EFFECTIVENESS OF INTERGENERATIONAL PROGRAM IN IMPROVING COMMUNITY SENIOR CITIZENS' GENERAL HEALTH AND HAPPINESS

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Abstract

Intergenerational programs (IGPs) encourage senior citizens to continue engaging in social participation, preserving their independence, and enriching their later life. However, IGPs in Taiwan (IGPs-T) are not prevalent and generally more apply between children and senior citizens exist only, which lack in-depth exchanges the senior citizen's life experience and communication the young people. Relevant empirical results regarding the effectiveness of IGPs activities on community senior citizens' health and happiness are lacking. The objective of this study was to improve the mutual understanding and inclusion between community senior citizens and young generations, thereby improving the senior citizens' physical and mental health functions and happiness.

This was a two-group pre and post-test quasi-experimental study design and purposive sampling was used to recruit community senior citizens in Taipei City as research participants (N = 118). The experimental group (n = 55) received 90-min IGP-T activities once a week for 8 weeks. The control group (n = 63) received general health services providing by community health nurses in community.

The outcomes of the experimental group significant progress in the happiness (t=2.82, p=.007), and emotional well-being (EWB) (t=4.61, p≦.001) from pre-test to post-test. And the experimental group was significantly superior to control group in perceived health status (PHS) (t=3.79, p≦.001), happiness (t=3.82, p≦.001), and emotional well-being (EWB) (t=4.93, p≦.001) at post-test, and achieve a statistically significant difference.

The results confirmed the IGP-T may foster the value exchange and social interaction between young people and senior citizens and is an effective approach for improving the PHS and EWB and happiness of community senior citizens.

Keywords: Intergenerational program in Taiwan (IGP-T), perceived health status (PHS), happiness, emotional well-being (EWB).

Introduction

In Taiwan, the average life expectancy is 79.51 years of age (male: 76.43; female: 82.82). Prolonged average life expectancy has resulted in a rapid increase in the elderly population and in the aging index. For example, the elderly population in Taipei City was 13.04% with an aging index of 91% it was substantially higher than those in the United States (65%) and Canada (87.5%). (Department of Statistics, Ministry of the interior, 2013).This population ageing not only make problem of generation gaps has deteriorated increasingly but also challenges of public health policies and socioeconomic development.

Intergenerational exchange has been considered a crucial strategy for passing down intelligence and enhancing the social participation and physical and mental health of senior citizens (Souza & Grundy, 2007). Although the increased rate of population aging and increasing number of small families in Taiwan is similar to that in Western societies, the proportion of community senior citizens living alone has increased rapidly without the occurrence of intergenerational exchange. Intergenerational programs (IGPs) have been primarily applied to the fields of social work, senior education, early childhood nursery and education, and human development, but rarely to medicine, nursing, and health-related profession. Most senior citizens have interacted with preschool children or elementary students, and the IGPs have emphasized the teaching of skills and history described. This type of intergenerational interaction lacks bidirectional value exchanges between senior citizen and young people. In addition few studies have investigated the empirical effectiveness of IGPs intervention on the physical and mental health of community senior citizens.

The increasing elderly population and life expectancy have prompted social and healthcare professionals to consider the health and happiness of senior citizens. In aging research, topics such as well-being, life satisfaction, and quality of life have been extensively discussed. By contrast, few studies have explored the topic of happiness, particularly in Asia because senior citizens in Asia typically express their emotions implicitly and, consequently, subjective expressions of happiness are not commonly

exhibited. However, happiness is a genuine, subjective emotional perception that can reflect the mental health status of people.

