

# 休閒教育影響老人壓力之研究

## 摘要

本論文由三個研究報告集結而成。研究一試圖使用休閒自主與休閒社會支持作為控制變項，探討老人休閒勝任與壓力之關係。為探討此關係，研究者使用休閒自主、休閒勝任、休閒社會支持以及壓力量表調查 256 位基隆市老人，然後採取迴歸分析，解析這些資料。研究結果指出，休閒勝任與壓力顯著負相關。在研究二中，研究者進一步採用實驗法，探討休閒勝任對於壓力之影響。研究者採取勝任取向的休閒教育方案作為實驗介入，然後隨機分派 30 位受試者至實驗組參與此方案，同時也分派 29 位受試者至控制組(無任何介入)，之後使用共變數分析，探討實驗組與控制組受試者在實驗前後的壓力是否顯著改變。研究結果顯示，實驗組受試者的壓力顯著低於控制組受試者之壓力。然而，在研究三中，研究者並未發現勝任取向的休閒教育方案具有長期減輕壓力的功效。最後，研究者進一步討論以上結果之意涵。

**關鍵詞：**休閒自主、休閒勝任、休閒社會支持

# **The Effect of a Leisure Education Program on Stress among Older Adults**

## **Abstract**

This paper consists of three studies. Study 1 examined the relationship between leisure competence and stress among older adults after controlling for leisure autonomy and leisure social support. Two hundred fifty-six older adults living in Keelung City were selected as participants. Data were collected by a face-to-face questionnaire survey which included measures of leisure autonomy, leisure competence, leisure social support, and stress scales. The data were analyzed using a regression analysis. The results showed that leisure competence was significantly negatively related to stress. In study 2, a pretest-posttest randomized experimental design was conducted to determine the effect of leisure competence on stress. A competence-based leisure education program was used as the intervention. Subjects were randomly assigned to either the experimental ( $n = 30$ ) or control group ( $n = 29$ ). Before this experiment was carried out, pretest data were collected by the stress scale mentioned previously. Posttest data were collected by the same scale after the experiment. The pretest and posttest data were analyzed using an analysis of covariance. The results showed that the average stress scores of the subjects in the experimental group were significantly lower than those of the subjects in the control group. However, study 3 did not confirm that the program had a long benefit to stress reduction among the subjects. Implications of the results are discussed.

**Keywords:** leisure autonomy, leisure competence, leisure social support

## **Introduction**

Over 60.0% of older adults are daily bombarded by stress (Bureau of Health Promotion, BHP, 2006). Because stress is implicated as a factor contributing to some of the ill-health experienced by older adults, such as anxiety, depression, and headaches (BHP, 2006; Choi, Ransom, & Wyllie, 2008), it is necessary for most older adults to cope with stress in order to improve health.

Stress is primarily a product of one's appraisal of a stressor (Lazarus & Folkman, 1984; Tak, Hong, & Kennedy, 2007). There are two kinds of appraisals: primary and secondary. Primary appraisal determines whether a negative event is considered to be a stressor. In secondary appraisal, people evaluate what can be done to cope with this event if it is viewed as a stressor in primary appraisal (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). Coping refers to people's behavioral and cognitive efforts to manage the demands of a negative event that has been appraised as a stressor. Two forms of coping have been identified: (1) Problem-focused coping, which aims at dealing with the stressor and (2) Emotion-focused coping, which aims at decreasing perceived stress that is associated with the negative event (Folkman, Lazarus, Gruen, & DeLongis, 1986). Studies of aging show that younger adults prefer to deal with the stressor in the problem-focused coping style, while older adults tend to cope with stress in the emotion-focused coping style (Blanchard-Fields, Jahnke, & Camp, 1995; Mehlsen et al., 2009). Furthermore, although older adults must face many severe stressors that they cannot remove, such as disabilities, chronic diseases, and loss of loved ones, they have greater emotional functioning that can enable them to cope with stress (Ong & Bergeman, 2004). Therefore, identifying emotion-focused factors which can strengthen the emotional functioning of older adults is important in order to reduce their stress.

