT, PsycINFO (Ovid), Business Source Premier (EBSCO), Education Full Text (Wilson), Applied Science Abstr (OCLC), AGRICOLA (Ovid), and MLA international Bibliography (PQ). In order to explore the implementation and effectiveness of reminiscence therapy in Taiwan, five articles were excluded from the review because two of them were on unrelated topics (i.e. Taiwan theatre history) and three articles were systematic literature reviews.

Eight articles were reviewed by the following topics: participants and setting, study design, outcome indicators and findings (see Table 1). Two major groups were recruited for these studies, one group, elders with dementia and the other, elders without dementia or no cognitive impairment. Two studies focused on patients with mild to moderate

dementia, but one study tested the intervention with a wider range including the severe stage. Most of the studies involved purposive sampling from the long term care facilities; however, one study compared the institutionalized and non-institutionalized seniors in north and south Taiwan. Two studies had a very small sample size (i.e. 10 subjects), one study was conducted with a bigger study group (i.e. 102), and five studies recruited a sample of subjects in the range of 24 to 75. However, most of the studies with larger samples recruited subjects from several institutions because too few qualified subjects were identified in any one institution. Only the study by Chiang, Lu, Chu, Chang, & Chou (2008) recruited 75 subjects from one VA hospital. Although not many studies used a randomized controlled trial (RCT) method, two groups (control and experimental) with pre- and posttest was the common method. However, most of the studies collected quantitative data to examine the effectiveness of reminiscence or life review intervention on daily functioning, cognition, depression, mood status, self-esteem and life satisfaction, but only the study of Chao, Chen, Liu, & Clark (2008) used qualitative means to understand the process of reminiscence and the nurse was both the investigator and the leader of reminiscence activity. Most of the studies adopted a subjective psychosocial measurement (e.g. geriatric depression scale) or an objective performance assessment (e.g. MMSE and ADL) to detect the changes from intervention. Wang (2007) tried to look at the difference in the electroencephalography (EEG) wave and did find the improvement which was not detected by the psychosocial measuring instruments. It is hard to articulate the effectiveness of the reminiscence opportunities or life review intervention through the review of these studies because not every researcher found

significant improvement. Nevertheless, no one found any harmful effects after the intervention and all of the studies recommended the use of reminiscence approach or life review intervention among programs for elders, especially for institutionalized residents. Obviously, more RCT studies are needed to establish the effectiveness.

Issues discussed in the reports of research conducted in Taiwan related to implementation are reviewed, regarding the type of intervention using reminiscence approaches, frequency of intervention, group size, reminiscence topic/theme, evocative materials and training procedures (see Table 2). Five studies implemented group reminiscence with group sizes that ranged from 8 to 12 subjects. One study involved one-on-one interviews assuming that Chinese elders tend to be more reluctant to interact in social groups (Wang, 2005). Most of the interventions were conducted during 8 or 16 consecutive sessions over eight weeks to four months. On average, the length of each reminiscence session was between one hour per session or less than 30 minutes, and held once a week. Only one study (Huang, Li, Yang, & Chen, 2009) was conducted twice a week. Structured reminiscence (i.e. Wang et al., 2009; Wang, 2007; Huang et al., 2009; Chao et al., 2006), unstructured reminiscence (i.e. Wang, 2004; Wang, 2005; Chao et al., 2008), or life review approach (Chiang et al., 2008) were used in these studies, and the themes/topics were focused on the life span. In unstructured reminiscence, the life stages may be addressed out of order. Unspecified discussions based on evocative materials are prevalent, but Huang et al. only used cooking lessons to stimulate the senses of the elders in order to evoke their memory by food. Images and sounds, such as past photos, albums, radio programs, newspapers, foods, or movie posters, were ordinarily used as evocative

materials and stimuli, and some of the studies asked the participants and their family members to collect their own old belongings to share with the group members or with the interviewer. Most of the programs incorporated a lot of materials related to leisure activities but none of the studies chose leisure as a featured modality.

Two people are typically needed to conduct the program in the group format (Chao, et al, 2006; Chao et al., 2008; Wang, 2007; Wang, Yen, & OuYang, 2009). The leader and co-leader of the program, or facilitator of reminiscence, were usually nurses or social workers who had experience in geriatric care. However, only three studies provided training for the leaders before the intervention, which raises the issues about the lack of expertise in the techniques and concerns about quality assurance.

Summary of Literature Review

The research literature confirms that leisure and life development are inextricable across all eight stages in various forms and function, including learning and applying knowledge and skills in all domains. The Life Review Program acts as a tutorial vehicle that guides elders to reminisce about their leisure experience and specific life events, and explore the meanings and influence on future behavior individuals attach to these memories. Careful examination and discussion of these memories may help elders reintegrate their life strengths and accomplishments that could be applied to the present. Several studies confirm that reminiscence and life review therapy can influence cognition, mood/emotion, psychological well-being, and social interaction for older adults in Taiwan. As noted earlier, these effects are also the important indicators of the quality of life for people with mild to moderate Alzheimer's disease. Thus this proposed study

attempted to examine whether a Taiwanese culture specific life review intervention, the LRP-TW, effectively improves subjects' quality of life (QOL) when QOL is defined as a multidimensional phenomenon, including perceived quality of life, psychological well-being, and behavioral competence.

Table 1. Summary of description of the reviewed studies

Studies	Participants	Setting	Study design		Outcome indicators	Findings
			Approach	Group		
Wang, J., Yen, M., & OuYang, W., 2009	77 seniors (original 86, 9 dropt) with mild to moderate dementia	Selected from four official registered care facilities in south Taiwan	Randomized controlled trial (RCT) with pre- & post- test	Each facility has control (without RT)& experimental (with RT) group	1. Activities of daily living (ADL) 2. Behavior competence: (1) Physical disability (2) Apathy (3) Communication difficulties (4) Social disturbance	1. No significant difference within group effects on overall behavior competence or ADL, but has a significant difference in the social disturbance 2. No significant changes in overall behavior competence and ADL by stage of dementia
Wang, J., 2007	102 seniors with mild to severe dementia	Selected from five elderly care facilities in south Taiwan	RCT with pre- & post- test	Each facility has control (without RT)& experimental (with RT) group	1. Cognition (MMSE) 2. Mood/Affection (GDS-SF, CSDD)	Significant improving effects of cognition (MMSE) and mood/affection (CSDD) between groups, but insignificant difference in mood/affection measured by GSD-SF
Huang, S., Li, C., Yang, C. & Chen, G., 2009	10 seniors with mild to moderate dementia (original 12, 2 dropt)	Selected from 1 elderly care facilities in south Taiwan	Case study with pre- & post- test	Only one RT intervention group	1. Feeling of participation (Personal interaction scale & Feeling of participation scale) 2. Cognition (MMSE) 3. Depression (GDS-30) 4. Fast- and Slow- wave in EEG	1. Significant improvement in fast waves of EEG 2. Insignificant improvement in MMSE and depression 3. Significant improvement in personal interaction (i.e. feeling of happiness, positive communication, positive interaction, participation, by order, and activity preference), and participation feeling (i.e. stress relief, adaptation, impression)
Chao, et al., 2006	24 seniors without dementia	Selected 2 wards from 1 nursing home in north Taiwan	Quasi-experimental design with pre- & post- test	One ward is assigned in control group, the other ward is in experimental group	1. Depression (GDS-15) 2. Self-esteem 3. Life satisfaction	1. Significant improvement in self-esteem in treatment group, but control group also showed insignificant improvement. 2. Both groups have insignificant result in depression and life satisfaction.

Table 1(continued). Summary of description of the reviewed studies

Studies	Participants	Setting	Study design		Outcome indicators	Findings
			Approach	Group		
Wang, J., 2004	48 seniors without dementia (Original 52, 4 dropped)	Recruited from a variety of community care facilities and home care agencies in south Taiwan	Quasi-experimental design with pre- & post-test	2 groups both had RT intervention (one group is from institutions, the other one is from home care)	1. Self-esteem 2. Self-health perception 3. Depression symptom 4. Mood status	1. No significant difference between institutionalized and non-institutionalized in self-esteem, self-health perception, and depressive symptoms, but significant difference in mood status 2. Within time changes, no significant differences on non-institutionalized group, but significant differences on self-health perception, depressive symptoms, and mood status for institutionalized group (exclude self-esteem)
Wang, J., 2005	48 seniors without dementia (Original 55, 7 dropped)	Selected from five long-term care facilities in south Taiwan	Quasi-experimental design with pre- & post-test	Experimental (with IV) group & control (without IV) group	1. Depressive symptom 2. Mood status	1. Significant improvement of experimental group on depressive symptom and mood status, but not of control group. 2. High percentages of depression in the pretest, and decrease after the intervention.
Chao, S., Chen, C., Liu, H., & Clark, M.J., 2008	10 seniors without dementia	Selected from one nursing home in north Taiwan	Qualitative study design with participant observation	Only one RT intervention group	1. Resident's personal characteristics 2. Time, setting, and triggers or catalysts used to initiate reminiscence 3. Content of the reminiscence 4. Resident's verbal and non-verbal reaction	1. The process of reminiscence exhibited four stages: entrée, immersion, withdrawal, and closure. 2. Triggers in initiation include auditory and visual. 3. Inducer and active listener plays important role in the entrée stage.
Chiang, K., Lu, R., Chu, H., Chang, Y., & Chou, K., 2008	75 seniors without dementia	Selected from one Veterans' Home in north Taiwan	RCT with pre-, post- & follow up test (one month after)	Experimental (with IV) group & control (without IV) group	1. Self esteem 2. Life satisfaction	1. In the posttest, experimental group has significant improvement in self-esteem & life satisfaction 2. In the follow up test, experimental group has significant improvement in self-esteem and life satisfaction compared to pre-intervention levels

Table 2. Description of intervention of the reviewed studies

Studies	Modality	Frequency			Group size (# in each group)*	Topics/ Themes	Evocative materials	Executor	
		Length of intervention	Total session	Minutes per session				# of leader	Pre- training
Wang, J., Yen, M., & OuYang, W., 2009	Group	8 consecutive weeks	8 sessions (once a week)	1 hour	8-12	Structure reminiscence 1.First meeting 2.Childhood experiences 3.Old time flavor of food 4.Old time music 5.Festival 6.My family 7.When I was young 8.My award	Photographs, foods, music, household and other familiar items from past	2	Yes (32 hours)
Wang, J., 2007	Group	8 consecutive weeks	8 sessions (once a week)	1 hour	8-10	Structured reminiscence 1.First meeting 2.Childhood experiences 3.Old flavor of food 4.Old style music 5.Festivals 6.My family 7.Younger age 8.My achievements	Photographs, household and other familiar items from the past, old time music, old time flavor of food	2	Yes (32 hours)
Huang, S., Li, C., Yang, C. & Chen, G., 2009	Group	2 months	8 sessions (twice a week)	1 hour	10	Structured reminiscence Childhood cooking lessons (i.e. stir-fried powder, wheat soup, fried oyster, fried noodles, dumplings, deep-fried oysters, wanton soup, and green-onion pancake)	Food making (procedure demonstration, explanation, eating & sharing)	N/A	N/A
Chao, et al., 2006	Group	9 weeks	9 sessions (once a week)	1 hour	12	Structured reminiscence 1.That's how I grew up 2.The home I created	Photos, magazine articles, albums, news clippings, tape recorder, incense holders, posters, special snacks for relevant holiday	2	N/A

Table 2(Continued). Description of intervention of the reviewed studies

Studies	Modality	Frequency			Group size (# in each group)*	Topics/ Themes	Evocative materials	Executor	
		Length of intervention	Total session	Minutes per session				# of leader	Pre- training
Wang, J., 2004	Individual (1:1)	4 months	16 sessions (once a week)	45-60 minutes	1	Unstructured reminiscence. Focus on past experiences or feelings, without specific topics but some events (i.e. childhood experiences, marriage, family life, the hardships of war, and previous jobs) did facilitate	Old photos, recordings of old songs and radio programs, relics of the past	1	N/A
Wang, J., 2005	Individual (1:1)	4 months	16 sessions (once a week)	35-45 minutes	1	Unstructured reminiscence. Focus on past events, e.g. childhood experiences, marriage, family life, war, and jobs	Old photos, recordings of old songs and radio programs, and other relic of the past	1	Yes (2 months)
Chao, S., Chen, C., Liu, H., & Clark, M.J., 2008	Individual	8 weeks	8 sessions (once a week)	1 hour	1	Unstructured reminiscence. Any past event related to each individual	Old photos, magazine articles, albums, new clippings	2**	N/A
Chiang, K., Lu, R., Chu, H., Chang, Y., & Chou, K., 2008	group	8 weeks	8 sessions (once a week)	1-1.5 hour	N/A (unspecified in article)	Life review approach 1. Childhood memories 2. Adolescence 3. The subject's family 4. The subject's job 5. The subject's friends 6. The greatest thing the subject has accomplished in life 7. The summary of life review and the integration of life events	N/A	1	N/A

*Number of the participants in the group, not include the leader or researcher

**1 is researcher, 1 is clinical faculty, sometimes also allowed the family member to join the reminiscence

CHAPTER III

Method

Quality of life (QOL) is the goal for services to elders particularly those with AD for whom successful outcomes are likely to mean small improvements. It is difficult to compare efficacy for services or service providers, to know whether or not QOL has been achieved because there is no universal definition of QOL or consensus on what components constitute the phenomenon. However, when QOL is defined as a multidimensional phenomenon it is possible to accurately and empirically measure changes where the elements interrelate. The purpose of this study is to test the impact of the LRP, a recreational therapy intervention, on multiple dimensions of the QOL of long term care residents in Taiwan diagnosed with mild to moderate Alzheimer's Disease when QOL is defined as a multi-dimensional compound construct.

This chapter describes the methodology, including the sampling procedures and data analyses, used in the present study. In order to maximize the strength of the program revised for the Taiwanese/Chinese culture, a small pilot study was conducted in Kaohsiung City, South Taiwan during January, 2009, three months before the formal study was implemented. The first section presents the procedures of the pilot study, the results, and recommendations to improve the rigor of the formal study. The second section describes the methodology of the formal study, including research design, participants, setting, intervention, procedure, instruments, and data analysis.

Section I

Implementation and Result of the Pilot Study

The LRP has been adapted to different cultures (e.g. African American and Korean) to verify that the conceptualization of life review in a protocol is reliable and universal. Specifics in the LRP protocol have to be revised to fit the culture of the target population. Therefore, one purpose of this pilot study was to verify the feasibility of the procedures and confirm that the Taiwan/Chinese culture relevant Life Review Program can motivate elders with dementia to recall their past life experiences, reexamine them and, in so doing, be an effective intervention to improve their perception of QOL. The second purpose of this pilot study is to evaluate the utility of the instrument (i.e. SF36) because no prior study had adopted this instrument to test the QOL of Taiwanese elders with dementia or Alzheimer's disease.

Method of pilot study

This pilot study was conducted to tease out potential difficulties that could negatively affect the formal study. The pilot was a quasi-experimental, one-group pretest-posttest study designed to compare the perception of QOL of elders with mild to moderate dementia, collected under two conditions: pre-intervention and post-intervention. The study used purposive sampling and recruited nine subjects from Ever Green adult day care center in Kaohsiung city, Taiwan (R.O.C.). Inclusion criteria included: (a) 65 years of age or more; (b) having mild to moderate dementia according to the Mini-Mental State Examination score of 10-23; (c) absence of any additional psychiatric diagnosis. The Institutional Review Board of the University of Minnesota,

MN, granted official approval for this study. Each participant signed an informed consent form and a proxy signature was obtained from a family member.

A quality of life measurement (SF-36) questionnaire was used to collect data pre and post intervention. Data were examined for changes in subjects' perceptions. The data were collected during individual interviews by the researcher. SF36 was designed as a multipurpose survey of general health status for use in clinic practice, research, and in health policy evaluations (Ware & Sherbourne, 1992). SF-36 items are adapted from health instruments and represent a combination of eight concepts of health, including (a) limitations in physical activities because of health problems; (b) limitations in social activities because of physical or emotional problems; (c) limitations in usual role activities because of physical health problems; (d) bodily pain; (e) general mental health (psychological distress and well-being); (f) limitations in usual role activities because of emotional problems; (g) vitality (energy and fatigue); and (h) general health perceptions.

Pilot study sample

The average age of this group was 79.56 (ranged from 71 to 87), including seven females and two males (see table 3). The group had various levels of education, two had no schooling, five had primary schooling, and only one had been to high school. The cognition impairment level according to MMSE score (10 ~ 23) was mild to moderate, and the major problem was memory loss. The average baseline of QOL (SF-36 score) was 63; however, one subject withdrew from the program after two sessions, and one subject completed the intervention but was absent for the post test due to a family trip. Therefore, the final analysis only included seven subjects. The dropout rate was 22.2%.

Due to the small sample size, the Wilcoxon signed ranks test was used to detect the changes between the pre- and posttest on QOL.

Table 3. Characteristics of the pilot study subjects

<i>Characteristics /Subjects</i>	<i>Gender</i>	<i>Age</i>	<i>Education levels</i>	<i>Marriage states</i>	<i>Pre SF scores</i>	<i>Post SF scores</i>
1	Female	84	Illiterate	Widowed	71	81
2	Female	70	Primary school	Widowed	76	94
3	Male	79	Primary school	Married	51	77
4	Male	87	Primary school	Married	67	27
5	Female	78	Illiterate	Widowed	82	83
6	Female	83	High school	Married	47	62
7	Female	86	Primary school	Widowed	64	92
8	Female	78	Primary school	Widowed	59	-
9	Female	71	Illiterate	Widowed	50	-

Pilot study intervention

The primary researcher is a recreational therapist who conducted the revised Life Review Program (LRP-TW). Two or three staff from the day care center assisted in each session. LRP-TW was adapted from the original by compressing it into a short format of 10 successive sessions over two weeks, excluding Saturday and Sunday. There was one session each day that lasted 60-minutes. To comply with Erikson's life stages (Erikson, Erikson, & Kivnick, 1986), each session had a specific life theme in sequence, specifically trust/mistrust in infancy, autonomy/shame in toddlerhood age,

initiative/guilty in play age, industry/inferiority in school age, identity/confusion in adolescence age, intimacy/isolation in young adulthood, generativity/self-absorption in middle adulthood, and integrity/despair in old age, plus the first session as an introduction and the last session as a celebration. The elders participated in carefully selected leisure activities representationally commensurate with the life stages or the life themes to trigger their past memories (see table 4). Appropriate questions were prompted by the leader to facilitate the group to discuss, such as “Who is the person you trust most?”, “What parts of your life is it most important that you stay in charge of?”, or “What have you done, in your life, that makes you proudest?”

Table 4. Pilot study program theme and activity

<i>Day</i>	<i>Erikson's Life stage</i>	<i>Theme</i>	<i>Activity</i>
1	(Introduction)	Path of life	Drawing
2	I- Infancy	Trust & Mistrust	Sing along- lullaby song
3	II- Toddlerhood Age	Autonomy & Shame/Doubt	Draw lots (a vocational inclination test for an infant)
4	III- Play Age	Initiative & Guilt	Old time toys (ex. Bamboo dragonfly, catapult, sandbag, bamboo pistol, etc.)
5	IV- School Age	Industry & inferiority	Tradition play (i.e. traditional puppet show, Taiwanese opera, Chinese opera)
6	V- Adolescence Age	Identity & Confusion	Music- old day records
7	VI-Young Adulthood	Intimacy & Isolation	Movie- old day movie
8	VII-Middle Adulthood	Generativity & self-absorption	Cooking- dumpling making
9	VIII- Old Age	Integrity vs. Despair	Tea art
10	(Celebration)	Renew of life	Horticulture- plant propagation

Findings of pilot study

Although results showed no statistically significant changes after the intervention (see Table 5, several subscales revealed higher scores on the posttest verses the pretest, such as role-physical, bodily pain, vitality, social functioning, role-emotional, and mental health. To aggregate the scales into two summary scores, both perceptions of physical and mental health in post-intervention are higher than pre-intervention (see Table 5). Except for the scale of general health, the post-intervention scores increased or at least maintained the same in all of the subscales.

Table 5. Pre-post tests of quality of life for the pilot study

<i>(N=7)</i>	<i>Pretest</i>			<i>Posttest</i>			<i>Wilcoxon signed ranks test</i>	
	<i>Mean</i>	<i>SD</i>	<i>Median</i>	<i>Mean</i>	<i>SD</i>	<i>Median</i>	<i>Z</i>	<i>P-value</i>
Physical health	59	12.22	55	67.86	24.71	73	-1.183	0.237
Physical function	54.29	22.99	55	51.43	27.65	55	-0.319	0.750
Role-physical	25	43.3	0	67.86	47.25	100	-1.841	0.066
Body pain	76.71	18.34	72	80.71	27.04	100	-0.405	0.686
General health	68	0.07	72	66.29	19.20	60	-0.085	0.933
Mental health	73.85	15.31	82	78.28	20.19	84	-0.734	0.463
Vitality	71.43	17.96	70	73.57	23.4	80	-0.318	0.750
Social functioning	80.57	18.88	88	86	22	88	-0.677	0.498
Role-emotional	71.29	35.81	100	85.71	37.80	100	-0.378	0.705
Meantal health	77.14	12.59	80	78.86	15.09	80	-0.365	0.715

Discussion/implication for the formal study

More than half of the subjects (85.7%) demonstrated higher levels of quality of life on the posttest than on the pretest, although the results showed statistically non-significant improvement. Regarding health related quality of life, the results may imply that the response of subjects displayed increased physical and mental health, such as higher physical functionality and vitality, more active role caused from physical and

emotional aspects, lower bodily pain, and better social functioning, but excluded the reported general health. In particular, one of the subscales, active role due to physical, showed great enhancement ($M_1=0$, $M_2=100$, $p=0.066$) from the subjects' reports despite the fact their general health was getting worse. It probably revealed that the LRP-TW may have advantages in motivating the participants to perform daily activities regardless of their physical limitations. It seems compatible with the definition of recreational therapy to use purposeful leisure activity "to restore, remediate or rehabilitate the patient's functional ability and level of independence and/or reduce or eliminate the effects of illness and disability (Burlingame & Skalko, 1997, p.218)". In addition, all of the participants expressed a desire to attend the same program again in the future. It has to be stressed that low motivation is a common psychiatric symptom in people with dementia (Sultzer, Levin, Mahler, High, & Cummings, 1993). However, the LRP-TW includes adapted leisure activities reflective of those enjoyed at previous ages and, when familiar to the subjects, may effectively inspire interest and a willingness to participate.

While several past studies showed that psychological well-being is a major advantage of reminiscence therapy or life review therapy for elders (Haight, 1988; Haight & Dias, 1992; Hirsch & Mouratoglou, 1999; Wang, 2004; Wang, 2005; Chao, et al, 2006), such as the improvement of life satisfaction, decrease of depression, or promotion of self-perception, this study had difficulty in finding a statistically significant improvement in the subjects' general mental health due to small sample size. However, more than half of the subjects (85.7%) reported an increased or at least the same score in vitality, social functioning, vibrant emotional expression, and mental health. The result

suggested that LRP-TW could enhance the subjects' energy or reduce tiredness, help retain daily activity and social interaction, and increase positive affect (i.e. peaceful, calm, or happiness). Wang (2007) also verified that group reminiscence therapy significantly decreases depression levels in Taiwan's dementia elderly. Through constant encouragement to communicate and share memories within the group, the participants could express themselves and be patiently listened to in a warm, empathic environment created by the recreational therapist. This kind of environment may help elders feel free to engage and have an outlet to express their fears, strong affect and discontent (Wang, 2005).

A number of limitations in this pilot study should be noted. LRP-TW was too short to reach the therapeutic goals. Ten one-hour sessions were held daily over two weeks. It was difficult to gain the group's trust in such a short time, especially because the recreational therapist and the program were unfamiliar to the participants. The recreational therapist should spend time with the members of the group informally and as a leader of a program. It became evident that for this population, life review as psychotherapy should be continuous and the LRP-TW frequently repeated. Tabourne (1991) proposed that LRP should be held twice a week and at least for 10 weeks. This is consistent with other successful interventions of its type and intent. The pilot subject group might have benefitted from more time to become familiar and comfortable with each other and to form a more cohesive group. For instance, a few participants were passive observers and less engaged in the activities during the first two to three sessions, but participants progressively increased responding to questions posted by the

recreational therapist. They shared their insights and demonstrated caring for each other by the last week's sessions. Furthermore, the intervention may enjoy higher status with the subjects if the recreational therapist is a regular employee and well-known as a therapist in the institution.

Session dynamics should also be considered. Most of the participants are enthusiastically engaged in the active leisure choices, such as playing with toys or making objects, these were more engaging than the discussion-based events. Additionally, it would be helpful to use an activity-based approach and talk about specific topics early in the intervention process to build group cohesion. The recreational therapist could then gradually increase the discussion of personal reflections and evaluations regarding each participant's past events.

Of considerable importance is the effect of the small sample size and single outcome measure that may have also influenced the magnitude of the dependent variable outcome. It is difficult to obtain subjects that meet the criteria from just one facility, and particularly if it is a day care program. It is necessary to recruit subjects from more than one institution. Additionally, the small sample size was compounded by the fact that this study used a closed-group structure and additional participants were not recruited when two subjects dropped out before the end of the study.

Another interesting and informative event in this pilot study concerned the dramatic drop in the SF-36 score of one elder who was experiencing pain from diabetes while performing the posttest. His decreased score was unexpected and obviously related to the flair up of symptoms of the disease. Most elders have multiple conditions affecting

functioning, and their overall health status might greatly impact their appraisal of quality of life. Nevertheless, it is difficult to find subjects without other diagnoses, only dementia. In order to measure QOL as a multidimensional evaluation of individual person-environmental systems, relative to current, past, and anticipated time, and on both intrapersonal and social-normative criteria, of the person-environment system of an individual in time past, current, and anticipated (Lawton, 1991), it might be necessary to apply multiple dimensions of measurements. The SF-36 may not be able to reflect all the facets of a person's quality of life. Objective measurements with social-normative criteria are recommended for the formal study. The relationship between objective measurement and subjective perception may provide a better view regarding the effectiveness of the treatment.

In addition to the multiple dimensions of measurements, to recruit more subjects from different institutions is necessary to reach the effective size for the formal study. To have a control group compared with the treatment group also increases the likelihood of effects for the formal study. In order to improve the quality of intervention, to get familiar with the subjects is important as well as to extend the length of the program implementation. The establishment of rapport takes time to build up, and to interact with the subjects before the program starts is recommended. Thus the researcher may spend more time socializing with the subjects via individual interview of background information and participation in programs offered by the institutions.

Section II

Study Design and Method of the Formal Research

Research design

An experimental, repeated-measure design was employed to investigate the impact of the revised Life Review Program (LRP-TW) on quality of life in the elderly with AD (see Figure 3). To address the research problem related to defining QOL as a single multi-dimensional entity, specifically, that it is difficult to compare the efficacy of services or service providers, or to capture changes in QOL due to intervention (i.e. LRP-TW), two research questions are posed:

1. What is the relationship between the objective and subjective indicators that compose a multi-dimensional complex of QOL measurements?
2. Is LRP-TW an effective RT intervention to improve QOL measured by multi-dimensional modules?

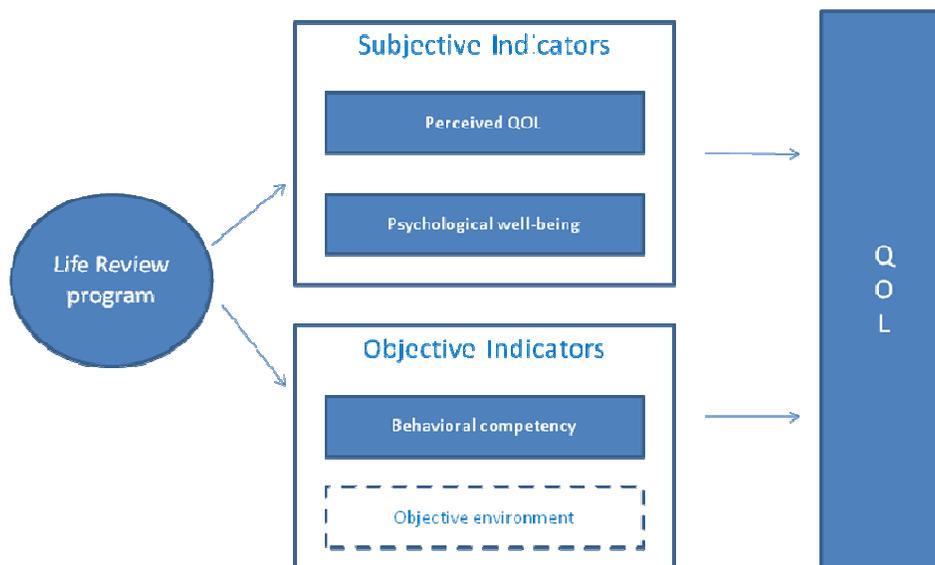


Figure 3. Theoretical framework

To answer the research questions, two hypotheses are tested:

H1: There are moderate to strong correlations between subjective indicators and objective indicator of QOL

H2: Participation in LRP-TW results in positive changes in the QOL scores measured by a multi-dimensional complex measurement

Repeated measures of data were taken from a period before and after the treatment that was used to determine the changes in QOL across time. Data regarding QOL were collected by several instruments, such as SF-36, MMSE, and GDS, which composed a multi-dimensional complex of QOL measurement for people with AD. In this study, the QOL of subjects was measured pre-test/base-line (Time I, TI), within a week before the intervention and post-test (Time II, TII), within a week after the intervention (see Figure 4).