Studies have indicated that the overall performance of senior citizens participating in community activities is substantially correlated with their physical and mental health and interpersonal interaction (Horowitz, Wong, & Dechello, 2010). However, physical health and interpersonal networks typically deteriorate with age, thereby influencing mental and emotional health. By organizing interactive activities between generations, IGPs can encourage young generations and elderly people to achieve an understanding of senior generations and exchange life experiences and values with each other. IGPs can increase senior citizens' energy, enhance their confidence and self-identity, and enable them to feel socially accepted (Horowitz, Wong, & Dechello, 2010). In addition, continual social participation is a crucial indicator of maintained mental functions and independence among senior citizens. Studies have reported that IGPs can broaden senior citizens' social networks. Planned exchanges between members of distinct generations can elevate senior citizens' perceived health, happiness, and well-being and thereby actively benefit the physical, mental, and social health of senior citizens (Horowitz, Wong, & Dechello, 2010, Krout, et.al, 2010,). Therefore, methods for encouraging senior citizens to continue engaging in social participation, extend their interpersonal network, and improve their physical and mental health through IGP-T are the major focus of this study.

Health and Happiness

Health, participation, and security are the key components of active ageing. Maintaining autonomy and independence is the goal of active ageing for older people. Active ageing can extend healthy life expectancy and quality of life. The WHO is committed to promoting active ageing as an indispensable component of all development programs. Ageing occurs within the context of friends, work associates, neighbors, and family members. This is why interdependence and intergenerational relationships are crucial tenets of active ageing. (WHO, 2002)

Healthy aging refers to a person adopting healthful behaviors to maintain or strengthen their physical and mental functions and become an energetic person who actively integrates into society (Walker, 2002). In addition, healthy ageing entails maintaining independence and autonomy in a stable social environment, and maintaining meaningful interpersonal relationships. Physical, mental, and social optimization involves several crucial factors, such as maintaining physical, psychological, and mental functions, and continuing to actively engage in social activities. The MacArthur Foundation emphasizes research that focuses on a positive aging

perspective, which involves the belief that maintaining happiness and participation at the psychological and social levels is the key to successful aging (Rowe & Kahn, 1998). Aging is not only longer equivalent to poverty, sickness, and dependency. But also to prolonged average life expectancy, optimal health and happiness in later life is the ultimate expectation and aspiration of senior citizens.

Happiness as an integrated psychological index used to evaluate people's quality of life; it is a subjective attitude, which includes life satisfaction, positive emotions, and negative emotions. The overall evaluation of these three elements is conducted based on three characteristics: subjectivity, comprehensiveness, and relative stability (Diener, 2000). Research has suggested that perceived health status is an essential predictor of happiness. People who subjectively perceive their health status as satisfactory possess higher levels of happiness than people who perceive their health status as unsatisfactory. Healthy people typically have high life satisfaction. Therefore, perceived health status exhibits higher indicative significance regarding Physical and mental health than other physiological measurements do (Yu, Chen, Syu, Chung, Chao, 2012).

Happiness varies depending on personal need satisfaction, life events, personality traits, and comparison standards. In addition, comparison standards inherently involve racial and cultural differences. Lu (1998, 2005) measured the meaning and correlates of happiness among Chinese people in Taiwan, Hong Kong, and mainland China, using key elements such as work achievement, sense of self-control, and interpersonal harmony. These elements are similar to active aging concepts, such as persistence, independence, continued social participation, and intergenerational harmony. And the instrument is applied to measure the general health of the community older adults.

Influence of Intergenerational Exchange on Senior Citizens

Intergenerational research emerged during the 1960s because of problems related to the generation gap in the western societies. Subsequently, emphasis on related concerns, including the drastic increase in the elderly population, the depreciation in the role of senior citizens, changing family structures, the increasing generation gap, and intergenerational inclusion, has caused intergenerational services to expand rapidly worldwide (Hatton-Yeo, 2000). The United Nations Educational, Scientific and Cultural Organization indicated that participating in social learning activities can ensure the independence of senior citizens and enrich their later life. Frequent exchanges between generations can improve intergenerational communication and ease the tension between generations (UNESCO, 2000). Intergenerational exchange provides senior citizens with

the opportunity for continual social participation, enriches the learning activities of senior citizens, and contributes to the mutual understanding and development of distinct generations (Renee´ A, 2011).