Self-determination theory (SDT), which is viewed as a macro-theory that addresses such basic issues as universal psychological needs, self-regulation, personality development, life goals and aspirations, and the impact of social environment on motivation, behavior, health, and well-being (Deci & Ryan, 1985, 2008), has recently been applied to the field of stress management (Ntoumanis, Edmunds, & Duda, 2009; Weinstein & Ryan, 2011). According to SDT, autonomy, competence, and relatedness are three basic human needs. Autonomy refers to one's free choice and initiative in activities. Competence corresponds to the capacities to deal with the activities in which one participates. Relatedness pertains to one's connectedness with others. When satisfied, these three needs will contribute to one's psychological health (Deci & Ryan, 2008). SDT further indicates that autonomy not only encourages one to take an interest in one's own experiences in the face of stress but also facilitates a fuller processing of emotions related to stressful events over time. Autonomy enables one to decrease stress by promoting better emotional health (Ntoumanis et al., 2009; Weinstein & Ryan, 2011).

SDT also suggests the possible mechanisms by which competence can enable people to decrease stress. First, competence can result in positive emotions that enable people to prevent incursion of stress. Second, it can create constructive feedback, such that people perceive themselves as being able to deal with a negative event. Thus, this event is not considered to be a stressor (Weinstein & Ryan, 2011).

Several SDT-related studies show that the relatedness concept involves social support, belongingness, and loneliness. Social support is the most frequently reported relatedness concept associated with stress management and depression improvement studies (Hagerty & Williams, 1999; Vanderhorst & McLaren, 2005). Therefore, relatedness is conceptualized as a social support here. Gerontology indicates that social support refers to older adults' perceptions that they are cared for by family and friends and that adequate support will be available. It enables them to decrease stress by emotion-focused comfort and/or aid to solve problems (Tak, 2006; Tak et al., 2007). In brief, autonomy, competence, and social support are three emotion-focused factors that may enable older adults to decrease stress.

Leisure-based studies suggest that leisure activities, in contrast to necessary tasks such as daily routines and obligatory work, provide participants with more opportunities to exercise autonomy and contribute to their sense of competence (Caldwell, 2005; Trenberth, 2005). Leisure autonomy can further be defined as the perceptions that older adults' leisure behaviors are expressed within a context of freedom and that they can perceive freedom within this context; leisure competence can be defined as the perceptions that they perceive themselves as having the capacities to deal with their leisure activities and that they control their own behaviors. Moreover, participation in leisure activities can also serve as an effective avenue for older adults to develop larger networks of friends who become leisure companions, thus helping them receive and perceive more social support (Chalip, Thomas, & Voyle, 1992). Leisure social support refers to their perceptions that they are cared for by leisure companions and that adequate support will be available when they need it. From the above, a combination of the findings from SDT-related and leisure-based studies implies that promoting the leisure autonomy, leisure competence, and leisure social support of older adults may be a more accessible manner to decrease their stress.

Craike and Coleman (2005) showed that leisure autonomy significantly moderated the negative effects of life stress on psychological health among older adults. Sasidharan, Payne, Orsega-Smith, and Godbey (2006) confirmed that leisure social support significantly contributed to stress reduction among older adults. However, a study of the relationship between leisure competence and stress is lacking.

A cause-effect conclusion is not directly drawn from results of correlational studies. Accordingly, if we confirm that leisure competence is really related to stress, further using a

field experiment to determine the effect of leisure competence on stress is necessary in order to identify the relationship between leisure competence and stress more exactly.

Leisure education refers to an organized program intended to help participants use free time in a manner conducive to the improvement of their leisure attitudes, leisure knowledge, and leisure skills/leisure competence and the enhancement of the quality of their lives (Sivana & Stebbins, 2011). Searle, Mahon, Iso-Ahola, Sdrolas, and Dyck, (1995, 1998) have confirmed that leisure education can strengthen the leisure competence of older adults. Therefore, a leisure education program may be an appropriate intervention to examine the causal relationship between leisure competence and stress among older adults.

We not only examined the relationship between leisure competence and stress but also determined the effect of a leisure education program on stress. The results of our studies would not only contribute to a more complete understanding of how leisure competence influences stress but also provide healthcare practitioners with useful information when they are to help older adults reduce stress.