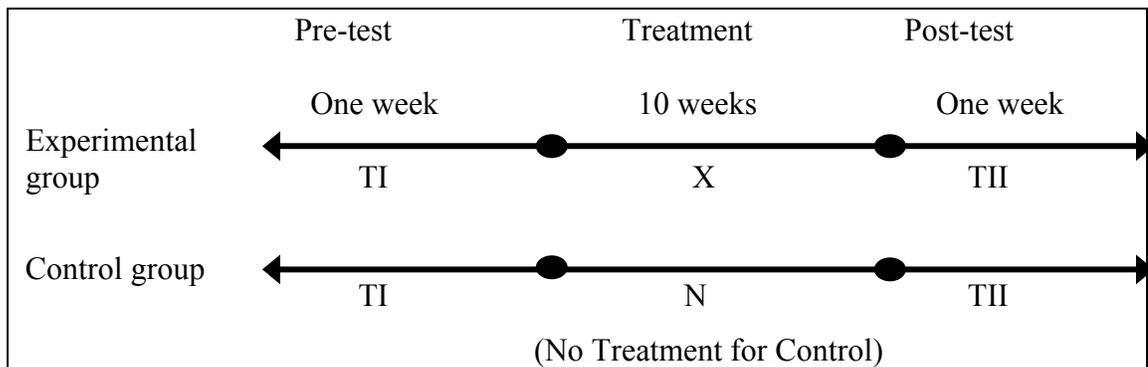


Figure 4. Experiment design

Variability in the treatment and control group was statistically determined at baseline to identify any differences or variances that may account for changes in outcome variables at the end of the intervention. Difference in scores on the dependent variables (indicators of quality of life) between base-line (T I) and repeated measurements taken at

subsequent periods (TII) determined the treatment effect of the LRP-TW intervention. In addition to the quantitative data, the qualitative data, such as field notes and performance check lists for the treatment group, were collected to supplement the information about program implementation and to assure the quality of the intervention.

This study followed the guidelines for a two-group design (one treatment and one control), and subjects were randomly assigned into treatment and control groups to eliminate the possibility of systematic differences among participants and the environment of the experiment (Creswell, 2003) (the procedure of random assignment referred to the below sub-section of “experimental group procedures”). The treatment group received the 12-week LRP-TW intervention conducted by the researcher who is eligible for certification as a Certified Therapeutic Recreation Specialist (CTRS). The control group had no LRP-TW treatment but they regularly participated in programs offered by their facility.

Sample size

Based on the estimated parameters from the pilot study, the effect size for the subscale of SF36 instrument (i.e. physical health) calculated to be Cohen’s $d=0.534$, to detect the changes for one group from before to after the intervention (Thalheimer, & Cook, 2002).

$$d = \frac{\bar{X}_{posttest} - \bar{X}_{pretest}}{SD_{pooled}} = \frac{67.86 - 59}{16.588} = 0.534$$

$$SD_{pooled} = \sqrt{\frac{(n_{pretest} - 1)S_{pretest}^2 + (n_{posttest} - 1)S_{posttest}^2}{n_{pretest} + n_{posttest}}} = \sqrt{\frac{(7 - 1)12.22^2 + (7 - 1)24.71^2}{7 + 7}} = 16.588$$

One group sample size (N=55) for the formal study was estimated under a moderate effect size ($\delta = d\sqrt{\frac{n}{2}}$, $\delta=2.8$ at level of $\alpha=0.05$, power=0.8) (Howell, 2002, p. 233); thus a total N=110 subjects was theoretically needed for the two group design. The Institutional Review Board of the University of Minnesota, MN, granted official approval for this study to recruit a total sample of 80 subjects anticipating attrition rates and unforeseeable difficulties in actual recruitment. The total sample size at the beginning of data collection was 53. By the final analysis, the sample size was 34 (power is 0.327 at the level of $\alpha =0.05$).

Settings

Four senior long-term care facilities in South Taiwan were recruited to be host-facilities for the study. The four facilities provide residential healthcare services (i.e. ADL, nursing care, physical therapy or occupational therapy, and recreational activities) to elders with various chronic illnesses, such as stroke, dementia and Alzheimer's disease. None of these facilities provide recreational therapy or therapeutic recreation, but all of them do provide recreational activities regularly by a social worker, group volunteers, or nursing student interns. Two facilities (A and D) are located in an urban area (Kaohsiung city), and two facilities (B and C) are located in a rural area (Kaohsiung county).

Facility A is a hospital-based nursing home sharing the same building with an orthopedic hospital. It has 102 residents currently distributed over three floors (35 residents in 6th floor, 37 residents in 7th floor, and 30 residents in 8th floor). Each floor has its own dining area, activity room and social room, and the nursing station sets in the

entrance to each floor providing 24-hour service. **Facility B** is a residential care facility that currently has 70 residents distributed evenly on 2 floors. Although each floor has a separate dining area and nursing station, all the recreational programs are held in a big social room on the first floor. The nursing service is 24-hour. In particular, this facility raises two untrained dogs as pets providing an alternative pet therapy. **Facility C** is a hospital-based nursing home sharing the same building with a mental hospital. It has 90 residents currently distributed into two main areas of the same floor. Only one nursing station in the major area provides 24-hour monitoring. Although each area has its own social room and dining area, most of the recreational activities are held in the bigger area which has a larger space. **Facility D** is a hospital-based nursing home sharing the same building with a comprehensive hospital. It has 153 residents currently distributed over three floors (63 residents in 3rd floor, 71 residents in 4th floor, and 19 residents in 5th floor). Each floor has its own dining area, activity room and social room, and the nursing station is at the entrance of each floor providing 24-hour service.

Recruitment procedures

Subject recruitment occurred in two steps (see Figure 5). The first step was to recruit the host facility where potential subjects reside (i.e. elders with dementia or Alzheimer's disease). The sample of the facilities was obtained by non-random, purposive sampling from 11 accredited long term care facilities in South Taiwan which were recommended by the website of Kaohsiung Dementia Association, Kaohsiung City Government and Kaohsiung County Government. After describing the purpose and the needs of the study by phone, four facilities expressed their interest in cooperating, but the

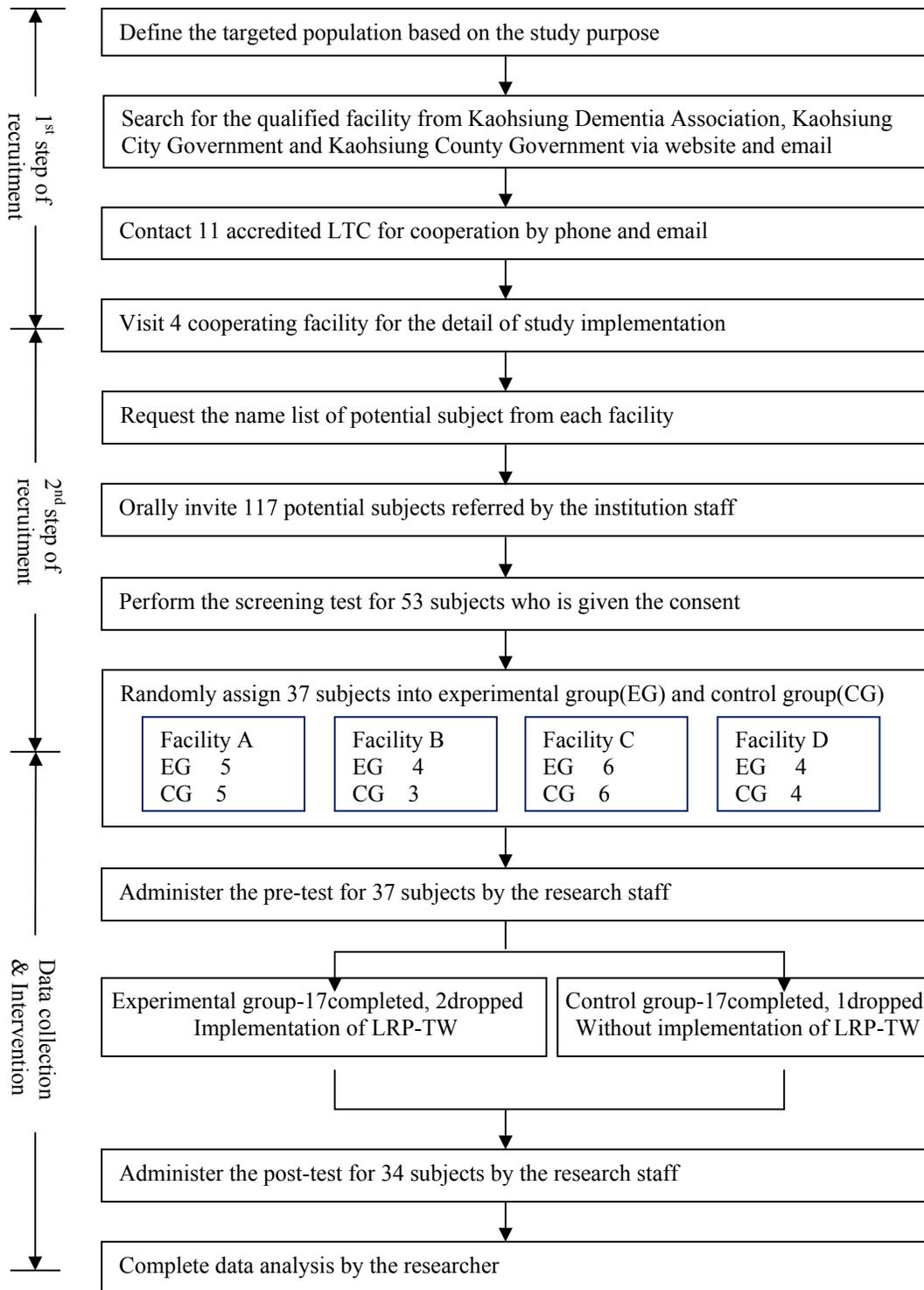


Figure 5. Study Procedure

other facilities refused due to lack of space or manpower. Agreements for conducting research were also obtained via email. Then the researcher visited the four facilities and interviewed the director of nursing in order to set up the schedule and procedure for the next step of recruitment.

The second step was to recruit study subjects. According to the study purpose, the subjects should be senior residents of these four host facilities who have been diagnosed with dementia of Alzheimer's type. However, there is a practical issue that not every resident with dementia symptoms has been diagnosed by a physician if they already were admitted for another diagnosis. Therefore, an initial screening process was necessary to recruit the subjects. It also provided the researcher an opportunity to establish rapport with the subjects through the interview process. Four name lists of 117 potential subjects were given by the host facilities, defined by the following three criteria: (a) 65 years of age or more; (b) having mild to moderate dementia according to the Mini-Mental State Examination score of 10-23; (c) absence of severe disruptive behavior, i.e. delusional or aggressive behavior. The researcher approached each potential subject referred by the staff of the institution, and described the purpose and the obligations of participating in the study. With their understanding, 53 consent forms had been signed before the screening test and were collected by the researcher. The screening test contained two parts, one is a clock drawing test (CDT; Lin, et al., 2003), and the other part is the interview. Interview questions are related to their demographic information and personal background (i.e. age, education level, religion, cultural background, residency, social relationship, vocational history, leisure interest, etc.) and their relationship with family.

The CDT can be used as a quick test for AD screening. In the test, potential subjects are told "to draw a clock. Put in all the numerals and show the time 10:10" on a blank piece of paper with a predrawn circle 10 cm in diameter. Based on Lin, et al. (2003) 16 items scoring systems, a cutoff score 10/11 may differentiate early to mild AD from non-demented individuals. The initial screening process was completed over 10 days. Thirty seven qualified subjects (i.e. 10 in Facility A, 7 in Facility B, 12 in Facility C, and 8 in Facility D) were selected under the following inclusion criteria: (a) the CDT score is equal or under 10; (b) is able to provide a meaningful answer to the interview questions; and (c) will reside in the institution until the end of study (approximately 6 months).

Experimental group procedures

Each facility was viewed as one independent unit for this study, including the pre-post measurement and group intervention. That is to say, each facility had its own treatment group and control group. The researcher randomly assigned the subjects to one of the two groups of equal size, except Facility B (4 in experimental group, and 3 in control group). After the groups were assigned, another research staff, Occupational Therapist Registered (OTR), who was blind to the group assignment, administered the pretest. The pretest was hosted in each facility such that each subject was interviewed by the research staff separately. Background information from the interview and the pretest score were used to determine if random assignment had produced two equivalent groups.

Subjects in the treatment group participated in the 10-week Life Review Program that was implemented by the primary researcher. Subjects in the control group were not receiving the LRP-TW but were encouraged to attend the other programs provided by

their facility at the same time. One subject was dropped from the treatment group in the beginning of the program due to delusional behavior. After ten weeks of intervention, the post-test was given in the same way as the pretest. However, two subjects (one from the treatment group, and one from the control group) were unable to complete the post-test due to hospitalization. Thirty-four subjects completed the study.

Intervention implementation

The primary researcher implemented the intervention (i.e. revised Life Review Program [LRP-TW]) which is revised from Tabourne's (1995) LRP. The design of the LRP was grounded in Erikson's theory of psychological stages of development. It informs the format for themes along with the session progression. This framework also guided the selection of relevant activities based on how well each activity would evoke memories related to the target themes. Thus, the LRP-TW followed the Developmental theory and Continuity theoretical framework with a different selection of leisure activities reflecting Taiwanese culture. From implementing the pilot study, the researcher knew that activity-based sessions elicited responses from participants better than the discussion-based sessions and reminiscence objects that can be seen, smelled, tasted or touched evoked their memories. One session per theme/life stage was too short to cover all the topics and facilitate questions. Several adjustments to the type of activity, facilitating approach, evocative materials, and session frequency were made in the protocol of the formal study. The LRP-TW aimed to improve individual abilities to perform basic tasks related to orientation functions, emotional functions, and thought functions through reminiscence procedures for ego-integrity. Three program objectives

Table 6. Revised Life Review Program for Taiwanese older adults

<i>Week</i>	<i>Life stage</i>	<i>Theme/topic</i>	<i>Session goal</i>	<i>Activity</i>
1	Overview	Pathway of leisure in life	To introduce the life review program and identify the meaning of leisure	Life review table game
2	Infancy	Trust & Mistrust	To identify individual hope & faith from infant stage till now	Sing along- lullaby song
3	Toddler	Autonomy & Shame/Doubt	To evaluate individual willfulness, independence, & control from toddlerhood till now	Draw lots (a vocational inclination test for an infant)
4	Play Age	Initiative & Guilt	To redeem purposefulness, pleasure, & imagination from childhood and to reflect on the present /future	Old time toys (ex. Bamboo dragonfly, catapult, sandbag, bamboo pistol, etc.)
5	School Age	Industry & inferiority	To re-establish self competence and to resume the attitude of hard work from the past	Tradition play (i.e. traditional puppet show, Taiwanese opera, Chinese opera)
6	Adolescence	Identity & Confusion	To identify personal values and strengthen self awareness	Music- old day songs trivia
7	Young Adult	Intimacy & Isolation	To maximize individual opportunity for involvement with love & friendship	Movie- old day movie appreciation
8	Middle Adult	Generativity & self-absorption	To resume the ability to care for others or the next generation and to create a sense of productivity	Cooking- dumpling making & brown sugar rice cake
9	Old Age	Integrity vs. Despair	To compensate for the inevitable losses with wisdom comprising a sense of perspective, a feeling for life's ironies, and a vital involvement in the present and future	Horticulture- plant propagation
10	Celebration	Renewal of life	To maximize individual strengths by reviewing the resource of the human spirit	Tea art and life review table game

for the participants were to demonstrate: (a) the ability related to orientation, including orientation to time, place, person, other specified or unspecified descriptions of events; (b) the ability to respond to expressions of emotion by peers, and to show appropriate affect that is congruent with the situation and appropriate emotional control when necessary (e.g. when others are inappropriate or when an emotionally charged experience is recalled); (c) the ability to use moderate thought functions by performing rational pace, form, and content when they are talking. The LRP-TW is a 10-week therapeutic recreation program, and it contains 20 sessions (two sessions a week). Each session is

limited to 45 to 60 minutes with a fixed format including (a) introduction to the session, (b) a review of the previous session, (c) implementation of the current topic and activity, and (d) closure with a review of the current session and introduction to the next session. Table 6 summarized the program content, including the life stage, session goal, counseling guideline, and activity. The detail of the protocol is attached in Appendix I.

Variables

In this study, the Life Review Program intervention is the independent variable, and subjective indicators of QOL (i.e. perceived quality of life and psychological well-being) and objective indicators of QOL (Behavioral competency) are dependent variables. In addition to the intervention, one aspect of the Objective Environment (i.e. the settings) may have an interactive role with other variables; therefore, the settings (four different facilities) should be viewed as a confounding variable to be controlled. However, the settings cannot be controlled by the study, so an alternative approach that could mitigate potential influence is to select facilities with similar environmental criteria (e.g. quality of service, size of facility, etc); otherwise, the settings should be implemented as an independent variable to examine if any changes of the dependent variable are contributed from it.

Quantitative instruments

Data collection across all four facilities spanned 12 weeks. The pretest was held from April 13th to April 19th, intervention conducted from April 20th to June 27th, and the posttest was from June 28th to July 4th. The primary data for this study is quantitative data that was measured by the indicator of subjective QOL and qualitative QOL, including

perceived quality of life, psychological well-being, and behavioral competency. A research staff, blind to group assignment, administered the pretest. Due to the fact that some of the subjects are illiterate, the research staff went through all the questions orally with each subject individually. Based on the treatment goals and the characteristics of AD, the measurement indicators of QOL were selected to reveal the changes before and after the life review intervention (see Figure 6): (a) perceived quality of life was measured by the Medical Outcomes Study 36 Item Short Form Health Survey (MOS SF-36) to indicate a comprehensive perception of physical and mental health; (b) psychological well-being was measured by the Geriatric Depression Scale Short Form (CTGDS-SF) to indicate negative emotional changes; and (c) behavioral competency was measured by the Mini-mental state examination (MMSE) to indicate individual cognitive variation. Descriptions of each instrument are provided in the following discussion of their administration. The research staff tried to limit the time of administration to 30 to 40 minutes per subject due to their short attention span. Most of subjects could complete the tests shortly, and only few subjects needed 50 to 60 minutes to finish.

	Person	Environment
Subjective/ Intrapersonal	Perceived quality of life SF36 (a comprehensive perception of physical and psychological health)	Psychological well-being GDS-11 (Depression)
Objective/Social -normative	Behavioral competency MMSE (Cognition) Observation Note/Checklist	Objective environment Intervention (LRP-TW) Settings (4 facilities)

Figure 6. Measurements of QOL for LRP-TW intervention

1. MOS SF-36

SF36 was designed as a multipurpose survey of general health status for use in clinical practice and research and in health policy evaluations (see Appendix II). This instrument is a 36-item self-report questionnaire that required individuals to respond to multi-item scales to measure eight dimensions, including physical functioning (PF), role limitations due to physical problems (RP), bodily pain (BP), general health (GH), vitality (VT), social functioning (SF), role limitations due to emotional problems (RE), and mental health (MH). Figure 7 demonstrates how the item questions relate to eight scales. Some sample questions are “Q1. In general, would you say your health is (Select one from five levels- Excellent, very good, good, fair, or poor)? “How much of the time during the past 4 weeks....Q9a. Did you feel full of pep (Select one from six levels- All of the time, most of the time, a good bit of the time, some of the time, a little of the time, and none of the time)? Each scale from the SF-36 is an algebraic sum of responses for all items in that scale. Each scale is then transformed to a 0-100 scale using a transformation formula (Ware, Kosinski, & Gandek, 2000). Scores between these values represent the percentage of the total possible score achieved. A higher score indicates a better health state. The SF-36 can be scored as a profile of eight separate scales or as two summary scores of physical and mental health measures, but was not designed to be aggregated into a single score (Ware, 1996). One summary score, physical health, is composed of physical functioning, role limitation due to physical problems, bodily pain, and general health. Another summary score, mental health, is composed of general mental health, role limitations due to emotional

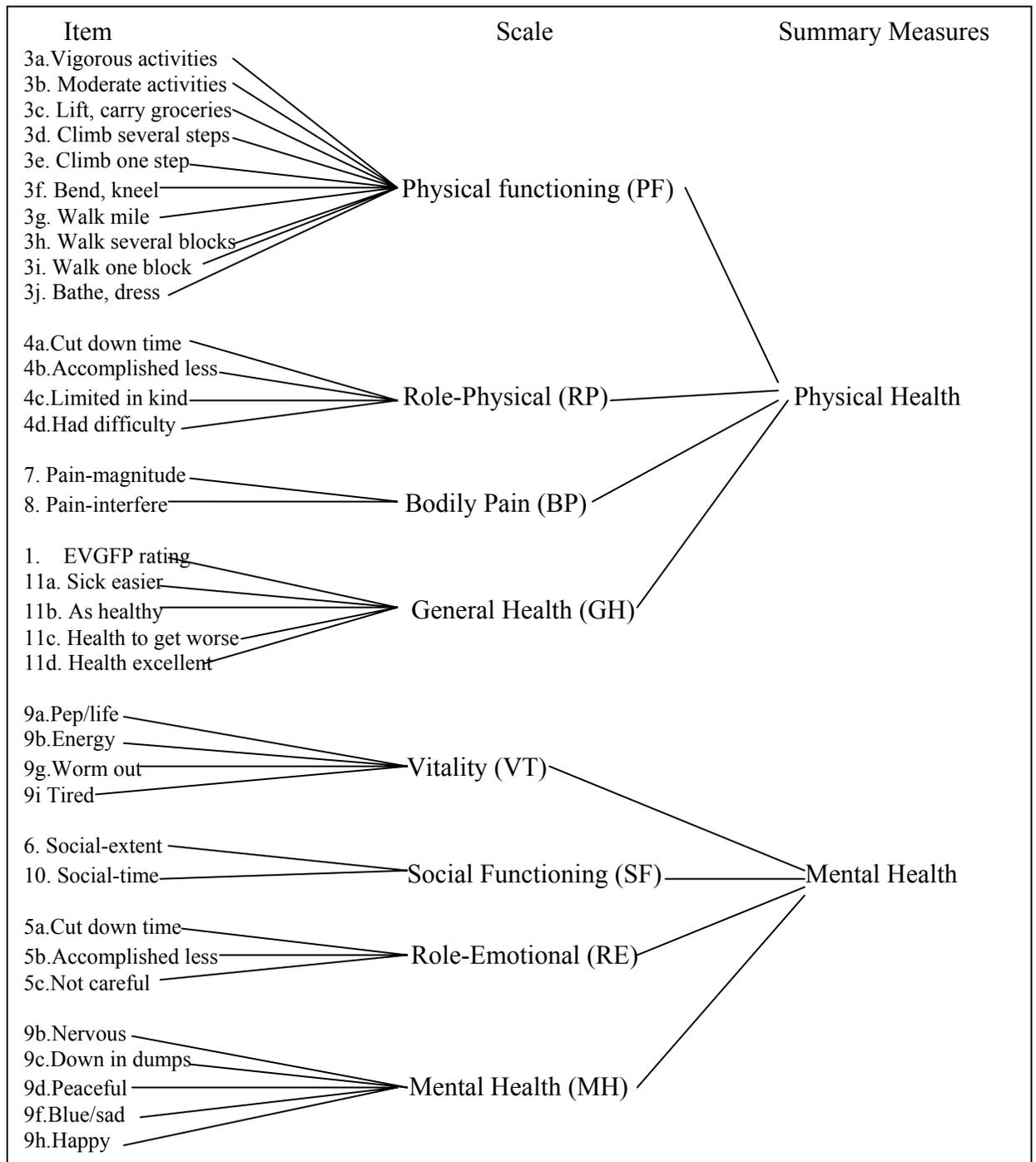


Figure 7. SF-36 measurement model

problems, social functioning, and vitality. The reliability and validity has been extensively tested over the past ten years. Internal consistencies of the eight scales exceed 0.75~0.80, and are even higher for the summary scores (Kane & Kane, 2000). This instrument has been translated to Chinese and currently it has been used by near 70 studies in Taiwan. One survey investigated 17,515 Taiwanese with the Chinese version of SF-36 and found that the item-scale correlation coefficients range from 0.40 to 0.83, and the internal consistency of each scale has reached an acceptable level ($\alpha > 0.7$) (Tseng, Lu, & Tsai, 2003). Average administration time of the SF-36 across all age group is 10 minutes. Based on the pilot study, people with dementia have taken longer (about 15-30 min.). The interviewer may give more practical examples while asking questions regarding current experience (e.g. attend group, have conversation with peers).

2. Mini-mental State Examination (MMSE)

MMSE is a tool that can be used to systematically and thoroughly assess mental status (see Appendix III). It is an 11-question measure that tests seven areas of cognitive function: orientation, registration, attention, calculation, recall, language, and visual construction. The maximum score is 30. A score of 23 or lower is indicative of cognitive impairment. A score of 20 - 23 is indicative of mild AD, and a score of 10 - 19 is indicative of moderate AD, and a score of 0 - 9 is indicative of severe AD (Tiraboschi et al., 2000). The MMSE takes only 5-10 minutes to administer and is therefore practical to use repeatedly and routinely. Since its creation in 1975, the MMSE has been validated and extensively used in both clinical practice and research. For instance, MMSE has a high correlation with verbal IQ ($r=0.776$) and performance

IQ ($r=0.660$), and high 24-hour test-retest reliability ($r=0.887$) (Folstein, et al., 1975). The Chinese version of MMSE was modified based on the sociocultural and language characteristics of the Chinese population. The Chinese version of MMSE has a high correlation with Wechsler Preschool and Primary Scale of Intelligence (WPPSI, $r=0.78$) and performance IQ ($r=0.66$), and the test-retest reliability is from 0.89 to 0.98 (Guo, et al, 1988). Average administration time of this population may take 10 to 25 minutes.

3. GDS-11

The GDS-11 is a shortened version of the 15-item version of the Geriatric Depression Scale (See Appendix IV). The original GSD consists of 15 of the questions relating to depressed mood and psychophysiological indicators of depression. Respondents answer a series of statements with "yes" or "no" to indicate their feelings over the past few weeks. Its dichotomous design was easy to comprehend and answer for subjects suffering from severe dementia. Its validity was confirmed by other studies in Chinese, English, Malay and Farsi, and the test-retest reliability (range: 0.7 – 0.84) was acceptable (Malakouti, Fatollahi, mirabzadeh, Salavati, & Zandi, 2006). Tang, Wong, Chiu, Lum, and Ungvari (2005) proposed an 11-item version that excluded 4 items out of the original 15 items. By investigating 300 Hong Kong Chinese with pneumoconiosis, the abbreviated version was created by removal of misfit and redundant items resulting in similar overall performance as the original 15-item GDS. None of the remaining items had significant differential item functioning

for age, level of education and cognitive impairment. The GDS-11 has a better fit for this study because it reduced the time for administration. Average administration time for this population should be 5 to 10 minutes.

Quantitative data analysis

The Pearson Product Moment Correlation was employed to test the first hypothesis in order to identify the relationship between dependent variables (i.e. subjective and objective QOL) based on pretest scores, posttest scores, and change scores. A significant correlation would be identified at $p < 0.05$ between 4 variables, such as SF36-physical health, SF36-mental health, GDS, and MMSE.

Multivariate Analysis of Covariance (MANCOVA) was utilized to test the second hypothesis regarding the effect of LRP-TW. Instead of using ANOVA for separate dependent variables, several dependent variables as a combined dependent variable can be measured for changes due to the treatment after adjusting for the pretest score. MANCOVA considers several dependent variables in combination and may occasionally be more powerful than ANOVA that treats one dependent variable at a time. Two level of intervention (with & without) and 4 settings (various facilities) were viewed as independent variables. Four posttest scores of subjective and objective indicators of QOL (i.e. SF36-physical health, SF36-mental health, GDS, & MMSE) served as multiple dependent variables. Pretest scores on the 4 dependent variables were used as covariates. Three effects, including treatment, environment, and the interaction term, would not be found to be significant if their p-value is larger than 0.05 ($H_0: \delta = 0$). The SPSS 13.0 statistical package was used for these two statistical analyses.

Qualitative measurements

The qualitative data was collected during the intervention only for the subjects in the treatment group. It had less weight (i.e. dominant status) than quantitative data but explored the impact of the intervention program (i.e. LRP-TW) directly from the observation and evaluation of participants' performance. The evaluation of the performance measures should be conducted on an ongoing basis (Stumbo, & Peterson, 2004). Based on the program protocol (see Appendix I), the primary researcher performed the evaluation after each sessions in order to record each participant's performance (i.e. orientation functions, emotion functions, thought functions and social functions). The evaluation of performance measures contained two forms: one was a check-list, and one was an observation note (see an example in Table 7).

The checklist reflected the goal for the program and focused on the following three terminal program objectives:

1. Orientation performance

The participant has to demonstrate knowledge of the concepts of orientation (i.e., the subject can answer questions regarding time, place, person, and other specified or unspecified orientation while reminiscing). For example, subject C3 was able to describe that she was withdrawn from the school because her father asked her to stay home for farming work.

2. Affect performance

The participant has to demonstrate the ability to recognize of interior emotion expression (i.e. the subject can display appropriate emotional

expression corresponding to interaction with the environment, and can regulate emotions appropriately while affect is changed). For example, subject C6 was laughing while others made a joke

3. Thought performance

The participant has to demonstrate the ability to use moderate thought functions (i.e. the subject can describe a past event under a moderate pace, form and content of thoughts). For example, subject C8 appropriately described his experience in watching a Taiwanese opera.

The check-list used a binominal scale (+/-) to record whether or not the participants could demonstrate the ability during each program session. If the participant appeared to give positive feedback in a session (i.e. the behavior met the requirement of the enabling objective), a mark “+” was given in the checklist; on the contrary, if the participants did not demonstrate any behavior meeting the requirement of the enabling objective, a mark “-“ was given in the checklist in this session. The scores for performance measures were recorded using the symbols “+” to represent 1 point and “-“ to represent 0 points. The score was simply summed up as one score representing the frequency of the behaviors that met the enabling objectives. Observation notes recorded the quality of the behaviors relative to the desired outcomes.