Based on experiential learning theory, IGPs provide scenarios and themes for the interactions of senior citizens and the young generation. By emphasizing the concepts of experience transformation and meaning construction, IGPs guide learners to act and reflect on their experiences, thereby contributing to optimal interaction between two generations. (Gregory, Barbara, 1993., Carol, Paul, Kari, Gilliland, Ó'Flathabhain, 2010).

The major effective of intergenerational exchange involves the following goals for improving senior health: increasing senior satisfaction in passing down life experiences, developing intergenerational understanding, and guiding senior citizens and young generations to demonstrate mutual respect and recognition (Souza, & Grundy, 2007). Studies have confirmed that senior citizens believe that intergenerational exchange helps them improve family interaction, develop self-confidence, and express positive attitudes. The social values and benefits of IGPs include uniting separated generations, recapture and reassessing the transmission of traditional culture, sharing resources among environments, contributing to lifelong learning, challenging social problems cross-generationally, and encouraging active cross-generational work and social life (Hatton-Yeo, 2000).

The purpose of this study was to promote IGP-T. We believe that IGP-T can provide a communication and exchange platform for younger and older generations and convey the fashion and values of these generations to increase intergenerational familiarity, thereby preventing intergenerational differences from being rejected. In addition, IGP-T enables the two generations to share life experiences with each other and learn from each other. This experience sharing improves both senior citizens' and young generations' ability to face and cope with challenges, thus increasing the physical and mental health and happiness of senior citizens.

Method

This study major focused on the effects of intergeneration program, health, and happiness. After completing the development of an IGP-T through a pilot study, we used a quasi-experimental design and grouped the senior citizens according to their willing. The experimental group participated in 90-min IGP-T activities once a week for 8 weeks, whereas the control group maintained their regular daily routine in the community.

The research participants were home-based senior citizens 60 years of age or above who could communicate orally without being affected by their visual or auditory perception abilities, possessed normal recognition functions, and could go outside independently. Data were collected before

the intervention (Time 1, T1) and 8 weeks after the intervention (Time 2, T2). Initially, 129 senior citizens agreed to participate in this study and informed consent. At the end of the period, matching data for the two tests were obtained from 55 and 63 participants belonging to the experimental and control group, respectively. The total attrition rate was 8.53%; four participants(6.78%) dropped out from the experimental group because of illness and care of their families and 7 participants (10%) dropped out from the control group due to abroad, be hospitalized, moving, rehabilitation and unable to get in touch.

Intergenerational Program

In this study, the IGP-T integrated intergenerational communication, healthy life, and resource connection ideas. The activities of IGP-T, including intergenerational group activities, were performed for 8 weeks (90 min each week) at a community activity center. The structure of each group activity comprised four parts: warm up (light exercise), intergenerational communication (two generation exchange or share various topics such as healthy, life meaning, how to create an intimate relationship, to face of end of life), health promotion (providing knowledge on treatment of common health problems pertaining to topics including eyes care and take water healthy), traditional wisdom (sharing old generation slang and Taiwanese Hokkien), and new fashion words (sharing popular expressions of the young generation). Through exchanges and sharing conducted using diverse methods, the two generations became familiar with each other's language and culture. In addition, during the 8 weeks, a plan of "we make life better"was implemented among the groups. The services provided and contents individual senior citizens and young college students expected to learn were matched and exchanged. For example, the senior citizens exchanged cooking skills with students' skills in operating smartphones, Tai Chi with the skill of editing electronic albums, and personal collections with students accompanying senior citizens to visit old friends. These exchanges substantially enhanced the intergenerational experiences of the participants. At the end of the IGP-T, the senior citizens and students planned the closing ceremony jointly. The ceremony exhibited results and gains in the form of actions expressing warm feelings, and the development and experiences of the participants were reviewed through the presentation of a video. Finally, an IGP-T certificate and address lists were offered to the participants to conclude the group-based program.

Measures

A semi-structured questionnaire survey method was adopted to collect data, including demographic, general health (perceived health status,

physical and mental functions), and happiness (happiness and emotional well-being) data.