## **Study 1**

When researchers try to analyze effects of independent variables on a dependent variable in a regression model, they can add control variables that statistically correlate with the dependent variable to see if there are actually the relationships between the independent variables and the dependent variable (Kutner, Nachtsheim, Neter, & Li, 2005). Because leisure autonomy and leisure social support are significantly related to stress among older adults (Craike & Coleman, 2005; Sasidharan et al., 2006), study 1 examined whether leisure competence was significantly related to stress after controlling for leisure autonomy and leisure social support.

### **Method**

#### ***Sampling and participants***

Older adults living in Keelung City, Taiwan were selected as the study population because they may have higher levels of stress than older residents living in other Taiwanese cities (Hsu & Chang, 2004). The results of study 1 would provide useful information to help older adults living in Keelung City decrease stress.

There were three eligibility criteria for the participants: (1) aged 65 years and older, (2) residing in Keelung City, and (3) without mental problems -- Those were excluded if their family told research assistants that they were judged to have mental problems, such as dementia or suicide attempt, by the doctor. According to the data provided by the Keelung City government (Document No. 0980135105), a random sampling frame was constructed.

This sampling frame listed all adults aged 65 years and older, with their addresses in Keelung City. Three hundred adults on this list were randomly selected by a computer for inclusion. To increase the response rates, a face-to-face questionnaire survey was conducted. The assistants visited older adults' homes and asked them to respond to the questionnaire. If they agreed to participate in study 1, the assistants read out the questions for them. The assistants eventually coded 256 older adults' verbal responses to the questionnaire.

The participants in study 1 were aged 65 to 88, with a mean age of 71.5 years ( $SD = 5.39$ ). Most of them were female and married (with a spouse), and had finished primary school (Table 1).

Table 1. Characteristics of the Participants

Characteristic	<i>n</i>	%
Gender		
Women	135	52.7
Men	121	47.3
Education		
Illiterates	40	15.6
Primary School Graduates	172	67.2
High School Graduates	26	10.2
University Degree and Above	18	7.0
Marital Status		
Single	102	39.8
With a Spouse	154	60.2

### ***Questionnaire***

The questionnaire has four sections: leisure autonomy, leisure competence, leisure social support, and stress. Leisure autonomy was measured using Chang, Yu, and Sung's (2004) scale, a modified Chinese version of Weissinger and Bandalos' (1995) leisure autonomy scale. The scale contains six items related to how free older adults perceive themselves to be in making choices regarding their leisure activities. Here are two examples of the items: (1) I freely choose my leisure activities and (2) I perceive freedom when participating in leisure activities. The participants were asked to rate the degree to which they agreed with each of the items on a 5-point scale, from 1 (*not at all*) to 5 (*completely*). The reliability of the scale was reassessed by the pretest of study 1 (120 pretest participants were selected using the same sampling process). The results showed that the scale had an acceptable alpha reliability coefficient of .89.

Leisure competence was measured using Chang et al.'s (2004) scale, a modified Chinese version of Weissinger and Bandalos' (1995) leisure competence scale. The scale contains six

items related to older adults' perceived effectiveness of their ability to participate in leisure activities. Here are two examples of the items: (1) I feel competent when participating in leisure activities and (2) Leisure is what I am best at. The participants were asked to rate the degree to which they agreed with each of the items on a 5-point scale, from 1 (*not at all*) to 5 (*completely*). The reliability of the scale was reassessed by the pretest. The results showed that the scale had an acceptable alpha reliability coefficient of .88.

Leisure social support was measured using a modified Chinese version of Iwasaki and Mannell's (2000) leisure social support scale. The 16-item scale contains emotional support, esteem support, informational support, and perceived aid subscales that measure the degree to which older adults feel adequately supported by leisure companions. Examples of statements referring to each subscale are respectively listed here: (1) I feel emotionally supported by my leisure companions, (2) I feel that I am respected by my leisure companions, (3) My leisure companions give me advice when I am in trouble, and (4) My leisure companions will lend me things if I need to borrow them. The participants were asked to rate the degree to which they agreed with each of the items on a 5-point scale, from 1 (*not at all*) to 5 (*completely*). The reliability of the scale was reassessed by the pretest. The results showed that the scale had an acceptable alpha reliability coefficient of .90.