Table 7. Example of an evaluation of performance measures

Facility : C	Week: 5th		Date: 5/19				Date: 5/21					
Content	C3	C4	C6	C8	C11	C12	C3	C4	C6	C8	C11	C12
To demonstrate the ability to recognize the orientation to time when reminisce the event	+	-	-	+	+		+		+	+	+	
To demonstrate the ability to recognize the orientation to place when reminisce the event	+	+	+	+	+		-		-	-	-	
To demonstrate the ability to recognize the orientation to person when reminisce the event	+	+	+	+	+		-		-	-	-	
To demonstrate the ability to recognize the other specified orientation when reminisce the event	+	+	+	+	+		+		+	+	+	
To demonstrate the ability to recognize the unspecified orientation when reminisce the event	+	-	-	+	+		-		+	+	-	
To demonstrate the ability to show appropriateness of emotion that produce congruence of feeling of affect with the situation	+	+	+	+	+		+		+	+	+	
To demonstrate the ability to show regulation of emotion that controls the experience and display of affect	+	+	+	+	+		+		+	+	+	
To demonstrate the ability to perform moderate pace of thought	+	+	+	+	+		+		+	+	+	
To demonstrate the ability to perform moderate form of thought	+	+	+	+	+		+		+	+	+	
To demonstrate the ability to perform moderate content of thought	+	+	+	+	+		+		+	+	+	

+ positive feedback - negative feedback / N/A

Observation Note:

5/19-

C3 was talkative while involved and kept stating that her childhood was too poor to have leisure events, such as the local drama.

C4 actively participated in the activity while involving, and interacted easily with peers.

C6 initially refused to play the puppet, but was able to try after staff's encouragement. Appears bright and happy while involved.

C8 actively participated in the program. Appears happy while involved.

C11 was cooperative with the program. Able to complete the task and respond to the discussion but still mumbled when talking.

C12 denied into the program and stated a reason with his delusive thought.

5/21-

C3 had a fight before the section started with a delusive peer. Later she was able to work diligently (did two drawings) on the task and appears bright.

C4 was absent due to delusional thoughts and had to isolate from the group.

C6 diligently worked on the drawing task but need assistance due to physical limits. Completed the task and appears content.

C8 actively participated in the program. He was more talkative than before and recalled several past events. Appears happy and bright while involved.

C11 was cooperative with the program. Completed the task with assistance. Appears focused and calm.

C12 denied into the program and stated a reason with his delusive thought.

The observation note adopted a narrative format that simply recorded the participant's behavior regarding cognitive, emotional and social functioning, and attendance. It could record event, activities, problems, or issues in any logical order, and it also provided room to explain the client's behaviors, interactions, and other information relevant to the program (Stumbo, & Peterson, 2004). For instance, the narrative record on 5/19 for C3: "*C3 was talkative while involved and kept stating that her childhood was too poor to have leisure events, such as the local drama*".

Qualitative data analysis

The qualitative results were analyzed as two parts. First, the scores of performance measurements were summed by each session and each enabling objective. For example, the group performance scores of the first session were added according to the 10 enabling objectives, and the group performance scores of 20 sessions were compared to find out which sessions yielded better scores. The group performance scores of an enabling objective (e.g. orientation to time) were added for 20 sessions, and the group performance score for 10 enabling objectives were compared to find out which objectives had better scores. The second dataset, the observation note, was analyzed using content analysis. The researcher subjectively generalized the notes and summarized as a description to report anything significant for each individual during the program implementation.

CHAPTER IV

Results

It is difficult to hold caregivers accountable for maximizing quality of life for their residents when there is no consensus on what constitutes quality of life or how to measure the construct. This is also a problem for service providers of long term care for elders with conditions that hinder community dwelling in Taiwan. The purpose of this study is to test the impact of the LRP on QOL for nursing home residents diagnosed with mild to moderate AD when QOL is construed as a multi-dimensional compound construct. If the measurement of a multi-dimensional compound construct can capture positive changes due to the LRP, the effectiveness of the intervention on QOL can be verified for use in Taiwan.

This study emphasizes the research problem that a multi-dimensional complex of QOL measurements for residents with mild to moderate AD in south Taiwan's long term care facilities should be established to capture the changes caused by the LRP-TW intervention. This chapter describes the testing results from quantitative analysis of data related to specific research questions. These are presented in Section I, followed by the results from qualitative analyses in Section II that addresses the program evaluation for the assurance of intervention quality. The purpose of the quantitative section of the study was to test two hypotheses that: H1- there are moderate to strong correlations between the dependent variables; and H2- participation in LRP-TW results in positive changes in the dependent variables (i.e. QOL scores). The purpose of the qualitative section was to assess whether life review occurred for participants, through the observation of the

researcher (i.e. program leader), and to determine whether the structure and delivery of the LRP-TW was culturally adapted to the Taiwanese elders experience.

Section I

Quantitative Results

Characteristics of subjects

Thirty-six subjects met the criterion and completed the pretest for baseline data collection. Table 8 demonstrates the characteristics of the subjects. The age of the subjects ranged from 65 to 91, and the majority (37.8%) were 76 to 80 years old. Only one subject was over 90 years old. Of the total sample, 21 subjects (56.7%) were female and 16 subjects (43.3%) were male. As to education level, the majority (45.9%) had been educated in elementary school but may not have completed six years of education. Particularly, a noticeable number (24.3%) of subjects were illiterate, compared to the rare number (8.1%) of subjects with higher education levels. As to religious background, most subjects (48.6%) were Buddhists, some (37.8%) had no religion or refused to claim, and only a few (13.6%) were Christian or Catholic. Culturally, the majority (75.7%) was Taiwanese who spoke Taiwanese but could understand Mandarin. The minority group (24.3%) was Mandarin who could speak Mandarin but also understand Taiwanese, and immigrated to Taiwan from mainland China in their younger adulthood. The subjects' length of residency ranged widely from 1 month to 7 years. Twenty-seven percent of the subjects lived in the facility less than one year, and 73% had lived in the facility more than one year.

Table 8. Frequency of characteristics of subjects

Facility (Groups) Characteristics	A		B		C		D		Total		Sum
	Tx	Ct	Tx	Ct	Tx	Ct	Tx	Ct	Tx	Ct	
Age											
65-70	1				2			1	3	1	4
71-75			1		2	1	1		4	1	5
76-80	2		3	1	2	2	3	3	8	6	14
81-85		2		1	2	2			2	5	7
86-90	1	3		1		1			1	5	6
91-95	1								1		1
Gender											
Female	2	4	3	1	3	3	3	2	11	10	21
Male	3	1	1	2	3	3	1	2	8	8	16
Education											
Illiteracy		1	2	1	2	2		1	4	5	9
Elementary school	3	3	2		3	3	1	2	9	8	17
Junior high school		1							0	1	1
Senior high school	2			1	1	1	1	1	4	3	7
College and above				1			2		2	1	3
Religion											
Buddhism	4	2	2	1	4	2	2	1	12	6	18
Christianity						1		1	0	2	2
Catholicism					1	1	1		2	1	3
N/A	1	3	2	2	1	2	1	2	5	9	14
Culture background											
Mandarin	3	1		2		3			3	6	9
Taiwanese	2	4	4	1	6	3	4	4	16	12	28
Residency											
Below 1 year	2	2		1	2	2		1	4	6	10
1-2 year	2	1	2	2	2	3	2		8	6	14
3-5 year	1	1	2		1	1	1	2	5	4	9
More than 5 year		1			1		1	1	2	2	4
Total	5	5	4	3	6	6	4	4	19	18	37

*Tx=Treatment group; Ct=Control group

Pretest data

To determine whether the baseline data for the treatment group and the control group were the same initially, several variables including the characteristics of subjects and the pretest score of dependent variables were analyzed. Because three subjects dropped out before the posttest, the baseline information regarding 34 subjects who completed the study were illustrated only in Table 9. No statistically significant differences existed at baseline in the characteristic of subjects, including Age ($t(32)=1.54$, $p=0.088$), Gender ($\chi^2(1, N=34)=0.000$, $p=1.00$), Education level ($\chi^2(4, N=34)=1.869$, $p=0.760$), or length of Residency ($\chi^2(3, N=34)=0.602$, $p=0.896$). The baseline data of the pretest also showed no significant differences between the two groups regarding subjective indicators, such as QOL perception of physical health (i.e. SF36-PH, $t(32)=-0.308$, $p=0.760$), QOL perception of mental health (i.e. SF36-MH, $t(32)=-0.037$, $p=0.971$), and depression (i.e. GDS, $t(32)=0.269$, $p=0.790$), and at the objective indicator, cognition (i.e. MMSE, $t(32)=0.450$, $p=0.656$).

Table 9. Demographic and baseline of measurements between two groups

Variables	Treatment Group (N=17)	Control group (N=17)	Statistical Comparison
Age (Mean±SD)	77.59±7.11	81.00±5.73	$t=1.54, p=0.088$
Gender (%)			$\chi^2=0.000, p=1.00$
Female	47	47	
Male	53	53	
Education (%)			$\chi^2=1.869, p=0.760$
Illiteracy	23.5	17.6	
Elementary school	41.2	53	
Junior high school	0	5.9	
Senior high school	23.5	17.6	
College and above	11.8	5.9	
Residency (%)			$\chi^2=0.602, p=0.896$
Below 1 year	23.5	35.3	
1-2 year	35.3	29.4	
3-5 year	29.4	23.5	
More than 5 year	11.8	11.8	
SF36-PH(Mean(SD))	68.88(22.69)	66.76(16.98)	$t=-0.308, p=0.760$
PF*	40.29(39.63)	24.12(22.79)	$t=-1.459, p=0.154$
RP*	88.24(33.21)	88.24(33.21)	$t=0.000, p=1.000$
BP*	76.71(26.97)	86.53(25.72)	$t=1.087, p=0.285$
GH*	65.47(22.93)	63.29(14.53)	$t=-0.331, p=0.743$
SF36-MH	78.18(20.16)	78.41(16.53)	$t=-0.037, p=0.971$
VT*	74.71(21.54)	72.35(17.69)	$t=-0.348, p=0.730$
SF*	86.82(24.79)	86.88(25.03)	$t=0.007, p=0.995$
RE*	82.35(39.30)	94.12(24.25)	$t=1.050, p=0.301$
MH*	81.41(19.90)	75.53(19.44)	$t=-0.872, p=0.390$
MMSE	16.65 (4.73)	17.29(3.58)	$t=0.450, p=0.656$
GDS	2.65(2.64)	2.35(2.74)	$t=-0.319, p=0.752$

*Subscales of SF36 (SF36-PH= summarized QOL perception of physical health PF=physical functioning, RP=role of physical functioning, BP=bodily pain, GH=general health, SF36-MH= summarized QOL perception of mental health, VT=vitality, SF=social functioning, RE=role of emotion functioning, MH=mental health)

Post-intervention analysis

Of the thirty-seven subjects who completed all the pretest measures of the study, 34 actually completed the study, including the intervention and the posttest. Three subjects were dropped from the study due to hospitalization and were unable to complete the posttest. Two dropped subjects were in the treatment group; one is from facility A, and one is from facility C. Another dropped subject was in the control group from facility C. The following post-intervention analysis was based on the 34 subjects who completed the study. There are 17 subjects in the treatment group, and 17 subjects in the control group.

Hypothesis one: intercorrelations between the subjective and objective QOL indicators

To address the research problem for program and provider accountability for QOL when there is no consensus on what constitutes quality of life or how to measure the construct, a multi-dimensional complex of QOL measurements for people with AD was established to capture any changes instigated by the intervention (i.e. LRP-TW). The first research question is whether there is a relationship between the objective and subjective indicators that compose a multi-dimensional complex of QOL measurements. The first hypothesis that was stated:

H1: There are moderate to strong correlations between subjective indicators and objective indicator of QOL.

To examine the relationship between the dependent variables (i.e. objective indicator [cognition] and subjective indicators [QOL perception of physical health, QOL perception of mental health, and depression]), a bivariate correlation statistic, Pearson

product-moment coefficient (Pearson correlation) is used to illustrate the patterns of pretest, posttest, and the changes (posttest-pretest) of the data.

Table 10. Intercorrelations for subjective and objective QOL indicators at pretest (N=34)

	Mean	SD	1. SF36-PH	2. SF36-MH	3. MMSE	4. GSD
1. SF36-PH	67.824	19.765	1.00	0.871**	0.092	-0.550**
2. SF36-MH	78.294	18.152		1.00	0.072	-0.518**
3. MMSE	16.971	4.145			1.00	-0.150
4. GDS	2.5	2.654				1.00

Note. Subjective indicator was represented by scores of physical health (SF36), mental health (SF36) and depression (GSD). Objective indicator was represented by the score of cognitive functioning (MMSE).

* $p < 0.05$, ** $p < 0.01$

Table 10 shows the relationship between the dependent variables for the pretest result. A strong positive relationship exists between the QOL perception of physical health and mental health ($r=0.871$, $p < 0.01$). Depression has a moderate negative relationship with perception of physical health ($r=-0.550$, $p < 0.01$) and the perception of mental health ($r=-0.518$, $p < 0.01$). However cognition, the objective indicator, showed no significant relationship with any of the subjective indicators. The data from subjects in this study indicated that the three subjective QOL indicators had moderate to strong intercorrelations but were not correlated with the objective QOL indicator before the intervention. As their perception of physical health is increasing, their perception of the mental health is increasing; as their depression rises, their perceptions of physical health and mental health decline.

Table 11. Intercorrelations for subjective and objective QOL indicators at posttest (N=34)

	Mean	SD	1. SF36-PH	2. SF36-MH	3. MMSE	4. GSD
1. SF36-PH	68.559	19.295	1.00	0.775**	0.147	-0.497**
2. SF36-MH	77.147	18.868		1.00	0.336	-0.712**
3. MMSE	17.677	5.044			1.00	-0.408*
4. GDS	3.206	3.409				1.00

Note. Subjective indicator was represented by scores of physical health (SF36), mental health (SF36) and depression (GSD). Objective indicator was represented by the score of cognitive functioning (MMSE).

* $p < 0.05$, ** $p < 0.01$

Table 11 shows the relationship between the dependent variables for the posttest result. There is a strong positive relationship between the QOL perception of physical health and mental health ($r=0.775$, $p < 0.01$). There is a moderate negative relationship between depression and perception of physical health ($r=-0.497$, $p < 0.01$) and the perception of mental health ($r=-0.712$, $p < 0.01$). The objective indicator, cognition showed a weak negative relationship ($r=-0.408$, $p < 0.05$) with one of the subjective indicators, depression. The subjects' data confirmed that the three subjective QOL indicators had moderate to strong intercorrelations and only one subjective indicator (i.e. depression) had a weak correlation with the objective QOL after the intervention. As subjects' perception of physical health increases, their perception of the mental health increases; as their depression worsens, their perceptions of physical health and mental health, and cognition decline.

Table 12. Intercorrelations for subjective and objective QOL indicators (posttest - pretest)

	(N=34)	Mean	SD	1. SF36-PH	2. SF36-MH	3. MMSE	4. GSD
1. SF36-PH		0.736	15.666	1.00	0.764**	0.250	-0.295**
2. SF36-MH		-1.147	18.400		1.00	0.287	-0.352**
3. MMSE		0.706	4.153			1.00	-0.231
4. GSD		0.706	2.209				1.00

Note. Subjective indicator was represented by scores of physical health (SF36), mental health (SF36) and depression (GSD). Objective indicator was represented by the score of cognitive functioning (MMSE).

* $p < 0.05$, ** $p < 0.01$

Table 12 shows the relationship between the dependent variables for the changes of test scores after the 10-week interval. There is still a strong positive relationship between the QOL perception of physical health and mental health ($r=0.764$, $p < 0.01$). However, the depression has a weak negative relationship with perception of physical health ($r=-0.295$, $p < 0.01$) and the perception of mental health ($r=-0.352$, $p < 0.01$). Furthermore the objective indicator, cognition showed no significant relationship between any of the subjective indicators. That finding is the same as in the pretest but is different from the posttest. As their changed score in perception of physical health increases, their changed score in perception of mental health increases; as their changed score of depression worsens, their changed score in perceptions of physical health and mental health tend to decline.

These results revealed that there are certain intercorrelations within the subjective and objective indicators of QOL that formed a complex of QOL measurements. They should be viewed as a composite variable to detect the effect of the intervention, although the objective indicator has a weak and unstable relationship with the subjective indicators.

Hypothesis two: examination of the effect of LRP-TW

To clarify whether the variations on the posttest are caused by the treatment or not, the second hypothesis:

H2: Participation in LRP-TW results in positive changes in the QOL scores measured by multi-dimensional complex measurement

The study used Multivariate Analysis of Covariance (MANCOVA) analysis to examine the effect of the QOL variation. Subjects obtained in different facilities may also contribute to variations; SETTING should be examined as another main effect in addition to the INTERVENTION. Otherwise, the pretest score of the dependent variables are entered as the covariate to adjust the posttest score of dependent variables. In order to perform the MANCOVA, several statistical assumptions and limitations are discussed in advance as follows.

Table 13. Descriptive statistics of original posttest mean scores of subjective and objective QOL indicators

IV	Treatment group (N=17)				Control group (N=17)			
	Setting				Setting			
N=	A	B	C	D	A	B	C	D
DV								
SF36-PH	77.6 (9.53)	55 (37.28)	63.2 (20.17)	75 (7.21)	74 (13.86)	65 (23.26)	72.6 (17.62)	63.5 (19.57)
<i>Total</i>		<i>67.589(21.88)</i>				<i>69.53(16.95)</i>		
SF36-MH	80.5 (11.46)	63.75 (32.22)	80.6 (18.31)	73.67 (26.58)	85 (14.3)	69.67 (9.61)	81.8 (18.23)	74.75 (22.72)
<i>Total</i>		<i>75.35(21.22)</i>				<i>78.94(16.65)</i>		
MMSE	16.6 (6.35)	16.75 (4.65)	16.6 (8.02)	20 (2.65)	21 (4.24)	17.67 (4.04)	18.2 (3.42)	14.75 (4.79)
<i>Total</i>		<i>17.24(5.73)</i>				<i>18.12(4.39)</i>		
GDS	3.2 (3.03)	3 (5.35)	3.4 (2.51)	6 (5.20)	0.08 (1.30)	2.67 (2.31)	3.2 (4.38)	4.5 (3)
<i>Total</i>		<i>3.71(3.72)</i>				<i>2.71(3.10)</i>		

Table 13 demonstrated the original posttest mean ($N=34$) of dependent variables categorized by the two independent variables (INTERVENTION and SETTING). The normality test (i.e. Kolmogorov-smirnov and Shapiro-Wilk) of each dependent variable across the levels of the independent variables is depicted as Table 14. The overall normality tests were not found to be statistically significant ($p>0.01$), indicating that each group-dependent variable distribution does not depart significantly from the normality excluding the depression of the control group and the depression of facility A. To confirm skewness and kurtosis to see the shape of the distribution, the skewness of the variable (i.e. depression), is within the -1 to +1 range but the kurtosis is exceeding the -1 that may provide concern about a flat distribution. Therefore, one of the dependent variables (i.e. depression) may remain bias and violates the statistical assumption of normality.

Table 15 depicts a statistically significant Box's M test ($p<0.05$), indicating that the dependent variable covariance matrices are not equal across the levels of the independent variable (i.e. the inequality of variance-covariance matrices or heterogeneity of covariance). It may be due to the unequal sub-group sample size. Therefore, Pillai's trace is suggested to assess the multivariate effect (Meyers, Gamst, & Guarino, 2006). Separate Levene's tests for each dependent variable found no statistically significant ($p<0.05$) test for all the dependent measures. This result indicates that relatively equal variances are in place for each dependent variable. The Bartlett's test of sphericity in Table 16 was statistically significant ($p<0.001$), indicating sufficient correlation between the dependent variables to proceed with the analysis.

Table 14. Subjective and objective QOL indicators of posttest for normality test by intervention group and settings

Normality test	Intervention group				Settings							
	Experiment		Control		Facility A		Facility B		Facility C		Facility D	
	Statistic	Sig.	Statistic	Sig.	Statistic	Sig.	Statistic	Sig.	Statistic	Sig.	Statistic	Sig.
SF36-PH												
Kolmogorov-Smirnov	.223	.025	.178	.155	.147	.200	.241	.200	.175	.200	.229	.200
Shapiro-Wilk	.830	.005*	.911	.103	.956	.739	.853	.130	.941	.568	.881	.231
Skewness	-1.280		-0.603		-0.624		-0.411		-0.701		-1.149	
Kurtosis	0.792		-0.973		0.562		-2.039		0.113		0.512	
SF36-MH												
Kolmogorov-Smirnov	.221	.026	.171	.197	.173	.200	.147	.200	.332	.003	.191	.200
Shapiro-Wilk	.867	.019	.907	.091	.937	.520	.933	.575	.816	.022	.892	.286
Skewness	-1.195		-0.552		-0.582		-0.971		-1.104		-0.475	
Kurtosis	0.750		-0.808		-0.767		0.851		-0.264		-1.318	
MMSE												
Kolmogorov-Smirnov	.144	.200	.168	.200	.152	.200	.188	.200	.193	.200	.214	.200
Shapiro-Wilk	.962	.666	.966	.751	.951	.680	.948	.712	.970	.889	.904	.356
Skewness	0.540		-0.397		0.128		0.107		0.483		-1.166	
Kurtosis	-0.090		0.611		-1.018		-1.402		0.787		2.459	
GDS												
Kolmogorov-Smirnov	.193	.091	.279	.001*	.285	.021	.249	.200	.236	.120	.304	.049
Shapiro-Wilk	.875	.026	.798	.002*	.770	.006*	.769	.020	.831	.035	.819	.062
Skewness	0.576		0.584		0.815		1.678		0.417		-0.682	
Kurtosis	-0.920		-1.316		-1.134		2.859		-1.561		-1.099	

* $p < 0.01$

Table 15. Tests of equality of covariance matrices and equality of error variances

	Overall		SF36-PH		SF36-MH		MMSE		GDS	
	Statistic	Sig.	Statistic	Sig.	Statistic	Sig.	Statistic	Sig.	Statistic	Sig.
Box's M	93.584	0.025*								
Levene's test			0.949	0.488	2.278	0.060	1.438	0.233	1.986	0.096

* $p < 0.05$

Table 16. Tests of intercorrelations of dependent variables

	<i>Statistic</i>	<i>Sig.</i>
Bartlett's test of sphericity	115.518	0.000**
Person correlation		
SF36-PH by SF36-MH	0775	0.000**
SF36-PH by MMSE	.147	0.408
SF36-PH by GDS	-0.497	0.003**
SF36-MH by MMSE	0.336	0.052
SF36-MH by GDS	-0.712	0.000**
MMSE by GDS	-0.408	0.016*

* $p < 0.05$ ** $p < 0.01$

Table 17. Multivariate test results

	Multivariate test	Value	F(df _{between} ,df _{within})	Sig.	Partial Eta Squared	Observed power
Intervention	Pillai's trace	0.059	0.297(4,19)	0.876	0.059	0.102
Settings	Pillai's trace	0.762	1.677(12,63)	0.094	0.242	0.795
Intervention × Settings	Pillai's trace	0.389	0.783(12,63)	0.665	0.130	0.404

Table 17 presents the multivariate test results for each independent variable separately (main effects) and their interaction. Using the Pillai's trace, the dependent variable was not significantly affected by the main effects of INTERVENTION, SETTING, and their interaction. Neither the intervention group nor different settings contributes to the variate of QOL indicated by the subjects. Univariate tests were conducted on each dependent measure separately presented in Table 18. It also revealed that there is no indicator of QOL significantly affected by the intervention group or different settings. Although the adjusted mean of the treatment group has less satisfaction of the subjective QOL indicators (i.e. physical health, mental health, depression) and higher performance of objective QOL indicator (i.e. cognition) compared to the adjusted mean of the control group, no statistically significant intervention effect was observed for the subjective and objective

QOL indicators. The second hypothesis was not confirmed; therefore, there is no confidence for this study to conclude that the LRP-TW had an effect on the participant's perception of QOL.

Table 18. Univariate test results

	Dependent measure			
	SF-PH	SF-MH	MMSE	GDS
IV- INTERVENTION				
Adjusted means(SD) of				
Treatment group	66.978(3.582)	74.929(4.199)	17.746(1.002)	3.746(0.556)
Control group	69.766(3.585)	77.565(4.203)	17.559(1.003)	2.935(0.556)
F statistic	0.300	0.195	0.017	1.053
Significance	0.590	0.663	0.897	0.316
Partial eta squared	0.013	0.009	0.001	0.046
IV- SETTINGS				
Adjusted means(SD) of				
A	77.824(4.806)	82.222(5.634)	17.7(1.345)	2.414(0.746)
B	60.625(5.826)	66.758(6.829)	18.315(1.63)	2.876(0.904)
C	62.317(4.839)	79.045(5.673)	17.467(1.354)	3.497(0.751)
D	72.723(5.871)	76.963(6.882)	17.129(1.643)	4.576(0.911)
F statistic	2.693	1.115	0.084	1.075
Significance	0.071	0.364	0.968	0.380
Partial eta squared	0.269	0.132	0.011	0.128
Interaction-				
Intervention × Facility				
F statistic	0.175	0.179	0.570	1.382
Significance	0.912	0.910	0.641	0.274
Partial eta squared	0.023	0.024	0.072	0.159

Section II

Qualitative results

The researcher collecting qualitative data was also the program leader and implemented the LRP-TW for the treatment group. Data recorded as performance measurements and observation notes were used to assess whether life review occurred for participants and to determine whether the structure and delivery of the revised LRP-TW affected the results. Data on 19 subjects were analyzed for the qualitative results, including two subjects who were withdrawn from the study while the program was implemented. The performance measurements were observed and recorded dichotomously (i.e. positive or negative feedback) after each session to see if each subject could perform the behavior based on the following description of Terminal Program Objectives (TPO) and Enabling Objectives (EO):

TPO 1: To demonstrate knowledge of the concepts of orientation

EO 1: To demonstrate the ability to recognize the orientation to time when reminiscing about the event

EO 2: To demonstrate the ability to recognize the orientation to place when reminiscing about the event

EO 3: To demonstrate the ability to recognize the orientation to person when reminiscing about the event

EO 4: To demonstrate the ability to recognize the other specified orientation reminiscing about the event

EO 5: To demonstrate the ability to recognize the unspecified orientation when reminiscing about the event

TPO 2: To demonstrate the ability to recognize the express emotions properly

EO 1: To demonstrate the ability to express appropriate emotions that produce congruence of feeling and of affect with the situation

EO 2: To demonstrate the ability to show regulation of emotions that control the experience and display of affect

TPO3: To demonstrate the ability to use moderate thought functions

EO 1: To demonstrate the ability to perform at a moderate pace of thought

EO 2: To demonstrate the ability to perform with a moderate form of thought

EO 3: To demonstrate the ability to perform with moderate content of thought

General performance measurement

Figure 8 portrayed the number of attendant subjects and the average of accumulated performance scores at each session. It showed that attendance numbers (N=14) decreased rapidly after the 10th session and slightly bounced back through the end of the program. One subject was withdrawn from the program after session 10 and never came back for the program. The other subject was too frail to attend the posttest although she only missed sessions 18 and 19. Excluding these two subjects, only five subjects reached a 100% attendance rate, four subjects had a 95% attendance rate, and the rest of the subjects had an attendance rate ranging from 65% to 85% (1 for 65%, 1 for 75%, 1 for 80%, & 5 for 85%). It was difficult to require the subjects to attend every session due to their physical or mental health.

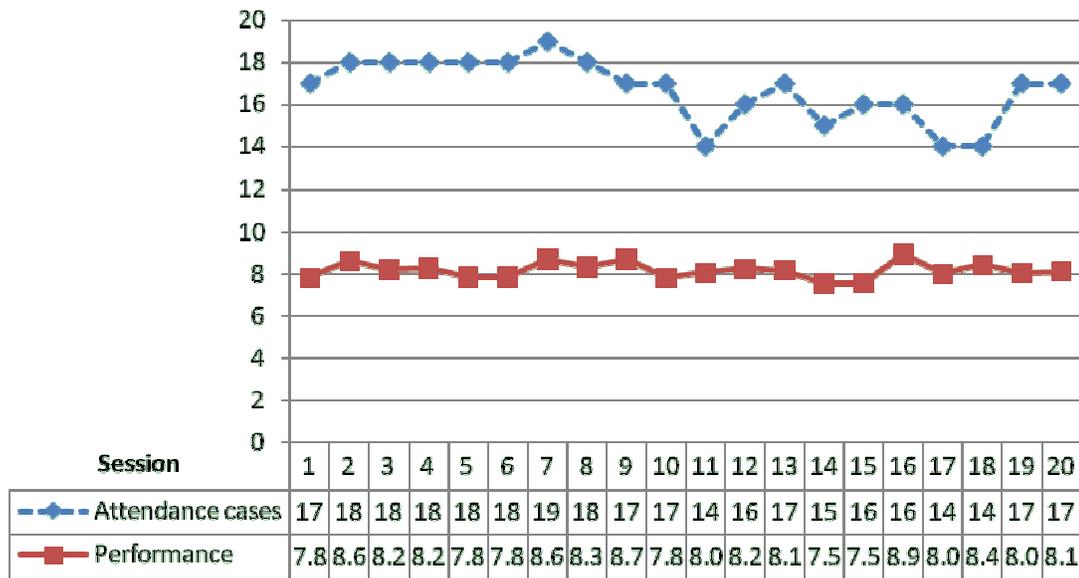


Figure 8. Number of attendance cases and average performance score across sessions

For performance score, 8.16 out of 10 points was the average performance across 20 sessions indicated by the participants. There are 14 sessions (70%) above the performance score of 8.0; however, a few sessions showed lower performance scores than 8.0, such as session 1, 5, 6, 10, 14, and 15. In particular, the 3rd week (i.e. session 5 and 6) showed a consistently low score; that week the life stage was toddler and the activity was draw lots. Although the session 14th and 15th also showed a consistently low score, they were not in the same week which means they were in different types of activities. The 8th week (i.e. session 16 and 17) indicated higher performance than the other sessions, particular in session 16, that week the life stage was middle adult and the activity was cooking. The 4th week (i.e. session 7 and 8) also showed higher performance scores consistently, that week the life stage was play age and the activity was childhood toys. It may suggest a trend that the theme or the activity type may influence the performance of the participants.