Perceived health status (PHD): This is a subjective perception of health. This subscale included one item and was rated on a 5-point scale from *very good* (5 point) to *very poor* (1 point). Because this subscale is easy to understand and answer, it has been frequently used in large-scale research or surveys on middle-aged and elderly groups. Scholars have considered the subjective health perception of senior citizens to be more influential to their quality of life and life satisfaction compared with the influence of objective health status. Moreover, the subjective perception of health can be used to predict mortality (Chang, & Huang, 2002).

Physical and mental functions: This study used a short-form health survey (SF-12) to evaluate the general health functions of community senior citizens. SF-12 which includes a Physical Component Summary (**PCS**) and Mental Component Summary (**MCS**), achieving high correlation as the MOS 36-Item Short-Form Health Survey (SF-36) (r = .95; .97) (Ware, Kosinski, & Keller, 1996, 1998). High scores represent superior overall condition. In this study, the PCS and MCS Cronbach's α were .79 and .80, respectively.

Happiness: Happiness was assessed using the Chinese Happiness Index (short form) developed by Lu (1998). This scale has been used in Taiwan, Hong Kong, and mainland China, covering 10 items on the cultural aspect of Chinese people's happiness. The items include happiness, vigor, life meaningfulness, optimism toward the future, current life, joy and excitement, understanding of life meaningfulness, sense of achievement regarding learning performance, and delight in recalling life memories. The overall reliability of the index was .87, with a total variance explained of 45.6%. The scale was rated on a 4-point scale (0–3) and the scores ranged from 0 to 30. The participants evaluated their overall life perception in the most recent 3 months. A high score represented a high level of happiness. In this study, the Cronbach's α for happiness was .85.

Emotional well-being (EWB): We used the intuitive delighted-terrible faces scale developed by Andrews and Withey (1976) to measure emotional well-being. The expressions comprised seven characteristics from "delighted" to "terrible," with a score from 1 to 7 points. A high score represented a high level of emotional well-being.

Data Collection and Data Analysis

The research data were analyzed using SPSS software version 20.0 for Windows. Two interviewers who had been trained in administering questionnaires consistently assisted in collecting and tracking secondary data, but neither participated in the intergenerational exchanges, or was aware of the grouping arrangement. Descriptive statistics based on percentages, means, and standard deviations were used to understand the

central and dispersion tendency of the data. After confirming that the data satisfied normal distribution, a chi-square test for categorical data on demographics was conducted to identify whether differences between the experimental and control groups existed before the group intervention was conducted. The inferential statistics were derived from Pearson's *r* and Spearman's rho, which are correlation tests of continuous and categorical variables, a paired *t* test, and an independent *t* test. These statistical tests were used to compare whether significant within-group and between-group differences existed in the experimental and control groups before and after the intervention. The data were collected during the period September 2012 to August 2013.

Results

Data for the IGP group were collected at the beginning of the IGP (T1) and after concluding the 8-week activities (T2). Table 1 shows the demographic, health and social status of both groups. There were no significant differences between the groups.

Demographics and Research Variable Description of the Two Senior Citizen Groups

A total of 118 people participated in this study (55 elderly persons in the experimental group, 63 persons in the control group). The average age of the senior citizens recruited in the experimental and control groups were 71.13 (*SD* = 6.23) and 70.37 years (*SD* = 7.51), respectively. The proportion of women, married participants, and participants with a family structure comprising two generations was relatively high in both groups. Most of the participants relied on personal savings or retirement pensions as a source of finance and perceived their economic status to be balanced between income and expenditures or enjoyed a surplus. Nearly 80% of the senior citizens were diagnosed with at least one chronic disease. The test results for the various demographic data ($p > .05$) indicated that the experimental and control groups did not exhibit statistically significant differences. **(Table 1)**

Table 1Description of demographic (*N*=118)