Stress was measured using Cohen, Kamarck, and Mermelstein's (1983) scale which is widely used in Taiwan (Chu & Kao, 2005; Tseng, 2009). The scale consists of 14 items. Two examples of the items are listed here: (1) In the last month, how often have you successfully coped with life hassles and (2) In the last month, how often have you felt that you were unable to control the important things in your life? The participants were asked to rate the degree of stress they felt regarding each of the items on a 5-point scale, from 1 (*never*) to 5 (*always*). The reliability of the scale was reassessed by the pretest. The results showed that the scale had an acceptable alpha reliability coefficient of .91.

### ***Data analysis***

A regression analysis was employed to examine whether leisure competence was significantly negatively related to stress among the participants after controlling for leisure autonomy and leisure social support.

### **Results**

The participants' average scores of leisure autonomy, leisure competence, and leisure social support were 16.22, 16.60, and 44.09, respectively. Their average scores of stress were 43.66. The results of the regression analysis indicated that (1) leisure autonomy and leisure social support were significantly negatively related to stress and (2) leisure competence was significantly negatively related to stress after controlling for both factors (Table 2).

Table 2. Regression Analysis for Variables Predicting Stress

Variable	<i>M</i>	<i>SD</i>	<u>Model 1</u>		<u>Model 2</u>	
			<i>B</i>	$\beta$	<i>B</i>	$\beta$
Leisure Autonomy	16.22	4.08	-0.90	-0.30**	-0.66	-0.22**
Leisure Social Support	44.09	8.06	-0.41	-0.27**	-0.30	-0.20**
Leisure Competence	16.60	4.10			-0.81	-0.28**
<i>F</i>			37.52**		33.87**	
<i>R</i> <sup>2</sup>			0.23		0.29	

\*\**p* < .01

## Study 2

Because leisure education can strengthen the leisure competence of older adults (Searle et al., 1995, 1998), it is hypothesized that leisure education can also help them decrease stress if leisure competence contributes to stress reduction. To test this hypothesis, study 2 determined the effect of a leisure education program on stress among older adults.

### Method

#### *Subjects*

Table 3. Characteristics of the Subjects in Study 2

Characteristic	<u>Experiment</u>		<u>Control</u>	
	<i>M</i> / <i>n</i>	<i>SD</i> / %	<i>M</i> / <i>n</i>	<i>SD</i> / %
Age	71.83	4.53	71.76	4.43
Gender				
Women	15	50.0	15	51.7
Men	15	50.0	14	48.3
Education				
Primary School Graduates	26	86.7	22	75.9
High School Graduates	2	6.7	5	17.2
University Degree and Above	2	6.7	2	6.9
Marital Status				
Single	7	23.3	10	34.5
With a Spouse	23	76.7	19	65.5

Potential subjects were derived from a pool of participants in study 1, whereas those who had previous training in any form of leisure education were excluded. They were given an advertisement handbill indicating the purpose and abstract of the program after the questionnaire survey of study 1 and invited to take part in a leisure education program. They were also advised that their responses would be kept confidential and only grouped data



would be reported. If potential subjects agreed to participate in the program, they were asked to fill out a consent form. Those who were not sure to participate in the program were further contacted by telephone or email (if they used it) a week later in order to confirmed whether they could take part in the program. If they agreed to participate in the program, they were asked to fill out the same consent form. Finally there were 59 volunteer subjects taking part in the program (Table 3 shows their demographic profile).

### ***Design***

A pretest-posttest randomized experimental design was used in study 2. Subjects were randomly assigned to either the experimental ( $n = 30$ ) or control group ( $n = 29$ ), whereas they did not know their group. The subjects in the experimental group first participated in a leisure education program (session 1). After it was over, the subjects in the control group then participated in the same program. Doing so, all subjects could participate in a leisure education program, and study 2 could determine the net effect of the program on stress in the end of session 1 because the subjects in the control group did not participate in the program yet.