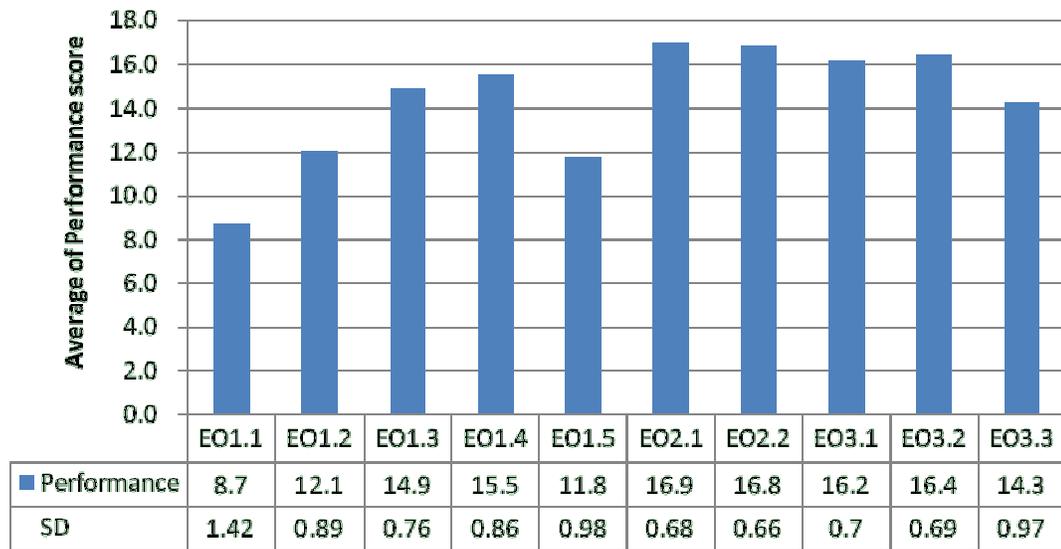


Figure 9. Average performance score across enabling objectives

Note. EO = Enabling Objective, Performance = Average of cumulated performance score from 20 sessions, SD = Standard Deviation

Figure 9 demonstrated the average performance score accumulated from 20 sessions for each enabling objectives generalized by 19 subjects. In general, subjects indicated less time orientation (8.9 out of 20 points) than place (12.1 out of 20 points) and person (14.9 out of 20 points) when they recall the events because most of the participants showed difficulty in identifying the current date or the age of when their event occurred. However, some specified or unspecified orientation, such as name of the movie star/singer or the method of their childhood toy and cooking, can be recalled explicitly on occasion. Most of the subjects could demonstrate appropriate emotional expression but on a very few occasions some subjects appeared to express irrational emotions, such as bursting into laughter or tears. As they performed thought functions, most of the subjects showed highly functioning performance on logical pace (16.2) and appropriate form (16.4), but a few subjects presented intangible content while in group discussion.

Individual performance measurement

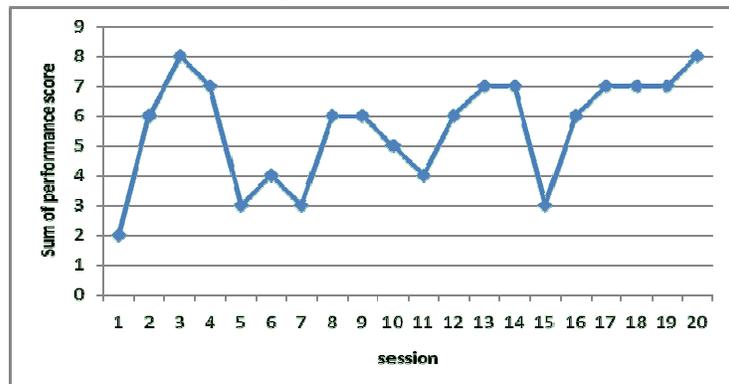
The above results only show the generalized performance from 19 subjects who participated in the LRP-TW. To discover more detail, the following session described a brief review and highlights from each subject according to their individual performance evaluation and observation notes compared with their QOL measurements. Each table represents the data of one participant, including the comparison of pre- and posttest scores of QOL and two figures illustrating his/her performance score across program the implementation period, one is the sum of performances based on the evaluation of each session, and the other is the sum of performances based on the evaluation of each enabling objective.

A1 was a 78 year-old male who attended all 20 sessions (100%). He was cooperative with the program and responded to the leader and staff pleasantly. He was quiet in the group and seldom initiated conversation with the group but was able to recall and share several past events with staff encouragement. His functioning performance, especially in cognition, was variable. He showed some deviance (e.g. eating a raw dumpling) in session 5 and 15 that staff needed to put a caution on him. He appeared bright when he was singing his favorite song. However, his QOL dropped rapidly at posttest corresponding to his low performance on EO1 and EO3. (See Table 19).

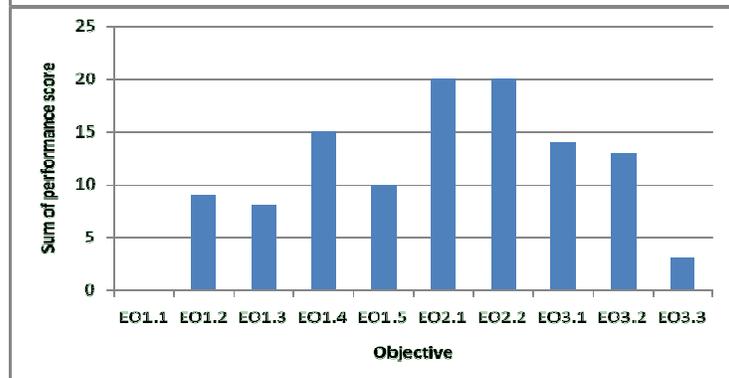
Table 19. Individual performance and QOL comparison on subject A1

Attendance: 100%	Pretest	Posttest	Difference
QOL-PH	95	89	-6
QOL-MH	94	81	-13
MMSE	17	10	-7
GDS	2	6	4

Performance with sessions



Performance with objectives (EO = Enabling Objective)

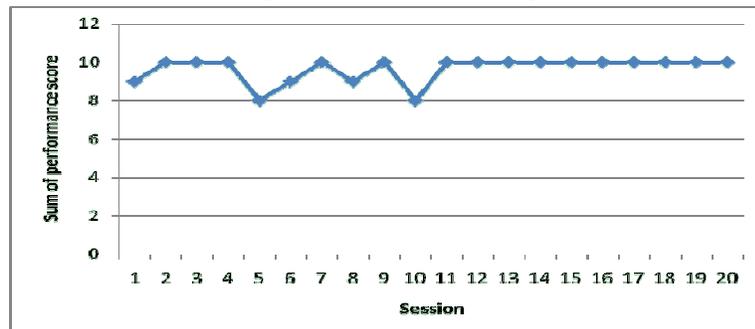


A3 was an 80 year-old male who attended all 20 sessions (100%). He actively participated in the program and initiated conversation with peers easily. He had high functioning performance in cognition and the social domain, but showed irrational emotion (i.e. angry) easily when he was frustrated (e.g. lost a game). Most of the time he could complete the tasks independently, and appeared ecstatic when he had a high achievement. He was easily distracted by outside objects in the beginning of the program but was able to keep his attention focused after the middle of the program. His perception of QOL had slightly increased in physical function and cognition. (See Table 20).

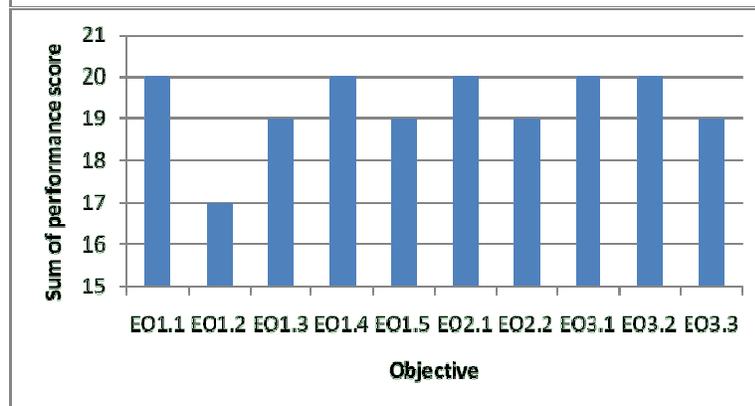
Table 20. Individual performance and QOL comparison on subject A3

Attendance: 100%	Pretest	Posttest	Difference
QOL-PH	72	75	3
QOL-MH	96	96	0
MMSE	25	27	2
GDS	0	0	0

Performance with sessions



Performance with objectives (EO = Enabling Objective)

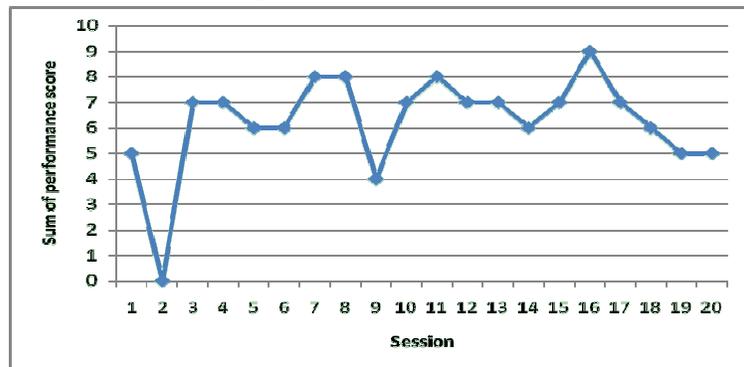


A8 was a 95 year-old male who attended all 20 sessions (100%). (See Table 21). He was cooperative with the program but had limited responses to his peers and staff in the group. He showed very short-term attention and the staff needed to cue him to join the discussion. He appeared fatigued very often, but had shown energy sporadically while he was making objects (i.e. cooking). His performance changed variously in cognition and thought functions, and he had low orientation to time. His perception of the QOL had decreased in physical health and mental health, but slightly increased in cognition and decreased in depression.

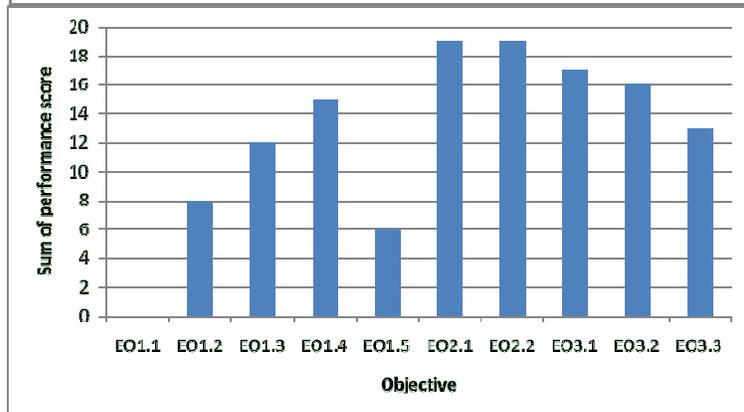
Table 21. Individual performance score and QOL comparison on subject A8

Attendance: 100%	Pretest	Posttest	Difference
QOL-PH	81	74	-7
QOL-MH	95	67	-27
MMSE	13	15	2
GDS	1	0	-1

Performance with sessions



Performance with objectives (EO = Enabling Objective)

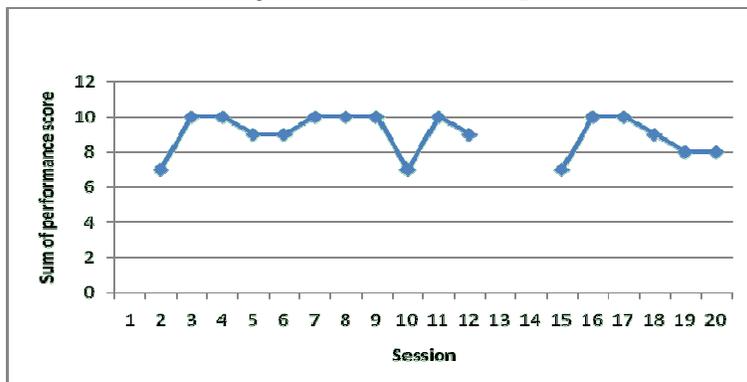


A9 was an 87 year-old female who attended 17 sessions (85%). In the beginning, she actively participated in the sessions, but she refused to come to the program in the middle sessions because she had a fight with her son. She recalled several good memories from her childhood but seldom mentioned her adult life. She appeared joyful while involved and interacted with others socially. She showed high functioning performance throughout the program (7-10 points). Her perception of the QOL increased in physical health and mental health and slightly decreased in depression, but decreased a lot in cognitive functioning. (See Table 22).

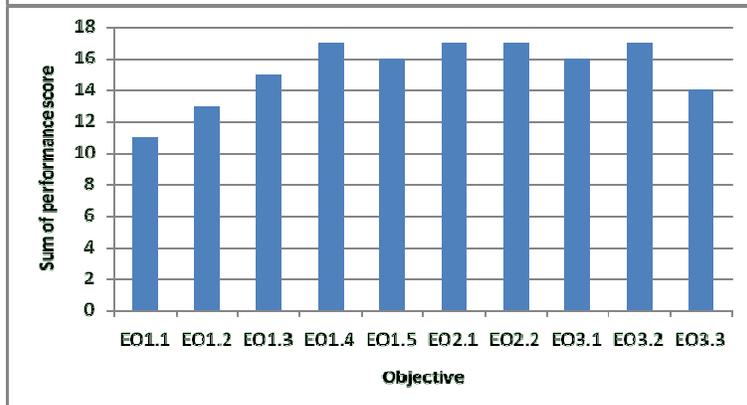
Table 22. Individual performance and QOL comparison on subject A9

Attendance: 85%	Pretest	Posttest	Difference
QOL-PH	52	65	13
QOL-MH	36	72	35
MMSE	19	14	-5
GDS	5	6	1

Performance with sessions



Performance with objectives (EO = Enabling Objective)

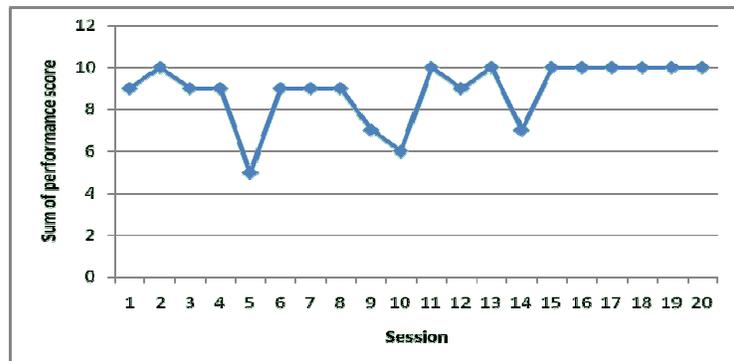


A10 was a 66 year-old female who attended all 20 sessions (100%). (See Table 23). She was cooperative with the program but easily distracted by outside stimuli (i.e. looked at the window frequently). She needed staff to work with her side by side on the task due to attention deficit. She sometimes refused to recall a past story and needed staff to guide her for sharing. Particularly, she was able to recall several plants' names at session 17 and 18. She appeared flat while involved but responded to others pleasantly. Her performance varied initially, but increased steadily toward the end. Her perception of QOL increased dramatically in physical and mental health, cognition, and slightly decreased in depression.

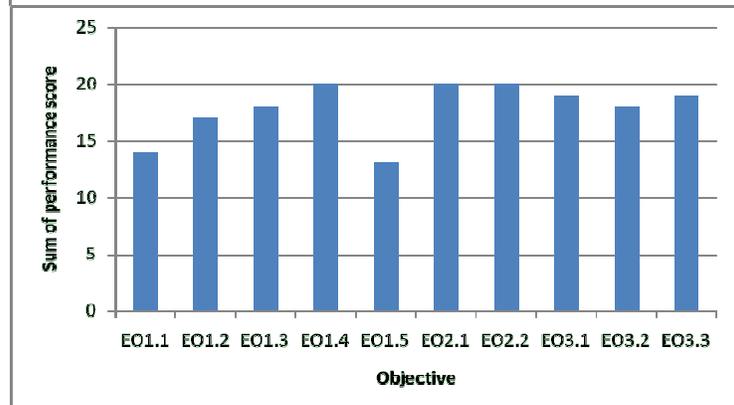
Table 23. Individual performance score and QOL comparison on subject A10

Attendance: 100%	Pretest	Posttest	Difference
QOL-PH	41	85	44
QOL-MH	55	86	31
MMSE	14	17	3
GDS	5	4	-1

Performance with sessions



Performance with objectives (EO = Enabling Objective)

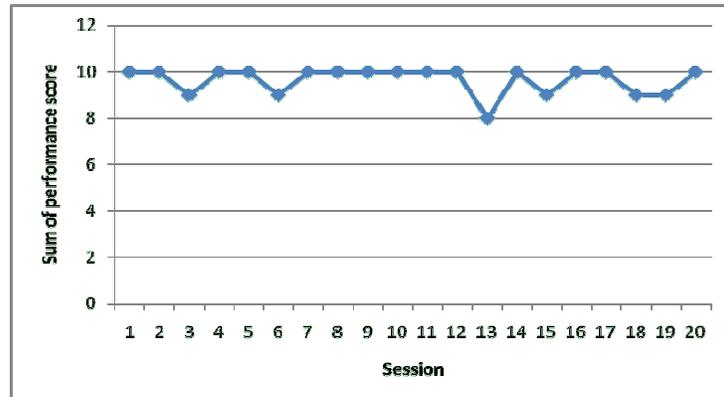


B1 was a 79 year-old male who attended all 20 sessions (100%). (See Table 24). He actively participated in the program, and interacted with peers socially. He was able to recall his past stories to the group, including his sorrow and regret for the past. He showed high levels of interest in every activity and appeared bright while involved, particularly when he played board games and with childhood toys. Initially his behavior was slightly aggressive when he was excited, but he was able to control himself when staff set limits later. His performance was steadily high among all sessions. His perception of QOL was maintained in physical and mental health, but was dramatically improved in cognition.

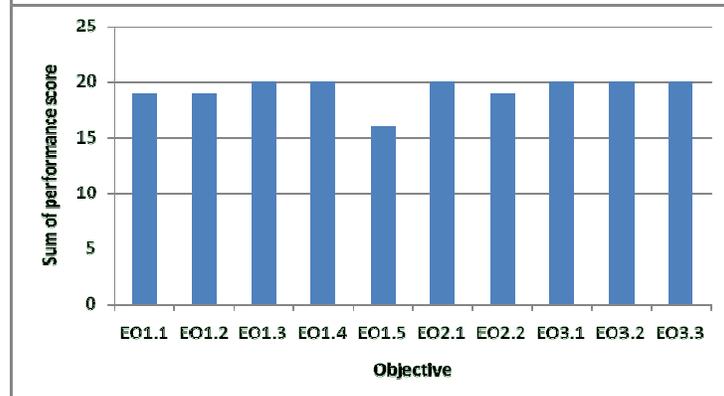
Table 24. Individual performance and QOL comparison on subject B1

Attendance: 100%	Pretest	Posttest	Difference
QOL-PH	87	86	-1
QOL-MH	92	92	0
MMSE	17	23	6
GDS	1	0	-1

Performance with sessions



Performance with objectives (EO = Enabling Objective)

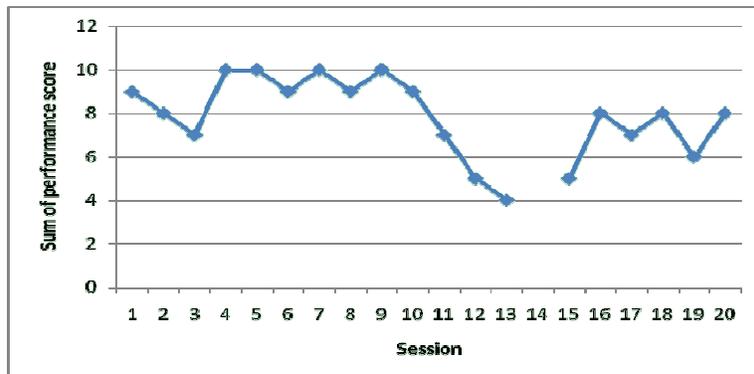


B3 was a 77 year-old female who attended 19 sessions (95%). Initially she actively participated in the program and interacted with peers socially. She appeared bright and joyful while involved. She started to complain about her physical pain (i.e. dental issue) at session 7, and the issue distracted her frequently. She even showed some delusive thoughts and withdrawn from social interaction. She needed staff to guide her to work on tasks. Her performance decreased seriously (mostly orientation functioning) in the later half, and she was absent once due to hospitalization. Her perception of QOL decreased a lot in physical and mental health, but her cognition improved by four points. (See Table 25).

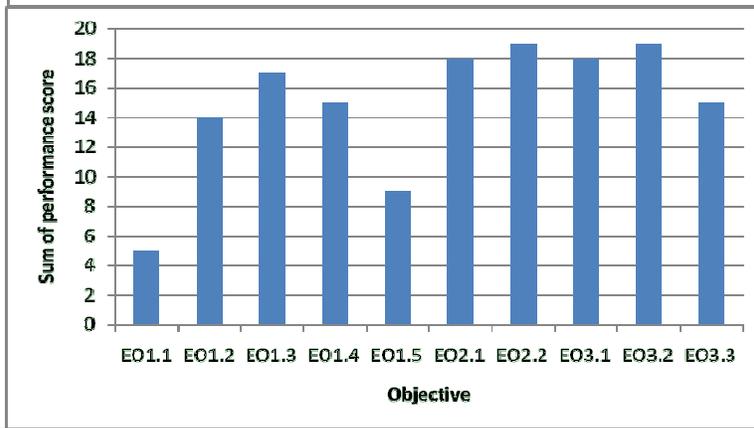
Table 25. Individual performance and QOL comparison on subject B3

Attendance: 95%	Pretest	Posttest	Difference
QOL-PH	52	29	-23
QOL-MH	68	53	-15
MMSE	13	17	4
GDS	1	1	0

Performance with sessions



Performance with objectives (EO = Enabling Objective)

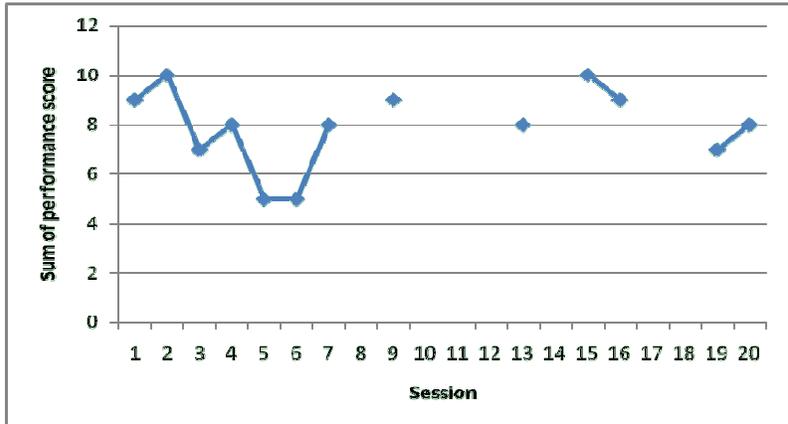


B6 was a 74 year-old female who attended 13 sessions (65%). She readily came to the program initially, but refused to come frequently after session 8. She actively participated in the session if she came and interacted with peers socially. She had significantly cognitive issues related to short term memory (e.g. stating the same story every 10-20 minutes). She was disoriented to time and showed delusive thought by misplacing her husband's death. It caused her to be very upset for several days and she refused to attend any activities in the facility. In the 5th week, the researcher spent one hour talking with her individually and she shared many stories about her husband that she had never shared in the group before. Although she missed several sessions of the program, she appeared bright, confident and engaged while involved. In particular, she showed great interest in the cooking activity (i.e. session 16 and 17), and was enthusiastic to teach peers how to make dumplings. Her performance was low in orientation and thought functioning, and the emotion expression was appropriate. Her perception of QOL decreased slightly in physical health and mental health, but cognition improved slightly. Based on observation, she was depressed in the middle of the program, but the posttest showed no change after the program. (See Table 26).

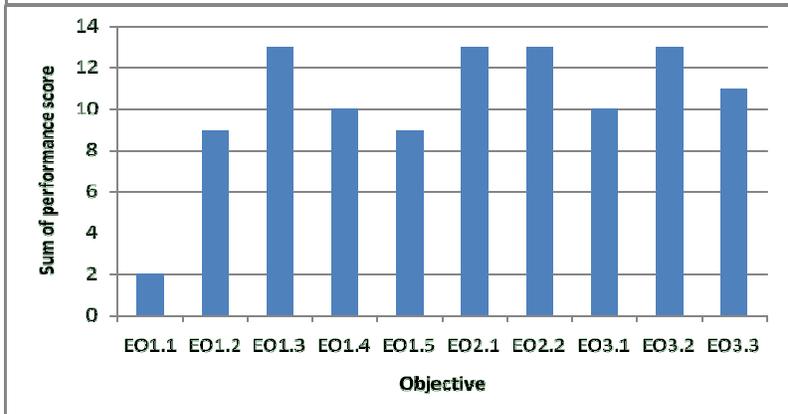
Table 26. Individual performance and QOL comparison on subject B6

Attendance: 65%	Pretest	Posttest	Difference
QOL-PH	91	88	-3
QOL-MH	96	87	-9
MMSE	10	12	2
GDS	0	0	0

Performance with sessions



Performance with objectives (EO = Enabling Objective)

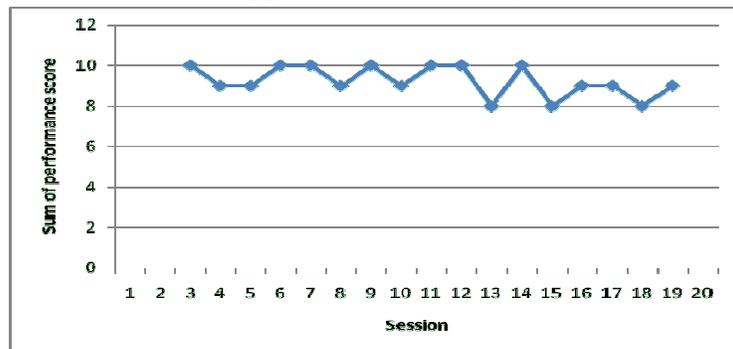


B7 was a 79 year-old female who attended 17 sessions (85%). (See Table 27). She actively participated in the program and interacted with peers socially. She was talkative and open, sharing her own story no matter whether it related to positive or negative events. She initially refused to perform some tasks excused by her illiteracy, but she was able to complete them after the staffs' encouragement and compliments. She appeared joyful and engaged while involved. Her performances were steadily high in most of the sessions, but low in the present time orientation. Her perception of QOL increased relative to physical health and had greatly improved on cognition, but her mental health decreased and depression worsened slightly.

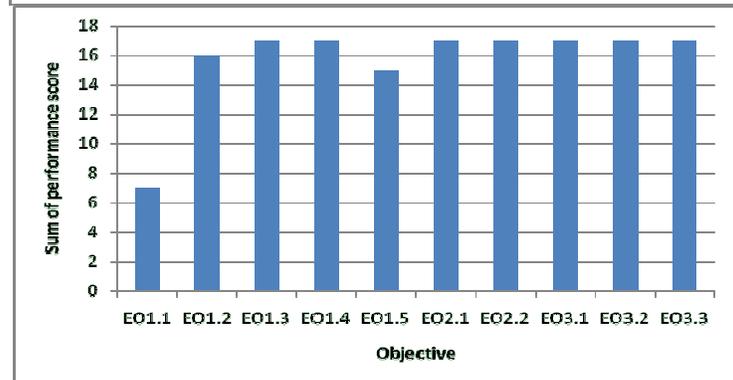
Table 27. Individual performance and QOL comparison on subject B7

Attendance: 85%	Pretest	Posttest	Difference
QOL-PH	10	17	7
QOL-MH	38	23	-15
MMSE	10	15	5
GDS	8	11	3

Performance with sessions



Performance with objectives (EO = Enabling Objective)

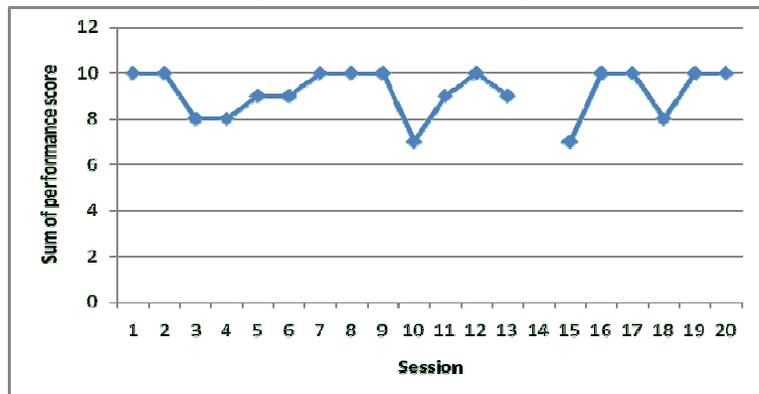


C3 was a 65 year-old female who attended 19 sessions (95%). (See Table 28). She actively participated in the program and interacted with peers pleasantly. She was able to recall several past stories including childhood events that she shared with the group. She showed high interest in object making (e.g. drawing, cooking, and planting) but needed reminding step by step. She appeared flat while involved but sporadically expressed her positive emotion, especially when she completed the tasks. Her performance varied slightly at times, but was high in all objectives. Her perception of QOL slightly increased in physical and mental health and great improved in cognition, but increased in depression.