Variable		experimental group (*n*=55)			control group (*n*=63)			X^2/F	*p*
		Range	*M*	*SD*	Range	*M*	*SD*		
Age		60-87	71.13	6.23	60-92	70.37	7.51		
		(n)		(%)	(n)		(%)		
Gender								1.15	NS
	Male	13		23.6	21		33.3		
	Female	42		76.4	42		66.7		
Married status								6.95	NS
	never married	4		7.3	1		1.6		
	married	34		61.8	45		71.4		
	divorce	5		9.0	3		4.8		
	widowed	12		21.8	14		22.2		
Education (y's)								.27	NS
	≦ 6years	11		20.0	25		39.7		
	7-12years	27		49.0	25		39.7		
	≧12 years	17		30.9	13		20.6		
Main source of income								4.85	NS
	Self	40		72.7	47		74.6		
	children	8		14.5	13		20.6		
	Social welfare	7		12.7	3		4.8		
Perceived economy status								6.53	NS
	Enough	20		36.4	19		30.2		
	Balance	28		50.9	39		61.9		
	Shortage	4		7.3	3		7.9		
	Unstable	3		5.5	0		0		
chronic disease								.10	NS
	No	11		20.0	11		17.5		
	Yes	44		80.0	52		82.5		

Note: NS (*p*>.05)

In Time1, regarding perceived health status, the experimental and control groups respectively attained 2.82 (*SD* = .86) and 2.48 (*SD* = .93), ranging from ordinary to good health status. Regarding physiological health functions, the experimental and control groups respectively attained41.09 (*SD* = 3.54) and 41.58 (*SD* = 4.20); regarding mental health functions, the experimental and control groups respectively attained 58.99 (*SD* = 5.10) and 58.58 (*SD* = 5.53), which was similar to the normal score of 50 for physiological and mental health functions established by the SF-12 in the United States (Ware, Kosinski, & Keller, 1996&1998). Regarding emotional well-being, the average value of the two groups ranged from 5.49 and 5.32, indicating mostly satisfied. Regarding happiness, the average scores for the experimental were 15.87 and control groups were 14.87, which was slightly lower than the results of a happiness study on senior citizens conducted in Taiwan (experimental group, 20.7; control group, 21.8, Yen, 2012). Despite the lower scores, the scores obtained in this study remained within an

acceptable scope (5–22 points). Briefly, the demographic data for the two groups of senior citizens did not reveal statistically significant differences before the IGP-T intervention.

Comparing Differences in General Health and Happiness within and between IGP-T interventions

In comparing the T1-T2 difference within the experimental group, the average posttest (T2) scores of happiness and emotional well-being of the participants were higher than those of the pretest (T1), achieving statistical significance. Although the average T2 scores of PCS and MCS were higher than that of T1, the difference did not reach statistical significance **(Table 2)**.

Table 2: Compare the Different of T1-T2 within the experimental group (*N*=55)

Variable	T1			T2			$t_{(54)}$	*P*
	M	*SD*	*Range*	*M*	*SD*	*Range*		
PHS	2.82	.86	1-5	3.13	1.11	1-5	1.89	.065
PCS	41.09	3.54	33-63	42.50	4.00	33-73	1.22	.23
MCS	58.99	5.10	30-63	59.49	5.03	27-65	.28	.78
EWB	5.49	.94	4-7	5.98	.85	4-7	4.61^{***}	≦.001
Happiness	15.87	5.46	2-27	17.76	4.83	8-28	2.82^{**}	.007

Note: Perceived health status (PHS), Physical Component Summary (PCS) , Mental Component Summary (MCS), Emotional well-being (EWB).

*p<.05, **p<.01, ***p<.001

In the control group, although the primary variables fluctuated slightly during T1 and T2, the difference did not reach statistical significance, indicating that no difference within the control group existed between T1 and T2 **(Table 3).**

Table 3: Compare the Different of T1-T2 within the control group (*N*=63)

Variable	T1			T2			$t_{(62)}$	*P*
	M	*SD*	*Range*	*M*	*SD*	*Range*		
PHS	2.48	.93	1-5	2.41	.94	1-5	-.55	.58
PCS	41.58	4.20	27-66	39.78	4.99	20-63	-1.74	.09
MCS	58.58	5.53	35-63	56.48	5.75	31-63	-1.59	.12
EWB	5.32	1.20	1-7	5.14	.98	2-7	-1.28	.21
Happiness	14.87	4.97	2-26	14.30	4.99	2-26	-1.68	.10

Note: Perceived health status (PHS), Physical Component Summary (PCS) , Mental Component Summary (MCS), Emotional well-being (EWB).