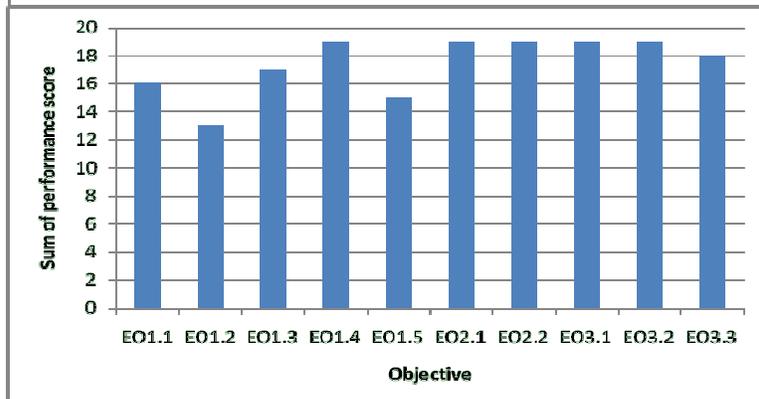
Table 28. Individual performance and QOL comparison on subject C3

Attendance: 95%	Pretest	Posttest	Difference
QOL-PH	87	88	1
QOL-MH	86	87	1
MMSE	15	19	4
GDS	0	3	3

Performance with sessions



Performance with objectives (EO = Enabling Objective)

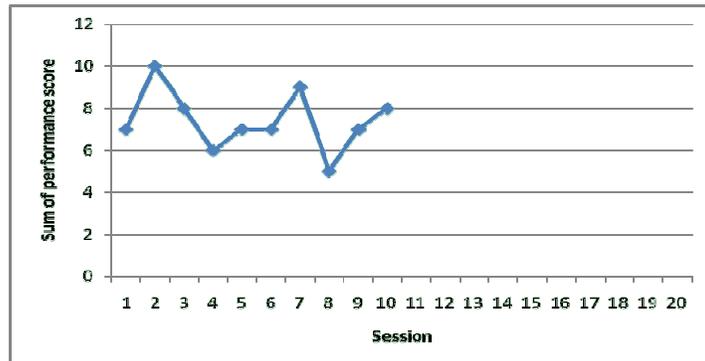


C4 was a 74 year-old female who attended 10 sessions (50%). She was cooperative with the program, but easily distracted and had a short attention span. She appeared joyful while involved but showed impatience by frequently interrupting other's talk. At session 8, she was quieter in the group and showed lack of initiation on the task. After session 10, she displayed some delusive thought and had aggressive behavior to peers. The researcher discussed these observations with the staff and determined to terminate her participation. (See Table 29).

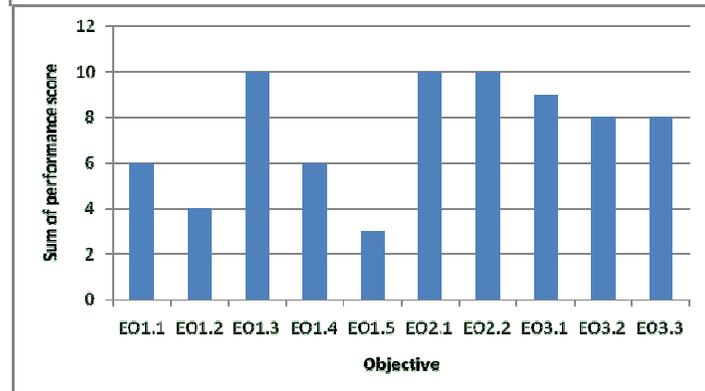
Table 29. Individual performance and QOL comparison on subject C4

Attendance: 50%	Pretest	Posttest	Difference
QOL-PH	90	-	-
QOL-MH	88	-	-
MMSE	16	-	-
GDS	1	-	-

Performance with sessions



Performance with objectives (EO = Enabling Objective)



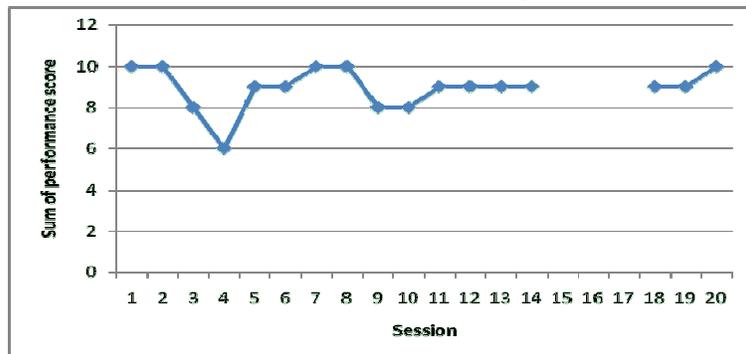
* Subject was withdrawn from the program in the 6th week due to the appearance of delusive behavior

C6 was an 81 year-old female who attended 17 sessions (85%). She actively participated in the program and interacted with peers pleasantly. She showed interest in the activities but needed encouragement to initiate. She appeared bright, engaged and joyful while involved. She was absent for three session due to sickness (flu). Particularly at session 15, she readily came to the program but was too frail to stay till the end. Her performance varied in the beginning, but steadily improved throughout to the end. Her perception of QOL increased slightly in physical health and had great improved in mental health, but her cognition decreased a lot. (See Table 30).

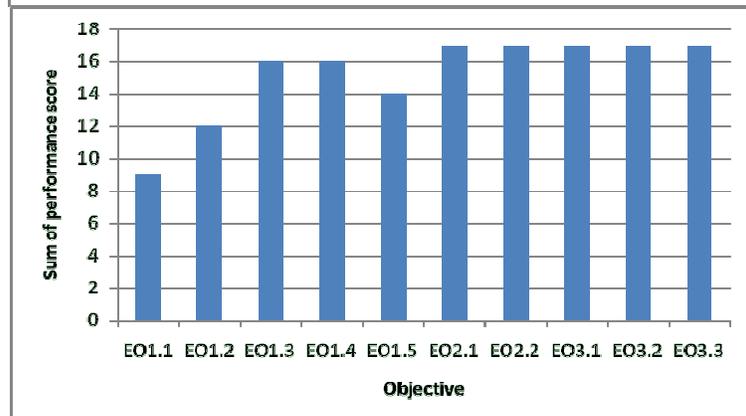
Table 30. Individual performance score and QOL comparison on subject C6

Attendance: 85%	Pretest	Posttest	Difference
QOL-PH	59	62	3
QOL-MH	60	90	30
MMSE	16	12	-4
GDS	4	4	0

Performance with sessions



Performance with objectives (EO = Enabling Objective)

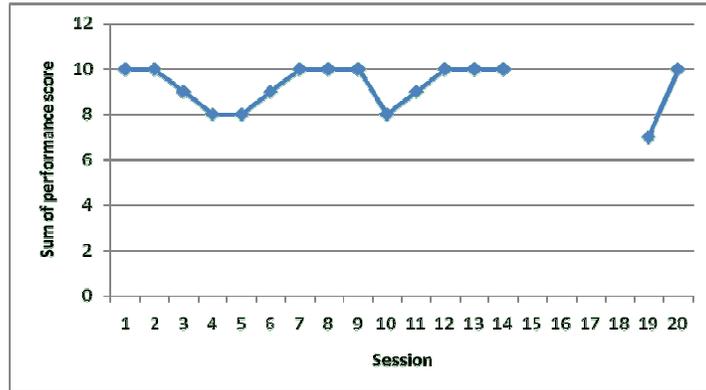


C8 was an 81 year-old male who attended 16 sessions (80%). He actively participated in the program and interacted with peers socially. He clearly recalled past events and was talkative during discussion. He showed high interest in each activity he attended, especially in music related activities. He appeared bright and confident when he stated his stories most of the time, but he sporadically displayed irrational emotion by showing depressed expression at sessions 4 and 5, and enthusiastic behavior at session 10 and 11. He was absent 4 sessions due to prostate surgery. He was eager to come to the session after the return and even had his urine bag with him. His performance was high over all the sessions excluding session 19. His perception of QOL decreased in physical health and slightly in mental health, but his cognition improved dramatically and almost reached the full score of MMSE (i.e. 29 out of 30). His depression decreased a little bit after the intervention. (See Table 31).

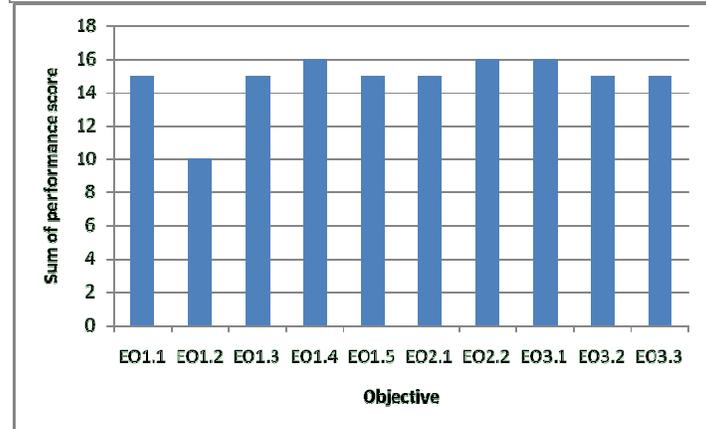
Table 31. Individual performance and QOL comparison on subject C8

Attendance: 80%	Pretest	Posttest	Difference
QOL-PH	88	69	-19
QOL-MH	89	87	-2
MMSE	24	29	5
GDS	1	0	-1

Performance with sessions



Performance with objectives (EO = Enabling Objective)

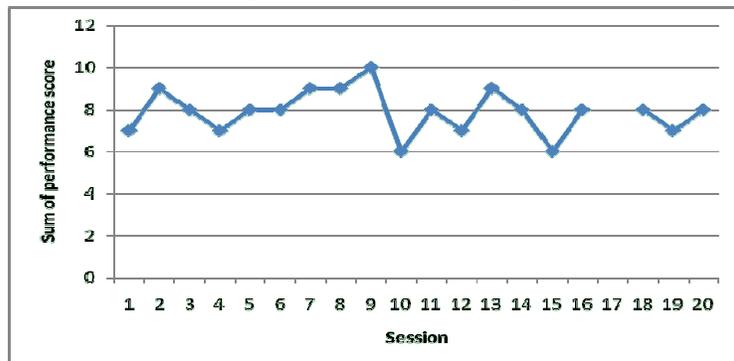


C11 was a 75 year-old male who attended 19 sessions (95%). He was cooperative with the program, but had limited participation due to physical illness. He gradually increased involvement in the first half of the program by sharing his past stories, but showed unstable responses in the second half. He appeared flat while involved, but sporadically showed brightness in certain activities, such as singing. He had limited interaction but was responsive to others pleasantly. His performance varied and had lower scores in the orientation function. His perception of QOL was worse among the overall indicators. (See Table 32).

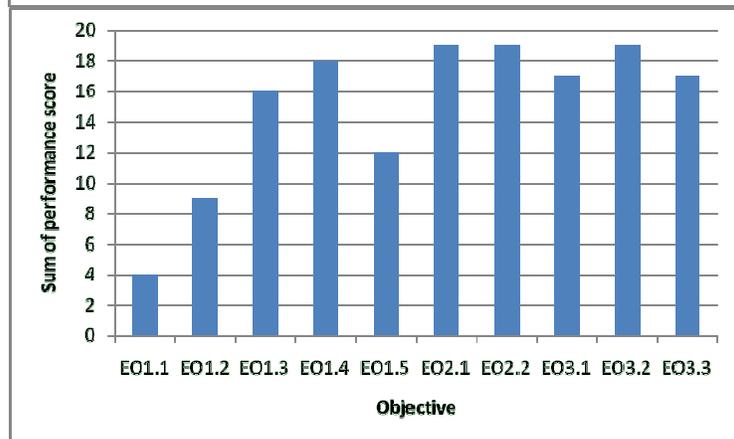
Table 32. Individual performance score and QOL comparison on subject C11

Attendance: 95%	Pretest	Posttest	Difference
QOL-PH	70	32	-38
QOL-MH	82	48	-33
MMSE	13	8	-5
GDS	2	7	5

Performance with sessions



Performance with objectives (EO = Enabling Objective)

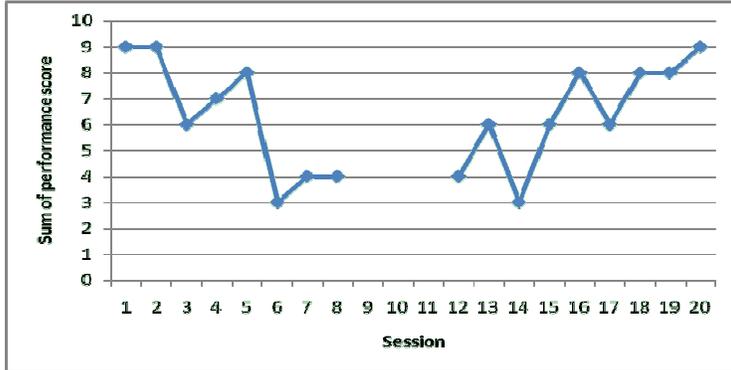


C12 was a 70 year-old male who attended 17 sessions (85%). He showed very low interests in the beginning of the program, and needed encouragement to participate. He was uncomfortable with sharing his own story during the first three sessions but started to recall a few events at session 4 and 5. He frequently complained that his past life was a failure and poor, and he was embarrassed by his illiteracy. After session 5, he demonstrated some delusive thoughts and had a depressed mood. He appeared to have low confidence while involved and limited interaction with others. He refused to come to the group by stating that he had no talent in the middle of the program but stayed around. After observing a few sessions, he started to join the group with the staff's encouragement. He gradually increased his involvement and was cooperative with the program by completing tasks with assistance. He was able to share more of his own stories and decreased the complaints about his past. Particularly, he showed high interest in horticulture, and volunteered to water and check the plants frequently. His performance decreased in the beginning and increased at the end. He demonstrated lower functioning in orientation. His perception of QOL showed a slight change in physical and mental health and cognition, but had a great decrease on depression. (See Table 33).

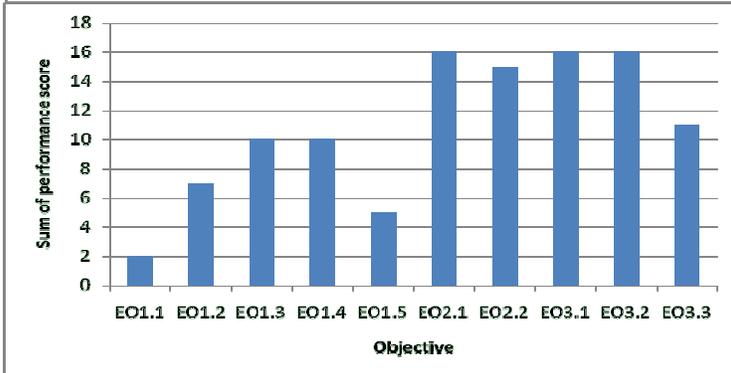
Table 33. Individual performance and QOL comparison on subject C12

Attendance: 85%	Pretest	Posttest	Difference
QOL-PH	68	65	-3
QOL-MH	90	91	1
MMSE	14	15	1
GDS	7	3	-4

Performance with sessions



Performance with objectives (EO = Enabling Objective)

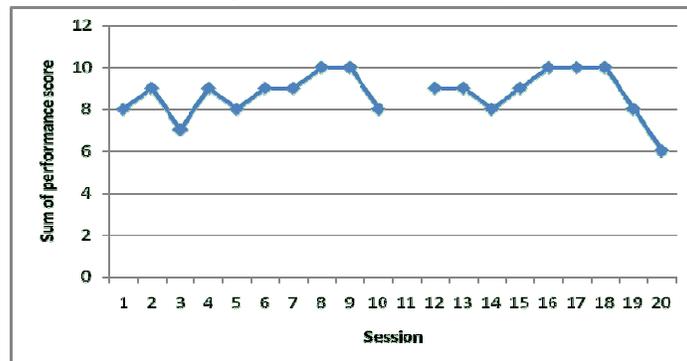


DI was an 80 year old female who attended 19 sessions (95%). She actively participated in the program, and interacted with peers socially. She was talkative and was willing to share many past events in the group. She appeared bright and enthusiastic while involved. However, she was difficult to invite to participate in the sessions after the middle of the program, although she always had high performance in the program. She complained about a distracted peer but was comforted by a staff's explanation. Her performance was high overall, but slightly decreased toward the end. Her perception of QOL increased slightly in mental health and physical health, and had great improvement in cognition. (See Table 34).

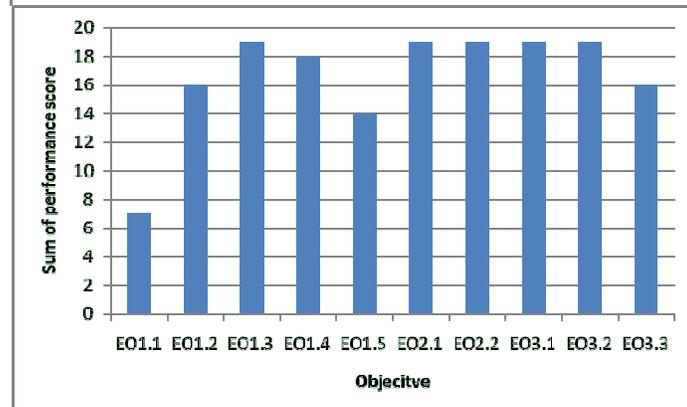
Table 34. Individual performance and QOL comparison on subject D1

Attendance: 95%	Pretest	Posttest	Difference
QOL-PH	75	83	8
QOL-MH	93	99	6
MMSE	17	23	6
GDS	0	0	0

Performance with sessions



Performance with objectives (EO = Enabling Objective)

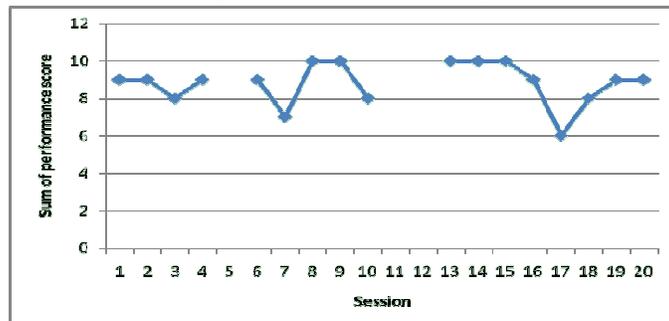


D3 was a 77 year-old female who attended 17 sessions (85%). She actively participated in the program and interacted with peers socially. She had a short attention span and was distracted by others easily. She was talkative and shared many past stories in the group. She appeared bright and confident while stating her own story. She often excused her absence by saying she had a headache. Encouragement to come to the group was needed, but she showed high interests in the movie session by readily coming when invited. She complained about sleeplessness at night frequently, but was unable to solve the problem. Her performance was high during all sessions and overall objectives. Her perception of QOL was worse among the overall indicators. (See Table 35).

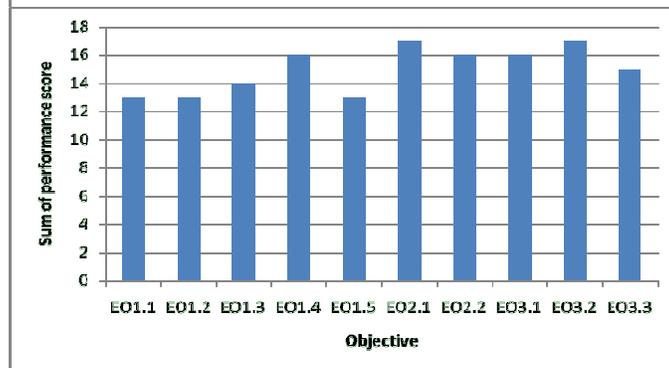
Table 35. Individual performance and QOL comparison on subject D3

Attendance: 85%	Pretest	Posttest	Difference
QOL-PH	93	69	-25
QOL-MH	90	46	-44
MMSE	22	18	-4
GDS	2	9	7

Performance with sessions



Performance with objectives (EO = Enabling Objective)

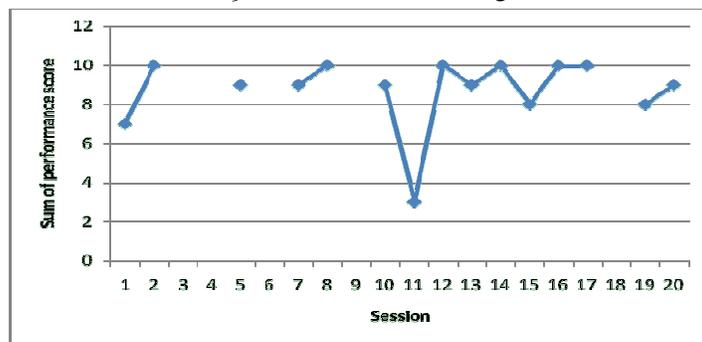


D5 was a 75 year-old male who attended 15 sessions (75%). He was cooperative with the program, but was absent 5 sessions due to family visits. He was actively involved in the session and interacted with peers socially. He was talkative and able to share several past stories with the group. He showed high interest in several activities, particularly in music, and appeared bright and confident while involved. His performance was high overall excluding session 11 due to being late for the session. Occasionally he showed a deficit on thought function as detached speaking. His perception of QOL increased in physical and mental health, but the cognition decreased dramatically and the depression greatly increased. (See Table 36).

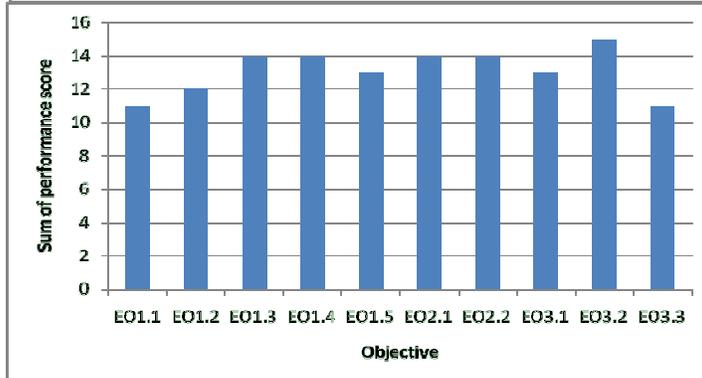
Table 36. Individual performance and QOL comparison on subject D5

Attendance: 85%	Pretest	Posttest	Difference
QOL-PH	50	73	23
QOL-MH	69	76	8
MMSE	24	19	-5
GDS	6	9	3

Performance with sessions



Performance with objectives (EO = Enabling Objective)

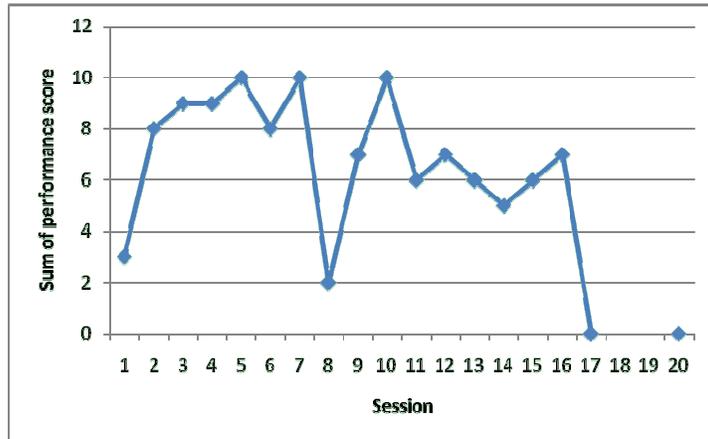


D8 was a 78 year-old female who attended 18 sessions (90%). She was cooperative with the program, but had limited interaction with peers initially. She was quiet, and encouragement to talk was needed in the beginning, but a few sessions later she actively participated in the group. She appeared flat while involved but sporadically laughed or cried due to some specific reminiscence. In particular, she cried abruptly in the initial sessions because she recalled the death of her grandson, but she was able to be calmed by a leader's consolation and reduced the frequency after all. It was touching that after the first week; she waited for the staff to pick her up and appeared pleasant, even when she was sick. Although her performance gradually increased in the first half of the program, it dropped suddenly at session 8 and was dramatically decreased to the end. In the later few sessions, she insisted to come but was too frail to be able to focus on the activity and kept falling asleep. She also showed some delusional speech. The leader was told that she had urinary-tract infection and her diabetes made it even worse. Finally, she was absent from the posttest due to hospitalization. (See Table 37).

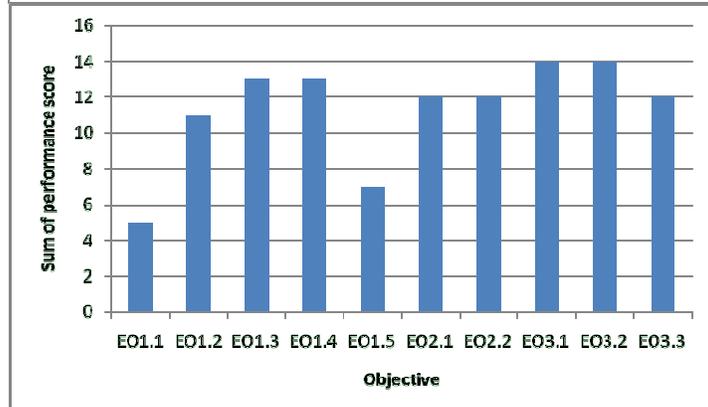
Table 37. Individual performance and QOL comparison on subject D8

Attendance: 90%	Pretest	Posttest	Difference
QOL-PH	66	-	-
QOL-MH	80	-	-
MMSE	18	-	-
GDS	0	-	-

Performance with sessions



Performance with objectives (EO = Enabling Objective)



* Subject was dropped out of the posttest due to hospitalization

Summary of the Results

The quantitative analysis results showed that there were significant mild to moderate intercorrelations within the subjective and objective indicators of QOL. The subjective indicators of QOL (i.e. physical health, mental health and depression) had significant correlations with each other at pretest, posttest, and the changed score; however, the objective indicator of QOL (i.e. cognition) only had significant correlation with one of the subjective indicators (i.e. depression) at the posttest. The result revealed that these four indicators should be considered as a complex of QOL measurement. They should be viewed as a compound variable to detect the effect of the intervention, although the objective indicator has a weak and unstable relationship with the subjective indicators.

Based on the above inference, the effect of the intervention (i.e. LRP-TW) was tested by three measurements that are composite of four indicators. The result showed that there was neither a statistically significant difference between the treatments nor differences between settings on the QOL on the posttest adjusted by the pretest. This study failed to find a statistical benefit attributed to participating in the LRP-TW by the treatment group.

The qualitative results explored the phenomenon for treatment implementation and provided more detail of the impact on the treatment group. The attendance rate decreased in the second half of the program, and two subjects were removed from the study near the end. The performances of tasks of orientation, emotion and thought functioning overall were high during sessions, but slight changes were revealed during a few sessions. Comparing the performance across the ten enabling objectives, the orientation and

thought functions had lower scores than the emotion functions. Regarding individual performance, each participant showed varying progress throughout the program. Most progressions of participants were rationally consistent with the changed QOL scores, but a few were not. The observation from the researcher also indicated that the performance might be influenced by interest in the topic and the activity. However, fluctuations in health dramatically influenced subjects' performance and attendance. It is difficult to assure full attendance by each participant because most of them have multiple chronic illnesses or acute diseases in addition to the AD.

In brief, the LRP-TW did provide an opportunity for the participants to recall and share their past life events with others. Most of them engaged in the group by interacting and responding to others pleasantly. They also completed the tasks (e.g. singing, cooking, and planting) with or without assistance while involved in the activities.

CHAPTER V

Discussion and Conclusion

The purpose of this study was to examine the impact of the revised Life Review Program (LRP-TW) on long term care resident diagnosed with mild to moderate Alzheimer's Disease (AD) in South Taiwan and to measure the effects it has on their Quality of Life (QOL) defined as a multi-dimensional phenomenon with interrelated subjective and objective components. This chapter presents a discussion of the findings, and highlights the contributions of this research to the existing body of knowledge based on two research hypotheses: (a) H1: There are moderate to strong correlations between subjective indicators and objective indicator of QOL, and (b) H2: Participation in LRP-TW results in positive changes in the QOL scores measured by a multi-dimensional complex measurement. The implications of the findings for future studies are described in the conclusion.

Summary of Results and Discussion

The present study initially recruited 37 subjects from four facilities in South Taiwan, and 34 subjects completed the study throughout four months. Seventeen subjects in the treatment group participated in a 10-week recreational therapy program (LRP), and another 17 subjects in the control group did not attend the program but were offered the facilities' basic activities. The LRP is an activity-based life review intervention intended for long term care residents with mild to moderate cognitive impairment (e.g. Alzheimer's disease). It was adapted by the researcher for Taiwanese culture. The

program was designed to assist the participant in achieving ego-integrity through the recall of past events and in being convinced to recognize the significance and meaningfulness of his or her life. The outcome of the program is presumed to slow the decline in cognitive, emotional and social functioning, and to reflect enhanced perception of QOL. The QOL measurement was composed of three subjective indicators and one objective indicator, specifically, perceived quality of life (i.e. perception of physical health and mental health), psychological well-being (i.e. depression), and objective behavior (i.e. cognition).

Intercorrelations between Subjective and Objective QOL Indicators

Study results showed that there are significant intercorrelations between the subjective and objective indicators of QOL. Most importantly, the three subjective indicators of QOL (i.e. perception of physical health, perception of mental health, and depression) showed moderate to strong, positive correlations to each other, and to subjects' psychological judgment of life quality. The results illustrated that increases in perception of physical health coincided with increases in perception of mental health and with the decreases in depression. Health is one of the major concerns for QOL among an aging population (Gabriel & Bowling, 2004; Dröes et al, 2006). Poor health limits the ability to proceed with daily activities, and it might induce negative affects and reduce social interaction. For example, subject B3 was distracted with a toothache in the middle of the program. She was depressed and had limited interaction with peers during the period of sickness. According to observations from the pilot and present study, sickness

was the major reason for the subjects to ask to leave, and interfered with their performance dramatically during the program.

Second, the objective indicator, cognition, failed to show a significant relationship with the perception of physical and mental health, but showed a significantly negative relationship with depression at the posttest ($r=-0.408$, $p<0.05$). This suggests that cognitive functioning is related to changes in psychological well-being, but is not associated with perceived quality of life (i.e. perception of physical and mental health). In particular, Taiwanese elders may assume that poor health indicates physical impairment/disability (e.g. hemiplegic, amputation, or vision impairment) regardless of the degree of cognitive impairment, a major symptom of AD. Actually, cognitive impairment might cause problems in daily activities, and be accompanied with a burst of psychiatric features, such as decreased interest in personal and social activities, flattening of affect/ apathy, and emotional or social withdrawal (Reisberg et al., 2005). Thus the results revealed that higher cognitive functioning appears to be associated with lower depression in this sample.

In general, intercorrelations between the subjective indicators and the objective indicator of QOL, was confirmed. It is impossible to clearly separate objective and subjective QOL, and “it is a relative rather than absolute distinction” (Lawton, 1999, p.172). Therefore, this study supports that QOL measurements need to be multi-dimensional comprising subjective and objective indicators. These indicators may overlap one another and be dependent on each other in contributing to overall QOL. Each indicator of QOL should not be examined separately, and both subjective and objective

indicators need to be viewed as a compound when individual QOL is estimated, particularly for people with AD. It also provided the basis for the second hypothesis that the effect of the intervention on QOL should be measured by a compound of subjective and objective indicators, such as perceived QOL, psychological well-being, and behavioral competence.

Effects of LRP-TW on QOL of senior residents with mild to moderate AD

According to Lawton's conceptual model of QOL, the objective environment (e.g. intervention and residential facility) is a sector of QOL with three additional sectors (i.e. received QOL, psychological well-being, and behavioral competence). Two independent variables, intervention group and different settings, operated in this study specifically to discover whether the intervention (i.e. LRP-TW) can positively change the subject's perception of QOL. Although this study focused on the effect of the intervention, the setting may act as a confounding variable and it is necessary to test for differences among facilities as a factor influencing the outcomes. The results showed that neither the intervention nor the setting has significant effects on QOL for this sample. However, the effect of the variable, SETTING, approached to the statistical significance closely ($F(12,63)=1.677, p=0.094, \text{partial } \eta^2=0.059, \text{observed power}=0.795$) but the result showed no statistically significant interaction effect between the settings and the treatments. It may suggest that different facilities may contribute to the changes of subjects' perception of QOL regardless of the interference with the interventions, although this study tried to carefully match the quality of facility in advance.

It is regrettable that LRP did not result in significant changes, decreased or increased, for perception of QOL in this sample of senior residents with mild to moderate AD. To compare their adjusted mean at posttest, three indicators of subjective QOL (i.e. perception of physical health and mental health, and depression) showed worse performance in the treatment group than in the control group, but the indicator of objective QOL (i.e. cognition) showed better performance for the treatment group than the control group. This strange result might be a short term outcome of the LRP when mental functioning of older adults is enhanced because life review reminiscence is a return to consciousness of past experiences, and likely to be reflected in the cognitive level of an individual (Butler, 1963). The study of Wang (2007) did find significant improvement on MMSE scores in subjects who had received group reminiscence activities. The Huang, Li, Yang, & Chen (2009) study showed no significant improvement on cognition (i.e. MMSE score) due to a small sample size (N=10). However, too few studies have tested the effect of life review or the reminiscence approach on cognition for people with cognitive impairment. In particular, cognitive function is an important indicator of disease progress for people with AD or dementia, and more effort is needed to explore the relationship between cause and effect.

Small sample size may contribute to failure to reach significance at $\alpha < .05$

Although many studies had shown that life review reminisce effectively improves the participant's subjective QOL, such as self-health perception (Wang, 2004) life satisfaction (Haight, 1988; Haight, 1992; Haight, Michel, & Hendrix, 2000; Chiang, Lu,

Chu, Chang, & Chou, 2008) and psychological well-being (Hirsch & Mouratoglou, 1999; Tabourne, 1991), and decreased depression (Haight & Dias, 1992; Haight, Michel, & Hendrix, 2000; Wang, 2004; Wang, 2005; Lee, 2005; Wang, 2007) for older adults, several studies (Stevens-Ratchford, 1992; Reddin, 1996; McKenzie, 2004; Chao, et al., 2006; Wang, 2007; Wang, Yen, & OuYang, 2009; Huang, Li, Yang, & Chen, 2009) remained uncertain due to results that were not statistically significant, including this study. Small sample size may be the predominant limitation on statistical confidence in studies with vulnerable population groups that must be managed in small numbers. Several studies (Stevens-Ratchford, 1992; Reddin, 1996; McKenzie, 2004; Chao, et al., 2006; Huang, Li, Yang, & Chen, 2009) were conducted with fewer than 37 subjects total (ranged from 10 to 37) for two or three groups (e.g. treatment, control and/or comparison group). Originally, a total sample size (N=54) for the multivariate analysis of this study was estimated of this study under a moderate effect size (power=0.5) based on the pilot study, but the optimal number was not reached in subject recruitment and due to attrition.

Subject recruitment and retention while implementing this study were challenges and resulted in the small sample size. It was difficult to recruit cooperative facilities for the researcher, initially due to lack of a personal connection with the agency and lack of awareness of recreational therapy in Taiwan. Four facilities (out of 11 long term care facilities) were willing to cooperate in this research because they had experience cooperating with other scholars for research, and they were aware of this new profession, recreational therapy. However, other facilities refused to cooperate because they had never heard of recreational therapy, and may not have been able to provide the staff and

space. The results were the same when the researcher tried to recruit individual subjects. Several potential subjects showed less interest in attending extra programs outside of their routine, and some also had a suspicious attitude when the researcher approached them, even after the staff introduced the researcher. Therefore, it is important to enhance the willingness to cooperate for future studies; for instance, by offering complete training courses of the program for their staff so that they can continue implementing the intervention after the study. How recreational therapy is perceived as a recognized modality in long term care facilities will affect the value of the offers for training.

Additionally, absence of official diagnosis of mild to moderate AD is a challenge in recruiting, because most long term care residents had lost track of the progression of AD, or didn't have an official diagnosis from the physician. Thus, only 37 subjects (out of 117) were recruited for this study after the initial invitation to participate and the screening test for specific inclusion criteria: (a) 65 years of age or more, (b) MMSE score of 10-23 in the current medical record, (c) absence of severe disruptive behavior, (d) screen test [CDT] score equals or below 10; (e) capable of meaningful conversation; and (c) residence in the cooperative facility. Retaining subjects in this study revealed another challenge, the instability of older adults' health status.

Three subjects (8.1%) withdrew from the study because of hospitalization for acute symptoms (e.g. urinary-tract infection) other than AD. Even consistent program participation in the treatment group was severely influenced by the participant's health condition. Only five subjects (26.3%) were able to attend all 20 sessions, and five subjects (26.3%, including three dropped out subjects) were sick or hospitalized (e.g.

severe cold, prostate surgery and toothache) during the program. Even though few studies (Wang, 2007; Wang, Yen, & OuYang, 2009) retained large sample sizes (ranged from 77 to 102), characteristics of the population (seniors with dementia) and concern about sensitivity of the instruments affected confidence in results for parts of their studies.

Other than small size, two major issues were generalized from this study, research design and intervention modality were compared to several past studies (Stevens-Ratchford, 1992; Reddin, 1996; McKenzie, 2004; Chao, et al., 2006; Wang, 2007; Wang et al., 2009; Huang et al., 2009).

Issue of research design

The design factors may contribute to the resulting lack of statistically significant findings but inform future research. Issue one is related to the research design. The pre- and posttest design does not include continuous outcome measurements during the intervention, and several limitations of the standard instrument (e.g. learning effect) are threatened by repeating the evaluation within a short time interval. In particular, elders in stages of AD often show dramatic fluctuations in their abilities and moods, good days and bad days (Tabourne, 1995). Thus this study also collected qualitative data (i.e. individual observation notes and performance measurements for each session) through the subjective observations of the professional judgment from the researcher, and to supply missing information regarding the quantitative findings. The qualitative results of the current study revealed remarkable fluctuation for several subjects in individual performance in cognition, emotion, and social function across sessions, possibly attributable to the progressive degeneration of the disease and the rapid deterioration in

the health status (i.e. sickness) (Goldwasser et al., 1987; Wang, et al., 2009). A few studies also adopted a mixed method (i.e. McKenzie, 2004; Lee, 2005) or qualitative study only (i.e. Chao, Chen, Liu, and Clark, 2008) for outcome measurement. Their qualitative results revealed positive feedback (e.g. effectively trigger memory) of the life review reminiscence intervention from the individual interview or focus group by their intervention participants, but it lacks comparison to a control group who has not attended the intervention. Therefore, especially for this population, it might be necessary to measure the outcome of the program on a daily basis, or at least lengthen the evaluation period by allowing for several repetitions of measurements at different time points. The collected data may need to be obtained from various resources, such as from clinical charts, observations, interviews, focus groups, standard measurements, and other approaches.

Nevertheless, the Wang study (2007) revealed that the sensitivity of the instrument might also play a role in the finding. Her study adopted two different instruments (i.e. Geriatric Depression Scale short form [GDS-SF] and Cornell Scale for Depression in Dementia [CSDD]) to test the same effect (i.e. depression) of group reminiscence therapy, but only the scale of CSDD found a significant difference in the score of depression. Although the GDS-SF is the most commonly used test for depression in older adult in research or clinical settings, Wang's study indicated that the CSDD might be a more sensitive measurement for Taiwanese elders with dementia or AD. This might partially explain the lack of significant results in the current study. Another issue related to the quantitative measurement was raised while conducting the pre- and posttest.

A few subjects were impatient with the long questionnaire, although the interviewer tried to limit every interview to less than 30 minutes.

Issue of intervention modality

The second issue indicated by several studies that “intervention modality” is a controversial issue since the life review and reminiscence interventions involve a wide variety of formats, including the intervention dose, group or individual format, and the type of activity. The present study adopted the program format for life review from Tabourne (1995) but shortened the duration from 12 weeks to 10 weeks, with two sessions per week for each life theme/topic. Although there is no direct evidence to indicate an exact dose number for the life review and reminiscence interventions, an average of 8 to 16 sessions consecutively within eight weeks to four months could be found in several Taiwanese studies, and sessions were typically conducted at once a week intervals. According to the attendance record of the treatment group in this study, the number of attendees dropped suddenly in the latter half of the program (the 10th session) and slightly bounced back near the end of program. It is possible that the participants can only tolerate the intensity of the program for a short period and may need a break after an intense stimulation. Thus, to shorten the duration of the program to within six to eight weeks might be suggested. However, research addresses problems for this population’s retaining information that is not reinforced (Lee, 2005). Therefore, it would be necessary to repeat the program over and over but have a short break between the trials.

Additionally, the impact of meeting with the group once-a-week or twice-a-week still remains unclear because a notable behavior or pattern was not shown by the subject’s

performance in this study, but Huang, Li, Yang, and Chen (2009) strongly recommended that a twice-a-week program structure for Taiwanese elders is needed. Tabourne (1995) also suggested that the LRP should be held twice a week, although McKenzie (2004) and Lee (2005) adapted the LRP to weekly sessions, but Lee concluded that weekly sessions do not reinforce learning in this population. Based on the experience of this study, to meet with the participants twice a week is necessary for establishing rapport and group cohesion, particularly if the leader is an outsider of the facility.

Although Haight and Dias (1992) found that a structured process with an evaluative component, performed on an individual basis is the most efficient modality, several studies (Chiang, Lu, Chu, Chang, & Chou, 2008; Chao, et al., 2006; Wang, 2007) also showed that a group modality is an acceptable method among Taiwan's elders. A small group format was used to encourage social interaction and reinforce a sense of belonging among participants. The observations provided evidenced that most subjects could interact with peers easily in the group, and some subjects even gradually improved their social ability by initiating greetings with peers and the program leader, checking with absent peers, or actively providing assistance to peers. Corresponding to Chao's (2006) findings, the group format provides the participant with an opportunity to enhance their interactions within and outside the group, and to create a supportive atmosphere. Actually, social bonding is a major function of group reminiscence which may help the participants express and release their feelings, and even to confront negative emotion via the feedback or confirmation from others (Cappeliez, Rivard & Guindon, 2007). However, it may require three or four sessions for the group to enter a working phase

represented by each member demonstrating greater interaction and response without encouragement from the group leader (Chao, et al., 2006).

To distinguish from other modalities, LRP-TW is an activity-based intervention that consistently applies a variety of leisure activities as tools to trigger each participant's past leisure experiences and related memories. People experience leisure, the condition of heightened intra-individual absorption in a variety of formats and it serves many functions. The LRP-TW attempts to invoke those memories and skills through the recapture of some specific activities, and to have the participant reintegrate these experiences and resultant life strengths for present use. The qualitative data revealed that most of the participants easily engaged in the group experience, interacting and responding to others pleasantly. Each participant could comply with the leader's request and complete the tasks (e.g. singing, cooking, and planting) with or without assistance. However, the observations also indicated that interest in the topic and personal preference for the activity influenced their performance. Studies (McKenzie, 2004; Lee, 2005) have consistently pointed out that the selection of activities for LRP should be culturally relevant. In addition to the cultural perspectives, individual interest, ethnic background and personal history are also keys to the success of this intervention (Chao et al., 2008). Although the researcher had investigated each participant's leisure interests and personal background and tried to embed them in the program, it was impossible to match every participant's leisure interests and experiences for each session. Obviously, some participants behaved enthusiastically when the session was his/her favorite, and some may have behaved indifferently during the same session. However, the qualitative results

also revealed that some types of activities (e.g. childhood toys and cooking) can evoke most participants' interest and they had higher performance while involved. An activity-based approach was not common in the studies conducted in Taiwan, with a discussion-based format as the prevalent type of group reminiscence (Wang et al., 2009; Wang, 2007; Chao et al., 2006; Chiang, 2008). In their studies, the intervention used a discussion-based modality and applied multiple evocative materials (e.g. past photos, albums, radio programs, newspapers, food, or movie posters) as triggers. Only Hang, Yang, and Chen (2009) used an activity-based approach and applied one type of activity, cooking lessons, to stimulate the senses of the seniors in order to evoke their memories by food. Due to a lack of comparison studies, it remains unclear which of the two modalities is more effective but both were suggested by the literature. However, this pilot study and formal study found that the subjects are enthusiastically engaged in the active leisure choices (e.g. playing with toys or making projects) rather than the just talk format.

In summary, a better intervention strategy for LRP-TW might use a variety of leisure activities that should match individual interests and past leisure experiences, if the information is available. Personal preferences of leisure interest and background information about leisure experience are important for the program design as well as to embed the activities in the theme/topic. Regarding issues of attendance, a bi-weekly LRP-TW might be shortened into six to eight weeks with a short break (e.g. one week), then repeat the program several times. Program repetition would be ideal for each participant to go over all life themes over several trials with different types of leisure choices of activities. To account for fluctuating health and functioning, outcome evaluations need to

include information collected on a daily basis by daily chart or progress notes, or at least to repeat the evaluation several times with different time points.

Based on this study, a mixed method study including qualitative and quantitative data collection is highly recommended to explore the relationship between intervention and its effects, particularly the usage of qualitative research approaches. Systematic observation and constant data collection is needed for accurate feedback from the participants and for complete, reliable data on their performance, and it can provide more information for strengthening the intervention for this population. For example, one type of qualitative research approach, phenomenology, is recommended to explore one or more individuals' experiences of the LRP-TW. The researcher collects data (e.g. individual interview, focus group, or videotaping/tape-recording during the intervention) from several individuals and depicts their experiences of the program. Through the content analysis of participants' statements, the researcher can search for significant statements that reflect their subjective view of quality of life. Besides, the information from videotaping/tape-recording may also provide an essential structure of the life review approach that reveals the relationship between the evoked memory and the type of activities or strategies. It is important for the recreational therapist to select appropriate leisure activities as a tool which can effectively evoke individuals' past memory and life experience.

Conclusion and Implication for Future Study

Based on Lawton's theory, a multi-dimension QOL measuring model has been operationalized in this study to test the effect of a revised LRP for senior residents with mild to moderate AD. The results revealed significant intercorrelations between the subjective indicators (i.e. perceived quality of life and psychological well-being) and the objective indicator (i.e. behavioral competency) of QOL. Based on this assumption, meaningful QOL measurement comprises subjective and objective indicators and should be considered the model for measuring the complex construct of QOL for individuals with mild to moderate AD. This study failed to yield a statistically significant result while testing the impact from the objective environment dimension of QOL (i.e. LRP and facility type). Although several studies had shown that life review reminiscence had effects on several dimensions of individual QOL (i.e. perceived QOL [self-rated health], psychological well-being [depression], and behavior competency [cognition]), this sample indicated that neither LRP nor the facility type had increased or decreased their perception of QOL. The non-statistically significant results may be attributed to the small sample size; otherwise, the pre-post research design might bias the results due to the characteristics of AD, and several intervention modalities (e.g. intervention dose and type of activity) may also have affected the outcome.

The findings of this present study support that the optimal structure of QOL measurements is a multi-dimensional complex model including both subjective and objective indicators. In particular, elders with mild to moderate AD could provide their own perceptions of QOL that can be evaluated using intrapersonal aspects and social-

normative aspects, including perceived QOL, psychological well-being, and behavioral competence. The selection of indicators in the present study focused on the deterioration of AD symptoms that evidenced changes due to the intervention. The objective data obtained with MMSE and subjective data obtained with SF-36 and GDS-11 treated by LRP-TW failed to statistically confirm significant changes that were obtained by qualitative methods (i.e. observation notes and performance measures), perhaps due to the sample size. However, the results highlight the importance of continuing the search for reliable methods for measuring QOL because it is the primary target outcome for services to senior patients with AD.

There is no “gold standard” tool for measuring QOL for elders with dementia or AD (Lawton, 1997; Sloane, et al, 2005), but a model of QOL measures can be structured to adequately capture the elders’ perceived ability to meet psychological and social criteria. Trials of different research designs are needed to capture the impact of the LRP with elders who have dementia or AD and to investigate the influence of the objective environment- Lawton’s fourth dimension (1997) on QOL. Improved recruiting techniques are necessary to obtain larger total sample sizes to improve confidence in study results.

The present study attempted to determine the effect of the intervention from the objective measures and from data obtained using a second source, such as observation summaries of the therapist based on their professional judgment. Evaluation is an essential component in the recreational therapy, specifically APIE- assessment, planning, implementation, and evaluation (Carter, Van Andel, & Robb, 2003). There are several

evaluative methods available in the clinical setting, such as progress notes, electronic clinical charting, and standard measurements. Regrettably, seldom has research looked into these resources and systematically review them in secondary data analyses. The qualitative results from the session observations in the present study provided data on intervention implementation and explored information which was missing in the standard measurement, such as the fluctuation of the performance.

The LRP-TW developed by the researcher should be repeated in Taiwan's long term care facilities since this present study showed that the intervention causes no harm and might offer benefits not currently available to their residents with cognitive impairment, such as dementia and AD. There is a need for therapeutic intervention in dementia care and long term care facilities in Taiwan, but few administrators are knowledgeable about recreational therapy or understand how recreational therapy functions as an allied health treatment modality in elder care. The LRP-TW intervention could be the introduction to recreational therapy in long term care facilities throughout Taiwan.

REFERENCE

- Alescio-Lautier, B., Michel, B.F., Herrera, C., Elahmadi, A., Chambon, C., Touzet., et al. (2007). Visual and visuospatial short-term memory in mild cognitive impairment and Alzheimer disease: Role of attention. *Neuropsychologia*, 45, 1948-1960.
- Alzheimer's Association. (2007). *What is alzheimer's?* Retrieved April, 1, 2007, from http://www.alz.org/alzheimers_disease_what_is_alzheimers.asp
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed. ed.). Washington, D.C.: Author.
- Atchley, R.C. (1989). A continuity theory of normal aging. *The gerontologist*, 29(2), 183-190.
- Berglund, A., & Ericsson, K. (2003). Different meanings of quality of life: a comparison between what elderly persons and geriatric staff believe is of importance. *International Journal of Nursing Practice*, 9, 112-119.
- Bergner, M., Bobbitt, R.A., Carter, W.B., & Gilson, B.S. (1981). The Sickness Impact Profile: Development and final revision of a health status measure. *Medical Care*, 19, 787-805.
- Bluck, S., Alea, N. (2002). Exploring the functions of autobiographical memory: Why do I remember the autumn? In J. D. Webster & B. K. Haight (Eds.), *Critical advances in reminiscence work: From theory to application*. (pp.61–75). New York: Springer.
- Bohlmeijer, E., Smit, F., & Cuijpers, P. (2003). Effects of reminiscence and life review on late-life depression: a meta-analysis. *International Journal of Geriatric Psychiatry*, 18, 1088-1094
- Brod, M., Stewart, A.L, Sands, L., & Walton, P. (1999). Conceptualization and measurement of quality of life in dementia: the dementia quality of life instrument (DQOL). *The Gerontologist*, 39(1), 25-35.
- Brookmeyer, R., Johnson, E., Ziegler-Graham, K., & Arrighi, H.M. (2007). Forecasting the global burden of Alzheimer's disease. *Alzheimer's & Dementia*, 3, 186-191.

- Buettner, L., & Fitzsimmons, S. (2003). *Dementia practice guideline for recreational therapy: Treatment of disturbing behaviors*. Alexandria, VA: American Therapeutic Recreation Association.
- Butler, R.N. (1963). The life review: an interpretation of reminiscence in the aged. *Psychiatry*, 26(1), 65-76.
- Butler, R.N. (1974). Successful aging and role of the life review. *Journal of American Geriatrics Society*, 22(12), 529-535.
- burlingame, j., & Skalko, T. (1997). *Idyll Arbor's Glossary for Therapists*. Ravensdale, WA: Idyll Arbor.
- Cappeliez, P., Rivard, V., & Guindon, S.P. (2007). Functions of reminiscence in later life: Proposition of a model and applications. *European Review of Applied Psychology*, 57(3), 151-156.
- Carlesimo, G.A., & Oscar-Berman M. (1992). Memory deficits in Alzheimer's patients: a comprehensive review. *Neuropsychology Review*, 3(2), 119-169.
- Carr, D.B., Gray, S., Baty, J., & Morris, J.C. (2000). The value of informant versus individual's complaints of memory impairment in early dementia. *Neurology*, 55(11), 1724-1726.
- Cassidy, T. (2005). Leisure, coping and health: the role of social, family, school and peer relationship factors. *British Journal of Guidance & Counseling*. 33(1), 51-66.
- Carter, M.J., Van Andel, G.E., & Robb, G.M. (2003). *Therapeutic Recreation: A Practical Approach*. Prospect Height, IL: Waveland Press, Inc.
- Chao, S., Chen, C., Liu, H., & Clark, M. J. (2008). Meet the real elders: reminiscence links past and present. *Journal of Clinical Nursing*, 17, 2647-2653.
- Chao, S., Liu, H., Wu, C., Jun, S., Chu, T., Huang, T., et al. (2006). The effects of group reminiscence therapy on depression, self esteem, and life satisfaction of elderly nursing home residents. *Journal of Nursing Research*, 14(1), 36-45
- Chen, H. J., & Lee, M. (2000). 台灣失智者的照護現況與展望. [Dementia care in Taiwan]. *Research in Applied Psychology*, 7, 191-199.

- Chen, T., Chiu, M., Tang, L., Chiu, Y., Chang, S., Su, C., et al. (2007). Institution typed-dependent high prevalence of dementia in long-term care units. *Neuroepidemiology*, 28, 142-149.
- Chiang, K., Lu, R., Chu, H., Chang, Y., & Chou, K. (2008). Evaluation of the effect of a life review group program on self-esteem and life satisfaction in the elderly. *International Journal of Geriatric Psychiatry*, 23, 7-10
- Christensen, D., (2002). Practical principles for the management of Alzheimer's disease. *Primary Care Companion to the Journal of Clinical Psychiatry*, 4(2), 63-39.
- Clare, L. (2003). Managing threats to self: awareness in early stage Alzheimer's disease. *Social Science & Medicine*, 57(6), 1017-1029.
- Clare, L., Woods, R., Moniz, C.E, Orrell, M., & Spector, A. (2003). Cognitive rehabilitation and cognitive training for early-stage Alzheimer's disease and vascular dementia. *Cochrane Database Systematic Review*.
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (second edition ed.). Thousand Oaks, CA: Sage Publications, Inc.
- Crum, R.M., Anthony, J.C., Bassett, S.S., Folstein, M.F. (1993). Population-based norms for the Mini-Mental State Examination by age and educational level. *Journal of American Medical Association*, 269 (18), 2386–2391.
- Csikszentmihalyi, M. & Kleiber, D. A. (1991). Leisure and self-actualization. In Driver, B. L.; Brown, Perry J. & Peterson, George L. (Ed.), *Benefits of leisure*. (pp.91-102). State College, PA: Venture.
- Dröes, R., Knoop, E., Bos, J., Meihuizen, L., Ettema, T., Gerritsen, D., et al. (2006). Quality of life in dementia in perspective: an explorative study of variations in opinions among people with dementia and their professional caregivers, and in literature. *Dementia*, 5(4), 533-558.
- Eikson, E.H. (1950). *Childhood and Society*. New York, NY: W.W. Norton & Co.
- Erikson, E.H. (1959). *Identity and the life cycle*. New York, NY: International Universities Press, Inc.

- Erikson, E.H., Erikson, J.M., & Kivnick, H.Q. (1986). *Vital Involvement in Old Age*, New York, NY: W.W. Norton & Company, Inc.
- Folstein, M. F., Folstein, S.E., McHugh, P.R. (1975). Mini-mental state: A practical method for grading the cognitive state of patients for the clinician". *Journal of psychiatric research*, 12(3), 189–98.
- Gabriel, Z., & Bowling, A. (2004). Quality of life from the perspectives of older people. *Aging & Society*, 24, 675-691.
- Gentile, K.M. (1991). A review of the literature on interventions and quality of life in the frail elderly. In J. E. Birren, J. E. Lubben, J. C. Rowe & D. E. Deutchman (Eds.), *The concept and measurement of quality of life in the frail elderly* (pp.74-88). San Diego, CA: Academic Press, Inc.
- Gibson, F., & Burnside, I. (2005). Reminiscence group work. In B. Haight, F. Gibson (Eds), *Burnside's Working with Older Adults: Group Process and Techniques* (4th edition, pp.175-190). Sudbury, MA: Jones and Bartlett Publishers.
- Goldwasser, A.N., Auerbrach, S.M., & Harkins, S.W. (1987). Cognitive, affective and behavioral effects of reminiscence group therapy on demented elderly. *International Journal of Aging and Human Development*, 24, 209-222.
- Guo, N., Liu, H., Wong, P., Liao, K., Yan, S., Lin, K., et al. (1988). 「簡短式智能評估」之中文施測與常模建立[Chinese version and Norms of the Mini-Mental State Examination]. *Journal of Rehabilitation Medicine Association*, 16, 52-59.
- Haber, D. (2006). Life review: implementation, theory, research, and therapy. *International Journal of Aging and Human Development*, 63(2), 153-171.
- Haggard, L.M., & Williams, D.R. (1991). Self-identity benefits of leisure activities. In Driver, B. L.; Brown, Perry J. & Peterson, George L. (Ed.), *Benefits of leisure* (pp.103-120). State College, PA: Venture
- Haight, B.K. (1988). The therapeutic role of a structured life review process. *Journal of Gerontology: Psychological Science*, 43(2), p40-44.
- Haight, B.K. (1992). Long-term effect of a structure life review process. *Journal of Gerontology: Psychological Science*, 47(5), p312-315.

- Haight, B.K., Bachman, D.L., Hendrix, S., Wagner, M.T., Meeks, A., & Johnson, J. (2003). Life review: treating the dyadic family unit with dementia. *Clinical Psychology and Psychotherapy*, 10, 165-174.
- Haight, B.K., & Dias, J.K. (1992). Examining key variables in selected reminiscing modalities. *International Journal of Psychogeriatrics*, 4(2), 279-290.
- Haight, B.K., Michel, Y., & Hendrix, S. (1998). Life review: preventing despair in newly relocated nursing home residents short- and long-term effects. *International Journal of Aging and Human Development*, 47(2), 119-142.
- Haight, B.K., Michel, Y., & Hendrix, S. (2000). The extended effects of the life review in nursing home residents. *International Journal of Aging and Human Development*, 50(2), 151-168.
- Hamuro, A., Isono, H., Sugai, Y., Torh, S., Furuta, N., Mimura, M., et al. (2007). Behavioral and psychological symptoms of dementia in untreated Alzheimer's disease patients. *Psychogeriatrics*, 7, 4-7.
- Hartmaier, S.L., Sloane, P.D., Guess, H.A., Koch, G.G., Mitchell, M., & Phillips, C.D. (1995). Validation of the minimum data set cognitive performance scale: agreement with the Mini-Mental State Examination. *Journal of Gerontology: Medical Sciences*, 50(2), M128-M133.
- Hawkins, B. A., May, M. E., & Rogers, N. B. (1996). *Therapeutic activity intervention with the elderly: Foundations & practices*. State College,PA: Venture Publishing, Inc.
- Hebert, L. E., Scherr, P. A., Bienias, J. L., Bennett, D. A., & Evans, D. A. (2003). Alzheimer disease in the US population: Prevalence estimates using the 2000 census. *Archives of Neurology*, 60, 1119-1122.
- Hirsch, C.R., & Mouratoglou, V.M. (1999). Life review of an older adult with memory difficulties. *International Journal of Geriatric Psychiatry*, 14, 261-265.
- Howell, D.C. (2002). *Statistical Methods for Psychology*. Belmont, CA: Thomson Higher Education.