The differences between the experimental and control groups were compared. In T1, a Levene (F) test was conducted. Assuming that the two groups of data variables were equivalent and the *p* values were higher than .05, the null hypothesis was accepted, indicating the homogeneity between the experimental and control groups. No between-group difference was identified in T1. In comparing the differences between the experimental and control groups for T2, the results indicated that the scores of the experimental group increased for the perceived health status, PCS, MCS, emotional well-being and happiness variables. By contrast, although also changing over time, the control group scores showed a slight decline in T2 regarding the perceived health status, PCS, MCS, and emotional well-being variables. The T2 data for the two groups achieved a statistically significant difference among the three major variables: perceived health status ($p \leqq .001$), happiness ($p \leqq .001$), and emotional well-being ($p \leqq .001$). The results confirmed that the IGP-T helped enhance the self-health evaluation of community senior citizens and improve happiness and emotional well-being, thereby substantially benefiting and ameliorating the overall mental and emotional health of senior citizens **(Table 4)**.

Table4: Compare the different of T1-T2 between two group (*N*=118)

Variable	Experimental group (*n*=55)				Control group (*n*=63)				$t_{(54,62)}$		*P*	
	T1		T2		T1		T2		T1	T2	T1	T2
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*				
PHS	2.82	.86	3.13	1.11	2.48	.93	2.41	.94	2.06	3.79	.042	≦.001
PCS	41.09	3.54	42.50	4.00	41.58	4.20	39.78	4.99	.98	2.76	.33	.07
MCS	58.99	5.10	59.49	5.03	58.58	5.53	56.48	5.75	1.58	2.83	.12	.05
EWB	5.49	.94	5.98	.85	5.32	1.20	5.14	.98	.86	4.93	.39	≦.001
Happiness	15.87	5.46	17.76	4.83	14.87	4.97	14.30	4.99	1.04	3.82	.30	≦.001

Note: Perceived health status (PHS), Physical Component Summary (PCS) , Mental Component Summary (MCS), Emotional well-being (EWB).

NS (*P*>.05), **p*<.05, ***p*<.01, ****p*<.001

Discussion

The main findings of this study showed a significant improvement in the perceived health status, happiness, and emotional well-being after eight IGP-T sessions. The findings provide initial evidence for the effectiveness of intergenerational program in community elderly people. In this study, no participants reported adverse effects during the study period. Moreover, the

IGP-T activities promoting the meaningful experience to elderly people, because they can meet new friends, improve personal health management capacity, and increase emotional adaptation. The results of this study confirmed that the IGP-T can effectively improve the perceived health, happiness, and emotional well-being of community senior citizens. The following passages present a discussion on the intervention effectiveness of intergenerational group activities and other senior groups.

By referencing the Survey of Health and Living Status of the Middle Aged and Elderly in Taiwan from 1996 to 2003 (N = 3442), we established indices for successful aging, including physiological, mental, and social health and emotional well-being (Bureau of Health Promotion Department of Health, Taiwan, 2006). In this study, the perceived health status, SF-12 (PCS and MCS), happiness, emotion well-being were used to evaluate the effects of IGP-T on the physiological and mental health of senior citizens. The Time 2 data for the experimental groups indicated that all six major variables improved after performing the experimental intervention, and perceived health status, happiness, and emotional well-being achieved a statistically significant difference. The SF-12 results for the T1-PCS (50.40, SD = 8.40) and MCS (50.24, SD = 8.70) were similar to the norm established in the United States (50). After the experimental intervention, the PCS and MCS scores increased slightly yet did not achieve statistical significance. Initial inference and SF-12 item descriptions focused on functional health, such as the ability to move desks and chairs and climb stairs, and the influence of health problems on social activities. The IGP-T aimed to improve intergenerational exchanges and self-health management; thus, the effectiveness of the IGP-T was significant regarding mental health, perceived health, and emotional well-being. This result is in accordance with previous results, which indicated that intergenerational learning facilitates positive psychological perception, life satisfaction, and successful aging, despite the negative perspective that intergenerational learning cannot prevent physiological degeneration（Horowitz, Wong, & Dechello, 2010, Carmen, & Marta, 2008,).