- Holsinger, T., Deveau, J., Boustani, M., & Williams, J.W. (2007). Does this patient have dementia? *Southern Medical Journal*, 100(12), 1184-1185
- Huang, S., Li, C., Yang, C., & Chen, J. (2009). Application of reminiscence treatment on older people with dementia: a case study in Pingtung, Taiwan. *Journal of Nursing Research*, 17(2), 112-119.
- Jensen, E., & Dehlin, O. (1993). A comparison between three psychogeriatric rating scales. *International Journal of Geriatric Psychiatry*, 8, 215-229.
- Jonker, C., Gerritsen, D.L., Bosboom, P.R., & Van der Steen, J.T. (2004). A model of quality of life measures in patients with dementia: Lawton's next step. *Dementia and Geriatric Cognitive Disorders*, 18(2), 159-164.
- Kane, R.A. (2003). Definition, measurement, and correlates of quality of life in nursing homes: toward a reasonable practice, research, and policy agenda. *The Gerontologist*, 43 (2), 28-36.
- Kane, R.L., & Kane, R.A. (2000). *Assessing Older Persons: Measures, Meaning, and Practical Applications*. New York, NY: Oxford University Press, Inc.
- Kasl-Godley, J., & Gatz, M. (2000). Psychosocial interventions for individuals with dementia: an integration of theory, therapy, and a clinical understanding of dementia. *Clinical Psychology Review*, 20(6), 755-782.
- Kleiber, D.A. (1999). *Leisure Experience and Human Development*. New York, NY: Basic Books.
- Kivnick, H.Q., & Murray, S.V. (2001). Life strengths interview guide: assessing elder clients' strengths. *Journal of Gerontological Social Work*, 34(4), 7-31.
- Lan, L. (2003, September). 不過勞，就失業？ [Heavy worker, or unemployed?]. *Cheers Magazine*. Retrieved October 30, 2008, from <http://www.cheers.com.tw/doc/page.jsp?id=402881e8134e403a01134e47a0200779>
- Lai, C.K.Y., Chi, I., & Kayser-Jones, J. (2004). A randomized controlled trial of a specific reminiscence approach to promote the well-being of nursing home residents with dementia. *International Psychogeriatrics*, 16(1), 33-49.

- Lawton, M. P. (1991a). Functional status and aging well. [Electronic version]. *Generations*, 15(1), 31-34. Retrieved 2007.2.20, from <http://web.ebscohost.com/ehost/> database.
- Lawton, M. P. (1991b). A multidimensional view of quality of life in frail elders. In J. E. Birren, J. E. Lubben, J. C. Rowe & D. E. Deutchman (Eds.), *The concept and measurement of quality of life in the frail elderly* (pp. 4-23). San Diego, CA: Academic Press, Inc.
- Lawton, M. P. (1994). Quality of life in Alzheimer Disease. *Alzheimer Disease and Associated Disorders*, 8(suppl.3), 138-150.
- Lawton, M. P. (1997). Measures of quality of life and subjective well-being. *Generations*, 21(1), 45-47.
- Lawton, M. P. (1999). Quality of life in chronic illness. *Gerontology*, 45, 181-183.
- Lawton, M.P., Kleban, M.H., & Dean, J. (1993). Affect and age: cross-sectional comparisons of structure and prevalence. *Psychology and Aging*, 8, 165-175.
- Lawton, M.P., Kleban, M.H., Dean, J., Rajagopal, D., & Parmelee, P.A. (1992). The factorial generality of brief positive and negative affect measures. *Journal of Gerontology: Psychological Sciences*, 47, 228-237.
- Lawton, M. P., Winter, L., Kleban, M. H., & Ruckdeschel, K. (1999). Affect and quality of life: objective and subjective. *Journal of Aging and Health*, 11(2), 169-198.
- Logsdon, R.G., Gibbons, L.E., McCurry, S.M., & Teri, L. (1999). Quality of life in Alzheimer's disease: patient and caregiver reports. *Journal of Mental Health and Aging*, 5(1), 21-32
- Lee, Y. (2005). *Effects of life review program on emotional well-being of Korean Elderly with Alzheimer's disease*. Unpublished doctoral dissertation, University of Minnesota, Minneapolis.
- Lin, K., Wang, P., Chen, C., Chiu, Y., Kuo, C., Chuang, Y., et al. (2003). The three-item clock-drawing test: a simplified screening test for Alzheimer's disease. *European Neurology*, 49(1), 53-58.

- Liu, H., Yeh, C., Chick, G.E., & Zinn, H.C. (2008). An exploration of meanings of leisure: a Chinese perspective. *Leisure Science*, 30, 482-488.
- Malakouti, S.K., Fatollahi, P., Mirabzadeh, A., Salavati, M., & Zandi, T. (2006). Reliability, validity and factor structure of the GDS-15 in Iranian elderly. *International Journal Geriatric Psychiatry*, 21, 588-593.
- Mastel-Smith, B., Binder, B., Malecha, A., Hersch, G., Symes, L., & McFarlane, J. (2006). Testing therapeutic life review offered by home care workers to decrease depression among home-dwelling older women. *Issues in Mental Health Nursing*, 27, 1037-1049.
- McKenzie, S.E. (2004). *The efficacy of a culturally relevant life review program: effects on life satisfaction and psychological well-being of community dwelling African American elders*. Unpublished doctoral dissertation, University of Minnesota, Minneapolis.
- McKhann, G., Drachman, D., Folstein, M., Katzman, R., Price, D., & Stadlan, E.M. (1984). Clinical diagnosis of Alzheimer's disease: report of the MINCDS-ADRDA work group under the auspices of Department of Health and Human Services Task Force on Alzheimer's disease. *Neurology*, 34(7), 939-944
- Novella, J.L., Boyer, F., Jochum, C., Jovenin, N., Morrone, I., Jolly, D., et al. (2006). Health status in patients with Alzheimer's disease: an investigation of inter-rater agreement. *Quality of Life Research*, 15, 811-819.
- Novella, J. L., Jochum, C., Jolly, D., Morrone, J.D., Ankri, J., Bureau, F., et al. (2001) Agreement between patients' and proxies' reports of quality of life in Alzheimer's disease. *Quality of Life Research*, 10(5), 443-452.
- Olazarán, J., Muñiz, R., Reisberg, B., Peña-Casanova, J., del Ser, T., Cruz-Jentoft, J., et al. (2004). Benefits of cognitive-motor intervention in MCI and mild to moderate Alzheimer disease. *Neurology*, 63 (12): 2348-53.
- Ory, M. G., Cox, D. M., Gift, H. C., & Abeles, R. P. (1994). Introduction- aging and quality of life- celebrating new discoveries. In R. P. Abeles, H. Gift & M. G. Ory

- (Eds.), *Aging and quality of life* (pp.1-18). New York, NY: Springer Publishing Company, Inc.
- Parker, R.G. (1995). Reminiscence: a continuity theory framework. *The Gerontologist*, 35(4), 515-525.
- Parker, R.G. (1999). Reminiscence as continuity: comparison of young and older adults. *Journal of Clinical Geropsychology*, 5(2), 147-157.
- Penrod, J., Yu, F., Kolanowski, A., Fick, D.M., Loeb, S.J., & Hupcey, J.E. (2007). Reframing person-centered nursing care for persons with dementia. *Research and Theory for Nursing Practice: An International Journal*, 21(1), 57-72.
- Porter, H.R., & Burlingame, J. (2006). Dementia. *Recreational Therapy Handbook of Practice*. (pp.53-56). Enumclaw, WA: Idyll Arbor, Inc.
- Porter, E. (1998). Gathering our stories; claiming our lives: Seniors' life story books facilitate life review, integration and celebration. *Journal on Developmental Disabilities*, 6(1), 44-59.
- Qui, M. (2008). 失智症診斷治療的教戰守則. [Guideline for the dementia diagnosis and treatment]. *Journal of Taiwan Endometriosis Association*, 15(3), 10-12.
- Rabins, P.V., Kasper, J.D., Kleinman, L., Black, B.S., & Patrick, D.L. (1999). Concepts and methods in the development of the ADRQOL: an instrument for assessing health-related quality of life in persons with Alzheimer's disease. *Journal of Mental Health and Aging*, 5(1), 33-48.
- Ready, R. E., Ott, B. R., & Grace, J. (2004). Patient versus information perspective of quality of life in mild cognitive impairment and Alzheimer's disease. *International Journal of Geriatric Psychiatry*, 19, 256-265.
- Reddin, M. (1996). *Structured life review as a therapeutic process for elderly nursing home residents*. Unpublished doctoral dissertation, Indiana University, Indiana.
- Reisberg, B., Javed, A., Kenowsky, S., & Auer, S. R. (2005). Alzheimer's disease. In H. H. Zaretsky, E. F. Richter & M. G. Eisenberg (Eds.), *Medical aspects of disability: A handbook for the rehabilitation professional* (3rd edition ed., pp. 79-118). New York, NY: Springer Publishing Company, Inc.

- Rolland, Y., Pillard, F., Klapouszczak, A., Reynish, E., Thomas, D., Andrieu, S., et al. (2007). Exercise program for nursing home residents with Alzheimer's disease: A 1-year randomized, controlled trial. *Journal of the American Geriatrics Society*, 55(2), 158-165.
- Sabat, S.R. (1994). Language function in Alzheimer's disease: a critical review of selected literature. *Language & Communication*, 14(4), 331-351.
- Schmutte, P.S., & Ruffy, C.D. (1997). Personality and well-being: reexamining methods and meanings. *Journal of Personality and Social Psychology*, 73(3), 549-559
- Shaw, M., Westwood, M., & deVries, B. (1999). Integrating personal reflection and group-based enactments. *Journal of Aging Studies*, 13(1), 109-119.
- Siegenthaler, K.L.; O'Dell, I. (1998). Meeting the leisure needs of families. *Parks & Recreation*. 33(12), 38-44
- Sifton, C.B. (2000). Maximizing the functional abilities of persons with Alzheimer's disease and related dementias. In M.P. Lawton & R.L. Rubinstein (Eds.), *Interventions in Dementia Care: Toward improving quality of life* (pp.11-37). New York, NY: Springer.
- Sloane, P. D., Zimmerman, S., Williams, C. S., Reed, P. S., Gill, K. S., & Preisser, J. S. (2005). Evaluating the quality of life of long-term care residents with dementia. *The Gerontologist*, 45(1), 37-49.
- Stevens-Ratchford, R.G. (1993). The effect of life review reminiscence activities on depression and self-esteem in older adults. *The American Journal of Occupational Therapy*, 47(5), 413-420.
- Stewart, A.L., & King, A.C. (1994). Conceptualizing and measuring quality of life in older populations. In Abeles, R.P., Gift, H.C. and Ory, M.G. (Eds). *Aging and Quality of Life*. (pp.27-54). New York, NY: Springer Publishing Company, Inc.
- Stumbo, N. J., & Peterson, C. A. (2004). *Therapeutic recreation program design: Principles and procedures* (4th edition ed.). San Francisco, CA: Pearson Education, Inc.

- Sultzer, D.L., Levin, H.S., Mahler, M.E., High, W.M., & Cummings, J.L. (1993). A comparison of psychiatric symptoms in vascular dementia and Alzheimer's disease. *American Journal of Psychiatry*, 150(12), 1806-1812.
- Sun, Q. (2008). Confucian educational philosophy and its implication for lifelong learning and lifelong education. *International Journal of Lifelong Education*, 27(5), 559-578.
- Taber's Cyclopedic Medical Dictionary* (1987). Philadelphia: F.A. Davis Co.
- Tang, L., & Li, M. (2006). 台灣失智症照護之困境. [The dilemma of dementia care in Taiwan]. *Journal of Taipei Medical Association*, 50(7), 52-56.
- Tabourne, C.E.S. (1991). The effects of a life review recreation therapy program on confused nursing home residents. *Topics in Geriatric Rehabilitation*, 7(2), 13-21.
- Tabourne, C.E.S. (1995a). The effects of a life review program on disorientation, social interaction and self-esteem of nursing home residents. *The International Journal of Aging and Human Development*, 41(3), 251-266.
- Tabourne, C.E.S. (1995b). The life review program as an intervention for an older adult newly admitted to a nursing home facility: a case study. *Therapeutic Recreation Journal*, 26(3), 228-236.
- Talassi, E., Guerreschi, M., Feriani, M., Fedi, V., Bianchetti, A., & Trabucchi, M. (2007). Effectiveness of a cognitive rehabilitation program in mild dementia (MD) and mild cognitive impairment (MCI): A case control study. *Archives of Gerontology & Geriatrics*, 44, 391-399.
- Tang, W.K., Wong, E., Chiu, H.F.K., Lum, C.M., & Ungvari, G.S. (2005). The geriatric depression scale should be shortened: results of Rasch analysis. *International Journal of Geriatric Psychiatry*, 20, 783-789.
- Thalheimer, W., & Cook, S. (2002, August). *How to calculate effect sizes from published research articles: A simplified methodology*. Retrieved January 22, 2009 from http://work-learning.com/effect_sizes.htm.
- Thorgrimsen, L., Schweitzer, P., & Orrell, M. (2002). Evaluating reminiscence for people with dementia: a pilot study. *The Arts in Psychotherapy*, 29, 93-97.

- Tiraboschi, P., Hansen, L.A., Alford, M., Masliah, E., Thal, L.J., & Corey-Bloom, J. (2000). The decline in synapses and cholinergic activity is asynchronous in Alzheimer's disease. *Neurology*, 55, 1278-1283.
- Toepper, M., Beblo, T., Thomas, C., & Driessen, M. (2008). Early detection of Alzheimer's disease: a new working memory paradigm. *International Journal of Geriatric Psychiatry*, 23, 272-278
- Trenkle, D.L., Shankle, W.R., & Azen, S.P. (2007). Detecting cognitive impairment in primary care: performance assessment of three screening instruments. *Journal of Alzheimer's Disease*, 11, 323-335.
- Tseng, H., Lu, J.R., & Tsai, Y. (2003). 國人生活品質評量(I)：SF-36 台灣版的發展及心理計量特質分析[Assessment of health-related quality of life in Taiwan (I): development and psychometric testing of SF-36 Taiwan version]. *Taiwan Journal Public Health*, 22(6), 501-511.
- Tuokko, H., Hadjistavropoulos, T., Miller, J.A., & Beattie, B.L. (1992). The clock test: a sensitive measure to differentiate normal elderly from those with Alzheimer's disease. *Journal of the American Geriatrics Society*, 40(6), 579-584.
- Uhlmann, R.F., Larson, E.B. (1991). Effect of education on the Mini-Mental State Examination as a screening test for dementia. *Journal of the American Geriatrics Society*, 39(9), 876-880.
- Vellone, E., Piras, G., Talucci, C., & Cohen, M.Z. (2007). Quality of life for caregivers of people with Alzheimer's disease. *Journal of Advanced Nursing*, 61(2), 222-231.
- Wang, J. (2004). The comparative effectiveness among institutionalized and non-institutionalized elderly people in Taiwan of Reminiscence therapy as a psychological measure. *Journal of Nursing Research*, 12(3), 237-244
- Wang, J. (2005). The effects of reminiscence on depressive symptoms and mood status of older institutionalized adults in Taiwan. *International Journal of Geriatric Psychiatry*, 20, 57-62.

- Wang, J. (2007). Group reminiscence therapy for cognitive and affective function of demented elderly in Taiwan. *International Journal of Geriatric Psychiatry*, 22, 1235-1240.
- Wang, J., Yen, M., & OuYang, W. (2009). Group reminiscence intervention in Taiwanese elders with dementia. *Archives of Gerontology and Geriatrics*, 49, 227-232.
- Ware, J.E. (1996). The SF-36 health survey. In B. Spilker (Eds.), *Quality of Life and Pharmacoeconomics in Clinical Trials*, 2nd edition (pp.337-345). Philadelphia, PA: Lippincott-Raven Publishers.
- Ware, J.E., Kosinski, M., & Gandek, B. (2000). *SF-36®Health Survey: Manual and Interpretation Guide*. Lincoln, RI: Quality Metric Incorporated.
- Ware, J. E., & Sherbourne, C. D. (1992). The MOS 36-item short-form health survey (SF-36). *Medical Care*, 30(6), 473-481.
- Webster, J. D., & Cappeliez, P. (1993). Reminiscence and autobiographical memory: complementary contexts for cognitive aging research. *Developmental review*, 13 (1), 54-91
- Webster, J. D., Haight, B. K. (1995). Memory lane milestones: Progress in reminiscence definition and classification. In B. K. Haight & J. D. Webster (Eds.), *The Art and Science of Reminiscing: Theory, Research, Methods, and Applications* (pp.273–286). Washington, DC: Taylor & Francis.
- Wong, P.T.P., & Watt, L.M. (1991). What type of reminiscence are associated with successful aging? *Psychology and Aging*, 6, 272-279.
- World Health Organization. (1997). *Measuring quality of life: the world health organization quality of life instruments* (The WHOQOL-100 and the WHOQOL-BREF). Switzer land: WHOQOL Group, Division of Mental Health and Prevention of Substance Abuse.
- Wragg, R.E., & Jeste, D.V. (1989). Overview of depression and psychosis in Alzheimer's disease, *American Journal of Psychiatry*, 146(5), 577-587.

- Wu, C., & Lin, Y. (2004). 後 SARS 時代台灣休閒文化價值觀念變遷之探討. [The change of leisure culture value after SARS time in Taiwan]. *Chia-Nan Annual Bulletin*, 30, 358-370.
- Yesavage, J.A., Brink, T.L., Rose, T.L., Lum, O., Huang, V., Adey, M.B., et al. (1983). Development and validation of a geriatric depression screening scale: A preliminary report. *Journal of Psychiatric Research*, 17, 37-49.
- Zank, S., & Leipold, B. (2001). The relationship between severity of dementia and subjective well-being. *Aging & Mental Health*, 5(2), 191-196.
- Zeisel, J., Silverstein, N. M., Hyde, J., Levkoff, S., Lawton, M. P., & Holmes, W. (2003). Environmental correlates to behavioral health outcomes in alzheimer's special care units. *Gerontologist*, 43(5), 697-711.

APPENDIX I

PROGRAM: Life Review Program (LRP-TW)

Purpose: To present basic concepts related to orientation functions, emotional functions and thought functions through reminiscence procedure for self-integrity.

Program objectives:

TPO 1: To demonstrate knowledge of the concepts of orientation

EO 1: To demonstrate the ability to recognize the orientation to time when reminisce the event

EO 2: To demonstrate the ability to recognize the orientation to place when reminisce the event

EO 3: To demonstrate the ability to recognize the orientation to person when reminisce the event

EO 4: To demonstrate the ability to recognize the other specified orientation when reminisce the event

EO 5: To demonstrate the ability to recognize the unspecified orientation when reminisce the event

TPO 2: To demonstrate the ability to recognize of interior emotion expression

EO 1: To demonstrate the ability to show appropriateness of emotion that produce congruence of feeling of affect with the situation

EO 2: To demonstrate the ability to show regulation of emotion that controls the experience and display of affect

TPO3: To demonstrate the ability to use of moderate thought functions

EO 1: To demonstrate the ability to perform moderate pace of thought

EO 2: To demonstrate the ability to perform moderate form of thought

EO 3: To demonstrate the ability to perform moderate content of thought

IMPLEMENTATION DESCRIPTION

Population: This program is for individuals having mild to moderate dementia. The content was developed to serve individuals 65 years of age and older. Ideally, the program should be limited to no more than 10 individuals but at least one.

Program length and duration: This program is designed to be implemented in 10 sessions. The program consisted of two sessions per week involving themes of life progressing from a person's birth to death. The length of a session is suggested between 45 to 60 minutes.

Program context: This program is designed for long-term care facilities at Taiwan.

Staff: As noted above, it is suggested that this program be limited to 10 individuals. Under these guidelines, one certified therapeutic recreation specialist will be sufficient to lead each session. The leader should be familiar with the diagnoses of the residents being served, age-specific developmental milestones, and reminiscence skill or counseling skill.

Facility: The size of the room should be large enough to accommodate seating for everyone and ample room to stand to perform role-playing exercises.

Equipment: This will vary based on the activities the leader chooses to do for each session, e.g. Art supplies, music records/ tapes, VCD, toys and so on.

PROGRAM CONTENT AND PROCESS

Content and Process Description	
<p>Session: I & II Goal: To introduce the life review program and identify the meaning of leisure Life stage: Overview of life Discussion topic: Pathway of leisure in life Activity: Life review table game Material: A life review game board, old photos, traditional toys, a big dice, markers, question cards</p>	
Content	Process
<p>The therapist creates a table game that facilitates individuals in the group to introduce self and identify his/her one significant leisure interest [what brings them peace or joy and meaning, engages them so as to stop awareness of time passing] throughout life. Everyone shares a story related to the identified leisure interest, such as the first time absorbed in the leisure activity, or the most memorable event when he/she did the leisure activity.</p>	<ol style="list-style-type: none"> Introduction of session- the therapist introduces the life review program to the group, and explains the activity for current session. Demonstrate the table game - the therapist introduces self briefly and demonstrates how to play the life review table game. It contains a loop with 16 stops which are composed by 8 life stages, 1 start/end point, 4 opportunities, and 3 risks. The opportunities raise several questions related to the thoughts of life. The risks raise several requests regarding the performance. Each life stage is the safe zone, but the therapist may present the photos or objects related to that life stage, and facilitate the participants to recall their leisure experience or any life story. Play the table game- Everyone has to introduce self and play the game. Conclusion- the therapist summarizes current session's discussion, and introduces next session in brief.
<p><i>Consoling Guideline:</i></p> <ol style="list-style-type: none"> Discuss significant leisure experience related to individual life (across life span) Guide individuals to identify meaning/influence of leisure interest to their lives Help individuals work through fears and weaknesses by discussing and redefining what is leisure- what makes life joyful? What makes you who you are - unique? What activity is essential to your life? <p><i>Sample facilitated question:</i></p> <p>What activity or experience makes you feel calm or comfortable and reduces stress or fear? Why do you like to do this activity? What is the special meaning of the activity to your life? Who do you like to do the activity with? How long have you retained the leisure interest? What happens when you do this activity – do you make life decisions at the same time or focus on physical skill or relax and become more aware of your surroundings like listening to birds sing? How do you feel when the activity is finished?</p>	

Content and Process Description	
<p>Session: III & IV Goal: To identify individual hope & faith from infant stage till now Life stage: Infancy Discussion topic: Basic trust/Basic mistrust Activity: Sing along- lullaby Material: Piano, copies of 2 music scores/lyrics of Taiwanese lullabies, a doll</p>	
Content	Process
<p>The therapist leads the group to sing two lullabies and discuss with the group about their memory of their infant event. The doll can be used to facilitate their memory about baby or their grandchildren, such as how to hold the baby, how their parents hold them.</p>	<p>a. Introduction of session- the therapist reviews the last session, and introduces current session briefly, including the topic and the activity. b. Sing a song- the therapist chooses one song and invites the group to sing together c. Discussion- the therapist facilitates the members of group to share their thoughts (in compliance with the discussion questions) d. Repeated steps b & c during the session e. Conclusion- the therapist summarizes current session's discussion, and introduce to next session in brief.</p>
<p><i>Consoling Guideline:</i></p> <ol style="list-style-type: none"> 1. Discuss event related to infant age, including themselves, their children or grand children, and share their feeling and wishes for the child. 2. Guided individual to identify their beliefs and values in trust 3. Help individual understanding about reliance on others, and what is important about being able to trust someone and being trust worthy themselves. <p><i>Sample facilitated question:</i></p> <p>Did your parents sing a lullaby before you went to bed? /Did you sing a lullaby to your kid or grand kid?</p> <p>Did you/your children cry if no one is with them or rocks the cradle?</p> <p>Who is the person you trusted most when you were an infant?</p> <p>What is it in your life that gives you a sense of security?</p> <p>How will you respond to an unsafe situation or insecurity feeling? E.g., ask for other's help?</p> <p>Religion? Ignore it?</p> <p>What/who is it/the person in your life that gives you hope? [helps you to feel hopeful especially in difficult times]</p> <p>What is your major belief or faith about life?</p>	

Content and Process Description

Session: V & VI

Goal: To evaluate individual willfulness, independence, & control from toddlerhood till now

Life stage: Toddlerhood

Discussion topic: Autonomy/ Shame and doubt

Activity: Draw lots* (a vocational inclination test for an infant)

Material: Rice screener ∙ book ∙ stamp ∙ writing brush ∙ calculator ∙ coin ∙ chicken leg ∙ ruler ∙ green onion ∙ celery ∙ garlic ∙ straw ∙ sword ∙ stethoscope

Content	Process
<p>The therapist demonstrates the Draw lots activity, and discusses the meaning of each symbol with the group.</p> <p>*Draw lots is an ancient custom to estimate child's future career. Parents will display 12 tools in the front of the child, and let him/her pick up one tool that represents one specific career.</p>	<p>a. Introduction of session- the therapist reviews the last session, and introduces current session briefly, including the topic and the activity.</p> <p>b. Draw Lots demonstration- the therapist explains the activity and displays the 12 tools. Each member may contribute his own experience with Draw Lots and the meaning of each tool/symbol.</p> <p>c. Discussion- the therapist facilitates members of group to share their thoughts (in compliance with the discussion questions)</p> <p>d. Conclusion- the therapist summarizes current session's discussion, and introduce to next session in brief.</p>

Consoling Guideline:

1. Discuss event related to toddlerhood, including themselves, their children or grand children, and share their feeling
2. Guide individuals to identify their beliefs and values regarding autonomy and the need to be in control, such as asking to be taken to a family event or a favorite activity, being assertive, offering a differing opinion from other members of the group about an issue; recognizing when someone is apologetic about having a preference.
3. Help individual work through fears and weaknesses by discussing and redefining threats when they felt shame and doubt to make the decisions of life.

Sample facilitated question:

Did your parent enforce you to choose your career? /Did you enforce your children to choose their career?

What parts of your life are most important that you stay in charge?

What kinds of control are easier to give up, as long as you remain in charge of what's really important?

What kind of independence would you find especially painful to give up?

What do you think might make it easier to accept help, when you wish you didn't need help in the first place?

What is it that has always given you confidence in yourself?

What kinds of decisions are absolutely most important that you make for yourself?

What kind of decisions are you willing to have someone else make for you? Who?

Content and Process Description

Session: VII & VIII

Goal: To redeem purposefulness, pleasure, & imagination from the childhood and to reflect on the present /future

Life stage: Play age

Discussion topic: Initiative/ guilt

Activity: Traditional Toys

Material: bamboo drangonfly(竹蜻蜓), catapult (彈弓), bamboo pistol(竹槍), bamboo diabolo (竹片搖響), sandbag (沙包), shuttlecock (毽子), glass beads (彈珠), seven magic board (七巧板), drawing game (抽當), milk bottle caps(奶仔標), color flip boards (彩色翻板), spin top (陀螺), ground spin top(地牛), waving drum(波浪鼓), bamboo saccade(竹蟬), kaleidoscope(萬花筒), sun/moon ball(日月球)

Content	Process
<p>The therapist demonstrates several traditional toys and invites the group to play with the toys. Facilitate individual to share their own experiences related to the toys</p>	<p>a. Introduction of session- the therapist reviews the last session, and introduces current session briefly, including the topic and the activity. b. Toys time- the therapist displays several toys on the table, and invites individual to pick up one toy to play with it. Encourage individual to demonstrate the toy (how to play) and explain the reason of choice, experience with the choice, and share story about playing during his/her childhood. c. Discussion- the therapist facilitates the members of group to share their thoughts about playing or playfulness, and about doing things with and without a utilitarian purpose (in compliance with the discussion questions) d. Conclusion- the therapist summarizes current session's discussion, and introduce to next session in brief.</p>

Consoling Guideline:

1. Discuss events related to individual play age
2. Guide individuals to identify their beliefs and values related to initiative, and encourage individuals to continue to use their imagination throughout their lives, recognize that they have right for imagination, that they have the freedom to dream, and have confidence to take chances.
3. Help individual work through fears by discussing and redefining threats when they felt guilt for initiation in the past.

Sample facilitated question:

What kinds of things do you enjoy doing when you were a kid/ now? What kinds of activities give you pleasure?

What did you do for fun that you wish you had not done?

What would you do if you could do anything? (free of any money, time, or physical restriction)

What have you done in your life that makes you proudest?

What is there that you've always been curious about?

What do you want to do/learn, most of all, in the rest of your life?

Content and Process Description

Session: IX & X

Goal: To re-establish self competence and to resume the attitude of hard work from the past

Life stage: School age

Discussion topic: Industry/ inferiority

Activity: Tradition play

Material: puppets (布袋戲傀儡), facial mask (臉譜)

Content	Process
<p>The therapist displays several objects related to traditional play, such as traditional puppet show, Taiwanese opera, and Chinese opera. Invites the group to play with the objects in the traditional way and in a new imaginative way [puppets, clothing, or the masks]. Facilitate individuals to share their own experiences over the years about diligent work and willingness to tackle tasks that appear to be difficult.</p>	<p>a. Introduction of session- the therapist reviews the last session, and introduces current session briefly, including the topic and the activity. b. Traditional play time- the therapist displays several objects on the table, and invites individual to pick up one object to play with it in the usual and in imaginary ways. Encourage individual to demonstrate the play (i.e. the puppet show) and share with the group about his/her favorite play (i.e. tell the story of the play). c. Discussion- the therapist facilitate the member of group to share their thoughts about being diligence in study/work, assuming what kind of characteristic in any play, being in charge to accomplish a major task successfully (in compliance with the discussion questions) d. Conclusion- the therapist summarizes current session's discussion, and introduce to next session in brief.</p>

Consoling Guideline:

1. Discuss events related to individual school age
2. Guide individuals to identify their beliefs about doing one's best and attempting tasks that seem to be difficult.
3. Help individual work through fears and weaknesses by discussing and redefining the treats when they confront with unsuccessfulness [i.e. school grade , career] in the past.