Correlation between senior health and happiness

Various studies have demonstrated that senior happiness differs between the genders. Taiwanese research has maintained that elderly women possess higher levels of life satisfaction and happiness than elderly men do (Lu, 2000. & 2006). Nonetheless, international studies have indicated that men exhibit a higher level of happiness than women do, or that no difference in happiness levels exists based on gender (Lu, 2000. &2006). Married senior citizens who are satisfied with their marriage have a higher level of mental happiness than the widowed or unmarried. Senior citizens with a high

education level typically possess high ability in comprehending information and exhibit positive self-concepts.

After reviewing the experimental and control groups, although the demographic characteristics did not reach a statistically significant difference, the following demographic attributes exhibited high heterogeneity: illiterates, graduates from research institutions, housekeepers, cleaners, retired public servants, and unmarried or widowed people. According to the literature, happiness is a subjective cognition and overall perception that is not necessarily correlated to multiple demographic characteristics. A number of studies have uniformly indicated that health status is the key factor influencing the happiness of senior citizens. The results of these studies correspond with the results in this study, showing that physiological and mental health functions, emotional well-being, and perceived health status were significantly and positively correlated with happiness. Through the IGP, senior citizens can enjoy learning and receive the support of friends and group members. The multiple interactional activities of IGP-T affirmed the personal value of senior citizens. During the process, senior citizens can fully imbibe the vigor, care, and acceptance of the young generation, thereby increasing the happiness of community senior citizens. Moreover, the IGP-T process substantially benefits subjective health perceptions, such as improving perceived health and emotional well-being, which corresponds to the previous studies results that positive emotions can effectively increase the level of happiness (Lu, 2000, 2005 & 2006).

Intervention effectiveness of intergenerational and other senior groups

Senior groups enable senior citizens to achieve the following: gain peer support, establish new friendships, accept new roles in life and social status, increase the sense of belonging and safety, enhance self-esteem and respect, reevaluate standards and norms of behavior, learn to grow, and develop new functions (Corey, & Corey, 1992). Compared with the control group, the experimental group in the present study exhibited superior quality of life, happiness, well-being, life satisfaction, and active functions and achieved the benefits of reduced depression and loneliness. These results were consistent with Yalom's (1985) response regarding the perceived benefits from participating in interpersonal group learning and outputs, including altruism, the development of social techniques, the instillation of hope, existential factor therapeutic factors are consistency (Corey, Corey, 1992).However, few studies based on IGPs intervention have been conducted. The IGPs has been commonly used in lower-grade student local cultural education and technique inheritance. By contrast, foreign studies have comprised participants with a wide age range. In addition, IGPs have been frequently applied to curricular design in subjects such as gerontology,

developmental psychology, and community services. The bulks of research results have adopted a descriptive design or have focused on student learning evaluation, and only few studies have used a quasi-experimental design.

In contrast to general service learning and group activities, IGPs equally emphasize the importance of senior citizens and young people. The group host must use various strategies and subjects to enable senior citizens to talk to and interact with students. Subsequently, the host transfers leadership stepwise to group members, thereby enabling the members to understand the value of the experiences of other generations, and provide knowledge and services to the other party. Overall, senior citizens in the experimental group recognized that the IGP-T differed from previous experiences with community care activities and found the experience refreshing. During the IGP-T activities, the senior citizens approached and experienced the energy and vigor generated by members of young generations. In the group, the senior citizens looked forward to exchanging knowledge and meeting with the young participants each week. The senior citizens expressed that the ordinary, daily experiences they encountered throughout the course of their long life (e.g., selecting fresh and inexpensive vegetables and fruits, engaging in Tai-Chi, performing manual weaving, and acquiring life stories) were life treasures that young university students had never experienced. The senior citizens were glad to establish a mentorship with the students and the process of experience inheritance and exchange considerably encouraged the senior citizens to recognize the uniqueness and value of their life experiences. The university students accompanied the senior citizens during rehabilitation therapy and visit to old friends; taught them the skills required to operate computer, communication, and consumer electronics; and participated and assisted in the senior citizens in writing their life diaries, enabling the senior citizens to perceive the thoughtfulness and respect of the young generation. Through IGP-T either the elderly or young people are really feeling life is better.