Sample facilitated question:

Did you take charge of choosing what game you and your friends would play after school?
 What is your favorite play story? Who is your favorite character?
 Is the personality or the behavior of the character similar to you? Or different? Please identify.
 If you can play a role in one play, who you want to play? Why? (Is this because that the character has a specialty that you want to have?)
 What kind of things are you good at now? What skills do you have? Or areas of expertise?
 If a task is difficult for you will you give up or keep trying to succeed?
 What is there that you've always wanted to learn, but never quite gotten around to?
 What do you wish you could do better? What could you do to improve your skills?
 Would you find it easier to accept assistance, if you could trade some skill or activity in return?

Content and Process Description	
Session: XI & XII Goal: To identify personal values and strengthen self awareness Life stage: Adolescence Discussion topic: Identity/ confusion Activity: Music- old day records trivia Material: Music records or CD (folk songs, Taiwanese songs), music player	
Content	Process
<p>The therapist plays several songs with various music style, and the songs may match the time with the participant's adolescence age. Ask the participants about the song, e.g. name of the song and the singer. Facilitate individual to share their favorite songs/music when they were teenagers.</p>	<ol style="list-style-type: none"> a. Introduction of session- the therapist reviews the last session, and introduces current session briefly, including the topic and the activity. b. Old day record trivia- the therapist plays various music records, such as folk songs and Taiwanese songs. Invite the group to listen to different songs, and ask people to identify which song or what music it is or how is the singer. c. Discussion- the therapist facilitate the member of group to share their thoughts about being unique or striving to be like other people, daring to be or to have an opinion different from other people regarding the music appreciation(in compliance with the discussion questions) d. Conclusion- the therapist summarizes current session's discussion, and introduce to next session in brief.
<p><i>Consoling Guideline:</i></p> <ol style="list-style-type: none"> 1. Discuss events related to the adolescence stage 2. Guided individual to identify "who they are" and "what they believe" 3. Help individual work through fears and weaknesses by discussing and redefining the threats when they express their confusion about their role in the past <p><i>Sample facilitated question:</i></p> <p>What was your favorite music when you were a teenager? Who was your favorite singer? What are the characteristics that are like you? When are these qualities advantageous to you? Who are the people you admire and what about them is admirable? Have you attempted to emulate (acquire, copy) these qualities?</p> <p>What kind of person would you say you are?you have always been? When people describe you, what do they say? What would you like them to say? Do you have a philosophy (or 座右銘) of life that has guided they way you live your life? That guides your life today? What do you believe in now?</p>	

Content and Process Description

Session: XIII & XIV

Goal: To maximize individual opportunity for involvement with love & friendship

Life stage: Young adulthood

Discussion topic: Intimacy/ isolation

Activity: Old day movie appreciation

Material: 2 movie DVD(or VCD), DVD player, TV /Projector & screen,

Content	Process
<p>The therapist plays a small section of an old & famous movie in the beginning, such as Butterfly Lovers (梁山伯與祝英台), and The match (二相好). Invites the group to share their experience about the movie</p>	<ol style="list-style-type: none"> a. Introduction of session- the therapist reviews the last session, and introduces current session briefly, including the topic and the activity. b. Movie time- the therapist plays a part of the movie lasting for 20 minutes. Encourage individual to discuss the scenario of the movie and share with the group as following questions, such as when they see this movie, who they go with, what their impression after the movie at that time, etc. c. Discussion- the therapist facilitate the member of group to share their thoughts about avoiding getting feelings hurt or staying to yourself to avoid losing a friend (in compliance with the discussion questions) d. Conclusion- the therapist summarizes current session's discussion, and introduce to next session in brief.

Consoling Guideline:

1. Discuss people & events related to individual young adulthood
2. Guided individual to identify their beliefs and values in being loved, feeling responsible for/to someone, chance being vulnerable in order to be close to another
3. Help individual work through fears and weaknesses by discussing and redefining the treats when they felt isolation or loss (family/friends) in the past event

Sample facilitated question:

Who would you like to invite to go to the movie together today? Is she/he an important person to you? Where is the person?

Who was the most important person to you? Is the same person today? If not, what changed to break up the relationship?

Whom do you have contact with, these days? Do you try to make close friends?

Tell me about someone you've loved at some point in your life? What were your emotions at the time? Did you feel silly or carefree when you were with this person?

Can you talk about your partner? How would you describe about your relationship?

Content and Process Description

Session: XV & XVI

Goal: To resume the ability to care others or next generation and to create a sense of productivity

Life stage: Middle adulthood

Discussion topic: Generativity/ Self absorption

Activity: Cooking- make dumpling and brown sugar cake

Material: For dumpling - 50-60 wraps, filling (grounded pork, napa/cabbage, ginger, green onion, garlic, soy sauce, salt, etc.), vinegar, soy sauce, several big pot for mixed stuff, stove

For brown sugar cake- flour, rice flour, brown sugar, sesame, baking powder, rice cooker

Content	Process
<p>The group make the food together. According to personal functioning, the therapist assigns different tasks to different individual. Facilitate individuals to share their role in their family, community, or in their career setting.</p>	<p>a. Introduction of session- the therapist reviews the last session, and introduces current session briefly, including the topic and the activity.</p> <p>b. Food making- each individual has a task to make the food, such as to mixed with the filling, to wrap the dumpling, to boiled hot water, to make the dip sauce, or to display the dumpling when serve. (10 people for 50 dumplings)</p> <p>c. Discussion- the therapist facilitates the member of group to share their thoughts about passing on recipe to children or friends (in compliance with the discussion questions). What traditions were passed to each participant? What is important about leaving something for future generations?</p> <p>d. Conclusion- the therapist summarizes current session's discussion, and introduce to next session in brief.</p>

Consoling Guideline:

1. Discuss events related to individual middle adulthood
2. Guide individuals to identify their beliefs and values about generativity, being concerned about the behavior or values of younger people, feeling responsibility to contribute to the world
3. Help individual work through fears and weaknesses by discussing and redefining the treats when they express failure in their own life, and to understand that there is no failure if one learns from errors or teaches other people the lesson.

Sample facilitated question:

What is your role in your family when you were in the middle adulthood? And now?

How do you care your family when you were young? And now?

Who or what do you especially care about? (people, pets, activities, organizations, issues you concern, etc.)

What the most important thing for you to do with your life these days?

Content and Process Description

Session: XVII & XVIII

Goal: To compensate for the inevitable losses with wisdom that comprises a sense of perspective, a feeling for life's ironies, and a vital involvement in the present and future

Life stage: Old age

Discussion topic: Integrity/ Despair

Activity: Horticulture- propagation

Material: mixed soil, small pot, container, plant (i.e. Mint), Color sticker

Content	Process
<p>Garden activity is popular with Taiwanese elders. Propagation may also play a nutrition role for the elders. The therapist demonstrates a transplanting to the group. Invites the individual in the group to do the transplanting with assistance. Facilitate individual to share their viewpoint about their later life leisure and self-concept.</p>	<ol style="list-style-type: none"> a. Introduction of session- the therapist reviews the last session, and introduces current session briefly, including the topic and the activity. b. Decoration of pot-the therapist demonstrate the method of decoration, and guide the participants to use color sticker to decorate their plant pot individually c. Propagation time- the therapist demonstrates a cutting & transplanting, and explains each step carefully to the group (i.e. how to recognize a node, cut the stem, transplant to a pot, and care plan). Each member of the group will make one transplant by making a cutting. They can bring the plant home and take care of it if they want. d. Discussion- the therapist facilitates the member of group to share their thoughts about review of the past and self-evaluation (in compliance with the discussion questions). e. Conclusion- the therapist summarizes current session's discussion, and introduce to next session in brief.

Consoling Guideline:

1. Discuss events related to old age and currency
2. Guided individual to identify their beliefs and values in integrity
3. Help individual work through fears and weaknesses by discussing and redefining the default when they express the despair in their life. They have a wealth of knowledge especially if they can integrate all of their experiences. They can be very proud of having navigated all sorts of hurdles, overcoming challenges, and reaching old age successfully.

Sample facilitated question:

What has been most meaningful about your life so far?

What is there about your life you wish had been different? What else would have been different? Do you think that you missed good things because of this difference?

Do you have any thing that you feel regret for in your life? Did you have the same options to act on then that you know about now?

How do you deal with disappointment? What strategies have you used for coping with it?

Are you looking forward to your future? What do you expect to your future?

Content and Process Description

Session: XIX & XX

Goal: To maximize individual strengths by reviewing the resource of human spirit

Life stage: Review of life

Discussion topic: Life strengths

Activity: Tea art and life review table game

Material: Tea, hot pot, heater, tea-set (10 people), snakes (i.e. peanuts, peas, dry fish, almond, fruit, green bean cake, etc.), and Life Review Board Game sets

Content	Process
<p>Tea art is a very common leisure activity among the older generation. In Taiwan, many families will get together to make tea after the dinner, and sit together to chat with friends or family, or to watch TV. Invites a member of the group to make the tea for everyone. Facilitates individual to chat and guides the topic to the following discussion questions. Use the life review table game as a tool to facilitate the discussion.</p>	<ol style="list-style-type: none"> a. Introduction of session- the therapist reviews the last session, and introduces current session briefly, including the topic and the activity. b. Tea time- recruit a member from the group to demonstrate the process of tea making. Form a circle to chat in the group, just like the common way the elder did in their daily life. The therapist will prepare few snakes with tea, and start the conversation with the group. c. Discussion- Use the life review table game to facilitate the member of group to share their thoughts about meaning of life, unfinished tasks or regret for life (in compliance with the game questions). d. Conclusion- the therapist summarizes current session's discussion, and introduce to next session in brief. e. Closure- at the end of last session, the therapist asks the participants to evaluate their life satisfaction and to make a wish for the future as a closure of the whole program

Consoling Guideline:

1. Discuss events related to whole life stage
2. Guide individuals to identify their strengths cross life span
3. Help individuals work through fears and weaknesses by discussing and redefine the treats when they felt dissatisfied with their past.

Sample facilitated question:

What make you feel most alive in your life today?

What is most worth living for?

What makes you feel most like yourself? [If you were a character in a book, how would the author describe you?]

What makes your life a success?

What is your greatest strength or contribution to give to others now?

What will be your role [with grandchildren, with other elders] in the future?

EVALUTATION

Terminal program objectives sheets

Objectives and Performance Measures	
Program: Life Review	
Terminal Program Objective: 1. To demonstrate knowledge of the concepts of orientation	
Enabling Objective	Performance Measure
1. To demonstrate the ability to recognize the orientation to time when reminisce the event	1. When given a reminiscent event, the resident will demonstrate when it happens in his/her own personal life.
2. To demonstrate the ability to recognize the orientation to place when reminisce the event	2. When given a reminiscent event, the resident will demonstrate where it happens in his/her own personal life.
3. To demonstrate the ability to recognize the orientation to person when reminisce the event	3. When given a reminiscent event, the resident will demonstrate who were involved in his/her own personal life.
4. To demonstrate the ability to recognize the other specified orientation when reminisce the event	4. When given a reminiscent event, the resident will demonstrate what happens logically in his/her own personal life.
5. To demonstrate the ability to recognize the unspecified orientation when reminisce the event	5. When given a reminiscent event, the resident will demonstrate how it affected in his/her own personal life.
	as judged appropriate by the therapeutic recreation specialist.

Objectives and Performance Measures	
Program: Life Review	
Terminal Program Objective: 2. To demonstrate the ability to recognize interior emotion expression	
Enabling Objective	Performance Measure
1. To demonstrate the ability to show appropriateness of emotion that produce congruence of feeling of affect with the situation	1. Upon request, the resident will state (verbally or facially) emotion from one of the following situation: a. to indicate the feeling of affect when he/she describes the reminiscent event b. to indicate the feeling of affect when others describe the reminiscent event
2. To demonstrate the ability to show regulation of emotion that controls the experience and display of affect	2. While processing a reminiscent leading (e.g. storytelling, watch movie, and so on), the resident will identify: a. his/her emotional arousal related to their own experience as positive emotion or negative emotion. b. his/her emotional appraisals as normal after session as judged appropriate by the therapeutic recreation specialist.

Objectives and Performance Measures	
Program: Life Review Terminal Program Objective: 3. To demonstrate the ability to use of moderate thought functions	
Enabling Objective	Performance Measure
1. To demonstrate the ability to perform moderate pace of thought	1. Upon request, the resident will state one personal experience related to the topic in 3-5 minutes
2. To demonstrate the ability to perform moderate form of thought	2. Upon request, the resident will state one personal experience related to the topic under reasonable coherence and logic
3. To demonstrate the ability to perform moderate content of thought	3. Upon request, the resident will state one personal experience related to the topic which represent one major concept as judged appropriate by the therapeutic recreation specialist.

Performance Sheet

PROGRAM: Life Review

Staff: .

Date: / / .

Resident Name: .

Measurement Performance	Session											
	1	2	3	4	5	6	7	8	9	10	11	12
TPO1, EO1, To demonstrate the ability to recognize the orientation to time when reminisce the event												
TPO1, EO2, To demonstrate the ability to recognize the orientation to place when reminisce the event												
TPO1, EO3, To demonstrate the ability to recognize the orientation to person when reminisce the event												
TPO1, EO4, To demonstrate the ability to recognize the other specified orientation when reminisce the event												
TPO1, EO5, To demonstrate the ability to recognize the unspecified orientation when reminisce the event												
TPO2, EO1, To demonstrate the ability to show appropriateness of emotion that produce congruence of feeling of affect with the situation												
TPO2, EO2, To demonstrate the ability to show regulation of emotion that controls the experience and display of affect												
TPO3, EO1, To demonstrate the ability to perform moderate pace of thought												
TPO3, EO2, To demonstrate the ability to perform moderate form of thought												
TPO3, EO3, To demonstrate the ability to perform moderate content of thought												

APPENDIX II

MOS SF-36 Health Survey

1. In general, would you say your health is:
 - Excellent
 - Very good
 - Good
 - Fair
 - Poor
2. Compared to one year ago, how would you rate your health in general now?
 - Much better now than a year ago
 - Somewhat better now than a year ago
 - About the same as one year ago
 - Somewhat worse now than one year ago
 - Much worse now than one year ago
3. The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?
 - a. Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports.
 - Yes, limited a lot.
 - Yes, limited a little.
 - No, not limited at all.
 - b. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf?
 - Yes, limited a lot.
 - Yes, limited a little.
 - No, not limited at all.
 - c. Lifting or carrying groceries.
 - Yes, limited a lot.
 - Yes, limited a little.
 - No, not limited at all.
 - d. Climbing several flights of stairs.
 - Yes, limited a lot.
 - Yes, limited a little.
 - No, not limited at all.
 - e. Climbing one flight of stairs.
 - Yes, limited a lot.
 - Yes, limited a little.
 - No, not limited at all.
 - f. Bending, kneeling or stooping.
 - Yes, limited a lot.
 - Yes, limited a little.
 - No, not limited at all.
 - g. Walking more than one mile.
 - Yes, limited a lot.
 - Yes, limited a little.
 - No, not limited at all.
 - h. Walking several blocks.
 - Yes, limited a lot.
 - Yes, limited a little.
 - No, not limited at all.
 - i. Walking one block.
 - Yes, limited a lot.
 - Yes, limited a little.
 - No, not limited at all.
 - j. Bathing or dressing yourself.
 - Yes, limited a lot.
 - Yes, limited a little.
 - No, not limited at all.
4. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?
 - a. Cut down the amount of time you spent on work or other activities?
 - Yes No
 - b. Accomplished less than you would like?
 - Yes No
 - c. Were limited in the kind of work or other activities
 - Yes No

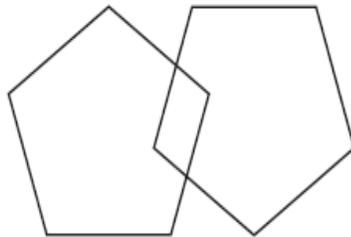
- d. Had difficulty performing the work or other activities (for example, it took extra time)
 Yes No
5. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?
- a. Cut down the amount of time you spent on work or other activities?
 Yes No
- b. Accomplished less than you would like
 Yes No
- c. Didn't do work or other activities as carefully as usual
 Yes No
6. During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?
 Not at all
 Slightly
 Moderately
 Quite a bit
 Extremely
7. How much bodily pain have you had during the past 4 weeks?
 Not at all
 Slightly
 Moderately
 Quite a bit
 Extremely
8. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?
 Not at all
 Slightly
 Moderately
 Quite a bit
 Extremely
9. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks.
- a. did you feel full of pep?
 All of the time
 Most of the time
 A good bit of the time
 Some of the time
 A little of the time
 None of the time
- b. have you been a very nervous person?
 All of the time
 Most of the time
 A good bit of the time
 Some of the time
 A little of the time
 None of the time
- c. have you felt so down in the dumps nothing could cheer you up?
 All of the time
 Most of the time
 A good bit of the time
 Some of the time
 A little of the time
 None of the time
- d. have you felt calm and peaceful?
 All of the time
 Most of the time
 A good bit of the time
 Some of the time
 A little of the time
 None of the time

- e. did you have a lot of energy?
- All of the time
 - Most of the time
 - A good bit of the time
 - Some of the time
 - A little of the time
 - None of the time
- f. have you felt downhearted and blue?
- All of the time
 - Most of the time
 - A good bit of the time
 - Some of the time
 - A little of the time
 - None of the time
- g. did you feel worn out?
- All of the time
 - Most of the time
 - A good bit of the time
 - Some of the time
 - A little of the time
 - None of the time
- h. have you been a happy person?
- All of the time
 - Most of the time
 - A good bit of the time
 - Some of the time
 - A little of the time
 - None of the time
- i. did you feel tired?
- All of the time
 - Most of the time
 - A good bit of the time
 - Some of the time
 - A little of the time
 - None of the time
10. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)?
- All of the time
 - Most of the time
 - A good bit of the time
 - Some of the time
 - A little of the time
 - None of the time
11. How TRUE or FALSE is each of the following statements for you?
- a. I seem to get sick a little easier than other people
- Definitely true
 - Mostly true
 - Don't know
 - Mostly false
 - Definitely false
- b. I am as healthy as anybody I know
- Definitely true
 - Mostly true
 - Don't know
 - Mostly false
 - Definitely false
- c. I expect my health to get worse
- Definitely true
 - Mostly true
 - Don't know
 - Mostly false
 - Definitely false
- d. My health is excellent
- Definitely true
 - Mostly true
 - Don't know
 - Mostly false
 - Definitely false

APPENDIX III

Mini-Mental State Examination (MMSE)

Maximum	Score	
		Orientation
5	()	What is the (year) (season) (date) (day) (month)?
5	()	Where are we (state) (country) (town) (hospital) (floor)?
		Registration
3	()	Name 3 objects: 1 second to say each. Then ask the patient all 3 after you have said them. Give 1 point for each correct answer. Then repeat them until he/she learns all 3. Count trials and record. Trials _____
		Attention and Calculation
5	()	Serial 7's. 1 point for each correct answer. Stop after 5 answers. Alternatively spell "world" backward.
		Recall
3	()	Ask for the 3 objects repeated above. Give 1 point for each correct answer.
		Language
2	()	Name a pencil and watch.
1	()	Repeat the following "No ifs, ands, or buts"
3	()	Follow a 3-stage command: "Take a paper in your hand, fold it in half, and put it on the floor."
1	()	Read and obey the following: CLOSE YOUR EYES
1	()	Write a sentence.
1	()	Copy the design shown.



_____ Total Score
 ASSESS level of consciousness along a continuum _____
 Alert Drowsy Stupor Coma

APPENDIX IV

Geriatric Depression Scale (GDS-11)

Instruction: Circle the answer that best describes how you felt over the past week.

- | | | |
|--|-----|----|
| 1. Are you basically satisfied with your life? | yes | no |
| 2. Have you dropped many of your activities and interests? | yes | no |
| 3. Are you in good spirits most of the time? | yes | no |
| 4. Are you afraid that something bad is going to happen to you? | yes | no |
| 5. Do you feel happy most of the time? | yes | no |
| 6. Do you often feel helpless? | yes | no |
| 7. Do you think it is wonderful to be alive now? | yes | no |
| 8. Do you feel worthless the way you are now? | yes | no |
| 9. Do you feel full of energy? | yes | no |
| 10. Do you feel that your situation is hopeless? | yes | no |
| 11. Do you think that most people are better off than you are? | yes | no |

APPENDIX V

CONSENT FORM (ENGLISH VERSION)

Impact of the Life Review Program as a Therapeutic Recreation Intervention on Quality of Life for residents with Alzheimer's Disease in South Taiwan's long term care institutions

You are invited to be in a research study. The research intends to measure how effective a program is for elders whose quality of life may be adversely affected by memory loss, problem-solving difficulties, or other diminished cognitive skills. The Life Review Program applies several techniques, such as memory skill, life story, and recreational activities, and has been shown in studies conducted in the United States to be a potentially effective intervention for people with mild to moderate losses of function. You were selected as a possible participant because you are a member of St. Joseph Hospital Nursing Home [Jing-ho Mental Hospital Nursing Home] [Tzu-an long-term care facility] [Bo Cheng Hospital Nursing Home] who was recommended to me by the director of nursing, Ms. I-chen Lin [Ms. Ying-ying Chen] [Ms. Yu-chen Hsu] [Ms. Fong-lian Wang]. You may not be eligible to participate in the research if you do not meet the screening criteria. We ask that you read this form and ask any questions you may have before agreeing to be included in the study.

This study is being conducted by a student researcher, Li-jung Lin, Ph.D. Candidate, School of Kinesiology, University of Minnesota.

Background Information

The purpose of this study is: to determine whether a recreation therapy program (i.e. Life Review Program) can improve functioning and thereby benefit quality of life for the participants.

Procedures:

If you agree to be in this study, we would ask you to do the following things:

1. To attend a screening test by answering the questions about your personal information, such as age, education level, marriage, religion, culture background, income, specialty, vocational history, leisure interest, etc; and draw a clock on a paper. This step will determine if you are eligible to attend the full study.
2. If you are eligible to attend the full study, you will need
 - (1) To answer several questions in a pretest asking for your feelings about your own health condition and your mood. You will also need to complete a test related to orientation, attention, language and memory. These questionnaires may take you 30-50 minutes to complete. Some of the questions are choices questions, such as "In general, would you say your health is excellent, very good, good, fair, or

poor?"; some of questions are yes/no questions, such as "During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health-- In cut down the amount of time you spent on work or other activities?"; and some of questions are the short answers, such as "What date is today? Which institution we are in now?"

- (2) You will be selected to two groups by chance:
 - a) If you are selected as a treatment group, you will need to participant with the researcher in a Life Review Program of leisure activities and discussions relevant to your life experiences. The program is a 10-week long course. One session lasting 50-60 minutes is offered twice a week and includes a group leisure activity. The activities are those you may have done before at an earlier period in your life (e.g., child's play with toys, traditional games, and favored art work). We will encourage you to share with the group your thoughts about the activities and your own life experience.
 - b) If you are selected as a control group, you will not need to participate in the Life Review Program, and you are encouraged to attend the regular activities provided by your facility routinely.
- (3) To complete a posttest (the same questions in the pretest) after the 10-week program concludes.

Risks and Benefits of being in the Study

The study has minimal risks. You may have some muscle soreness in your arms or legs from light physical activity; second, you may recall negative life events that cause sad emotional responses. You can refuse to participate in any activity during any session or quit your participation at any time if you feel uncomfortable. You also have the right to terminate participation at any time without effect on your relationship with St. Joseph Hospital Nursing Home [Jing-ho Mental Hospital Nursing Home] [Tzu-an long-term care facility] [Bo Cheng Hospital Nursing Home]. To protect your safety, I may ask you to stop participating in an activity if you appear to be over tired or agitated during the program. I will continuously remind you to be careful and not to perform too wide range of motion while involved in the study activity. I will also provide the positive thinking or confirmation in order to disorient the negative part when you express some tragedies in your life.

There are no direct benefits to participation in the study; however, you may enjoy leisure involvement and opportunities to interact with peers.

Confidentiality:

All records and data for this study will be kept private and will be stored securely in a locked cabinet in the office of the investigator. All subject data will comply with the data privacy standards of the University Of Minnesota Office Of Information Technology. Published reports of the study will not include any information that can be used to identify you. Your name and the identifier number assigned to you will be separated from

data collected and will be stored securely; only the researchers will have access to the records. All data will be kept for one year only.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relationship with St. Joseph Hospital Nursing Home [Jing-ho Mental Hospital Nursing Home] [Tzu-an long-term care facility] [Bo Cheng Hospital Nursing Home] or with the University of Minnesota. If you decide to participate, you are free not to answer any question or to withdraw at any time from the study without affecting those relationships.

Contacts and Questions:

The researchers conducting this study are: Li-jung Lin, Ph.D. candidate and Carla E.S. Tabourne, PhD, CTRS, advisor. You may ask any questions you have now and if you have questions later, **you are encouraged** to contact the researchers at 3F.-1, No.83, Xiuming St., Zuoying District, Kaohsiung City 813, Taiwan (R.O.C.), 612-232-1346, linxx289@umn.edu, or contact Dr. Carla Tabourne at 1900 University Ave. SE, Minneapolis, MN 55455, 612-625-7590, tabou001@umn.edu .

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), **you are encouraged** to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455; (612) 625-1650.

You will be given a copy of this information to keep for your records.

Statement of Consent:

I have read the above information. I have asked questions and have received answers. I consent to participate in the study.

Signature: _____ Date: _____

Signature of Investigator: _____ Date: _____

APPENDIX VI

CONSENT FORM (CHIENSE VERSION)

參與研究同意書

生命回顧課程對輕中度阿茲海默症患者生活品質之影響～以南台灣長期照護機構為例

親愛的_____先生/女士，您好：

首先，感謝您參與本次的研究。此研究之主要目的在於測試一休閒治療介入方案—生命回顧課程，是否能有效提升患有輕中度失智症長者的生活品質。此課程融合各種不同的治療技巧，如回憶、說故事、及休閒活動參與等，在美國已有多項研究證實其對輕中度失智症患者具有潛在性療效。本研究係由一位就讀於美國明尼蘇達大學博士班的學生林儷蓉所進行之研究。

在參加本研究之前，您必須先參與一項篩選測驗，由研究者與您進行簡短的訪談即畫時鐘測驗，訪談的內容主要是瞭解你的生活背景及經驗，像是您的家人有誰？您過去從事的職業為何？等等。若您符合研究條件，將會邀請您參加正式研究。

若您願意參加正式研究，您將需要填寫兩組問卷，請於生命回顧課程之前及後填寫，填寫一組問卷的時間約為三十分鐘到五十分鐘，內容是詢問您對於自己健康及生活的滿意度（包含身體、心理、社交及活動等方面的情況）、目前的情緒狀況、以及一項有關認知功能的檢測。這些問題包括了單選題，如「一般來說，您認為您目前的健康狀況為極好的，很好，好，普通，或是不好」；還有一些是非題，如「在過去一個月內，您是否曾因為身體健康問題，而在工作上或其它活動所花的時間變少了？」；還有一些是簡答題，如「今天的日期是多少？我們現在所在的機構名稱為何？」。

因本研究將所有參加者隨機分成二組，若您被選入為實驗組，您將需要參加一連串的生命回顧課程，這是一個十周的課程。每周將有二次的課程，而每天課程為長約五十至六十分鐘的團體活動，將帶您回顧過去您或許曾經有過經驗的各項不同休閒活動，包括童玩、傳統戲曲、音樂及電影等等，並且請您分享相關的個人生活經驗，這些經驗會是您從小到大任何一個時期曾經發生的事件，不論悲傷或快樂，只要您願意與大家分享即可。整個研究歷程可能約需四個月，所有活動將在這裡舉行，預計為三月底開始進行。若您被選入為控制組，您將不需要參加這個課程，但我們鼓勵您多多參與院內所舉辦的各項活動。

本研究旨在幫助您回憶生命中各個時期曾經發生過的事件，對參與研究的人來說應該不會有什麼不適或風險。在罕見的情況下，有參與者可能因為談及過往不愉快的經驗或事件而情緒有所牽動，若您有此情況，研究者將會適度的將您導引至對事件另有正面的看法，且您有權隨時退出討論或拒絕分享不愉快的經驗。基於健康的考量下，研究者在活動過程中若發現您出現疲勞或倦怠的情況下，可能會適時的請您停止參與或先至一旁休息。另外研究者也會隨時提醒您不要做出任何危害自己

的舉動，並在做任何較耗體能活動前，會提醒您適時評估自己的體力而節制您的參與度。

參與此計畫主要是讓您藉由休閒活動的參與，能獲得身心愉快經驗及有機會與同儕互動，並希望您能有機會更進一步瞭解自己，回想過去曾經有過的休閒經驗，面對未來能以更正向的態度去看待。

您所填寫的問卷將會完全保密，且只會用於此項研究。這些資料都將被保管於研究者的研究室中，並以上鎖的櫃子加以妥善保存，保存時間約為一年。本研究之結果，僅供學術使用，將不做其他用途；本研究的資料沒有對錯或好壞的判斷，您的所有資料將被匿名保密。基於我們對於您個人權益的尊重，本研究對您有以下的承諾：

※您有權隨時停止作答，並且不會因此而受到懲罰，也不會影響您與安養機構之間的關係。

※您有權要回您的資料，並且撤銷被納入分析。

※如有任何疑問，您可隨時經由參與者聯中所附之聯絡方式與研究人員進行聯絡。

如您同意參與本研究，請於下行簽上您的姓名與日期，謝謝您。

本人已詳細閱讀本同意書，並同意參與研究。

參與者簽名：_____ 日期：____年____月____日

研究者簽名：_____ 日期：____年____月____日

再次感謝您。

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