Possible factors that inhibited the senior citizens from participating in the IGP-T can be divided into personal, family, and community resources. The personal health factors, such as medication and rehabilitation needs, were the primary causes of group absence in this study. In addition, senior citizen motivation for and attitude towards intergenerational interaction influenced the activeness of the participants and the effectiveness of the program. For example, a portion of the senior citizens considered them to be old and outdated having nothing to teach the younger people. In addition, several senior citizens considered the purpose of participating in groups to be making friends and passing the time, and thereby lacked learning and exchange preparation. Regarding family, traditional Taiwanese women typically use house chores as a critical source of self-affirmation. Therefore,

despite their average age of 70 years, the elderly women in this study frequently assumed the role of care provider or rescuer of the family, taking care of a sick spouse or grandchildren, welcoming returning children, and helping with postnatal care. Thus, these factors contributed to the motivation and continuity of the senior citizens in participating in the study group. The obstacles of the community resources included the accessibility and convenience of selecting group activities, whether services provided by the senior citizens and the content they expected to learn matched the needs of university students, the financial support, and the continuity of services provided by the students.

Conclusion

Studies have confirmed that numerous senior citizens believe that intergenerational exchange helps them improve family interactions and develop confidence and positive attitudes. In addition, intergenerational exchange provides opportunities for different generations to learn from and share knowledge with each other to enhance learning effects, thereby establishing consensus between the older and younger generation. Consequently, the two generations share their life courses and face challenges and problems in life together. The concept of intergenerational exchange has attracted considerable international attention and has been developed and integrated continually into various activities. However, IGPs-related research has not been conducted extensively in Taiwan. Compared with the emphasis of intergenerational learning on university students in the United States, the intergenerational learning conducted in Taiwan has focused on the relationship between senior citizens and preschool, elementary, or middle school students. In Taiwan, the interaction commonly involves senior citizens sharing life experiences and increasing student learning interest through their cultural heritage; for example, teaching folk arts and traditional songs, and providing knowledge about local cultures. This type of intergenerational exchange can reconstruct the life pictures of senior citizens, enable self-affirmation, improve positive perspectives toward aging awareness, and provide successful aging models.

However, the physiological health functions of neither the experimental nor the control group exhibited significant differences before and after the intervention. This may be caused by nearly 80% of the senior citizens with chronic disease just maintained their physiological functions and did not manage to improve them. However, the major psychological variables, perceived health status ($p \leqq .001$), happiness ($p \leqq .001$), and emotional well-being ($p \leqq .001$), all demonstrated statistically significant differences before and after the group intervention. This result indicated that engaging in the IGP-T once a week helped enhance the subjectively

perceived health of community senior citizens, thereby improving the overall perception of happiness among the community senior citizens. Therefore, IGP-T activities are extremely beneficial for improving mental and emotional health and should be continued and promoted in communities.

Limitations and Suggestions

No empirical research has been conducted on the effectiveness of IGPs in improving the overall health of community senior citizens in Taiwan. Although the IGP-T intervention result of this study indicated positive effects on improving the healthy aging and happiness of senior citizens, the stability and continuity of the effectiveness must be retested using larger sample sizes.

The research results indicated that residential environments (e.g., cities, suburbs, and rural villages), and social support all significantly affected community senior citizens' happiness. Future studies should further investigate these variables.

We adopted purposive sampling to select research participants; therefore, the effectiveness of inference should be further examined. We recommend that IGPs based on the differences in senior citizen characteristics and community resources between urban and rural areas be developed in future studies.

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