### ***Intervention***

Searle et al.'s (1995) leisure education program was used as the intervention because they confirmed that it could significantly strengthen the leisure competence of older adults. The intervention consisted of 12 units (see Searle et al.'s paper). Each of the units comprised a variety of activities, such as discussion exercise, role playing, and leisure activity participation. The intervention was conducted twice per week for three months. The subjects spent about two hours participating in each unit of the intervention.

### ***Data collection and analysis***

The stress scale of study 1 was used to measure the stress of the subjects in study 2. Before the experiment, data were collected as pretest data. Posttest data were collected after the experiment. The group differences in stress were tested using an analysis of covariance.

### **Results**

Table 4. Differences in Stress between the Experimental Group and Control Group

Group	<u>Pretest</u>		<u>Posttest</u>		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Experiment	45.43	11.40	41.77	12.08	28.88**
Control	44.69	11.89	46.03	10.85	

\*\* $p < .01$

The results showed that (1) the average stress scores of the subjects in the experimental group were 45.43 in pretest and 41.77 in posttest, whereas those of the subjects in the control group were 44.69 in pretest and 46.03 in posttest and (2) the group differences in stress were significant at  $p = 0.01$  level (Table 4).

### Study 3

Searle et al. (1995, 1998) have found that older adults sustain the improvements in their leisure competence after a leisure education intervention. Therefore, it is hypothesized that leisure education has a long benefit to stress reduction if leisure competence can enable older adults to decrease stress. To test this hypothesis, study 3 determined whether there was the effect of a leisure education program on stress a year later.

#### Method

Study 3 was conducted on 25 of the original 30 volunteer subjects used in study 2. Five subjects were unavailable for participation in the follow-up data collection process because of the movement and death. An analysis comparing those who were unavailable for study 3 to those who continued in study 3 showed discernible differences (Table 5), which might affect the results. Subjects were visited at their homes and again asked to complete the same questionnaire. An analysis of variance was used to determine whether there were significant differences in stress among pretest data of study 2, posttest data of study 2, and follow-up data of study 3.

Table 5. Characteristics of the Subjects in Study2 and Study 3

Characteristic	Study 2		Study 3	
	<i>M / n</i>	<i>SD / %</i>	<i>M / n</i>	<i>SD / %</i>
Age	71.83	4.53	73.48	4.59
Gender				
Women	15	50.0	12	48.0
Men	15	50.0	13	52.0
Education				
Primary School Graduates	26	86.7	22	88.0
High School Graduates	2	6.7	2	8.0
University Degree and Above	2	6.7	1	4.0
Marital Status				
Single	7	23.3	8	32.0
With a Spouse	23	76.7	17	68.0

#### Results

The average stress scores of the subjects were 45.43 in pretest, 41.77 in posttest, and

44.84 in study 3, respectively. The analysis of variance showed that there was no significant difference in stress between pretest and study 3 (Table 6).

Table 6. Differences in Stress

Source	<i>M</i>	SD	<i>F</i>	Post Hoc
1.Pretest Data	45.43	11.40		
2.Posttest Data	41.77	12.08	8.66**	1,3 > 2
3.Study 3 Data	44.84	9.96		

\*\* $p < .01$

## General Discussion

Based on a combination of the findings from SDT-related (Deci & Ryan, 1985, 2008; Weinstein & Ryan, 2011) and leisure-based studies (Caldwell, 2005; Trenberth, 2005), study 1 reexamined the relationships between older adults' leisure autonomy and leisure social support and their stress. Not surprisingly, study 1 reconfirmed that leisure autonomy and leisure social support were significantly negatively related to stress. The negative relationships between both leisure factors and stress are consistent with the findings from previous studies based on different cultural settings. Craike and Coleman (2005) found that leisure autonomy could significantly moderate the negative effects of life stress on psychological health among older Australians. Sasidharan et al. (2006) found that leisure social support could significantly contribute to stress reduction among older Americans. The results in combination with the previous findings suggest that leisure autonomy and leisure social support can also enable older Taiwanese adults to reduce stress.

The results also suggest that leisure autonomy and leisure social support are effective control variables. When both variables enter into the regression model, it can be seen more precisely whether leisure competence is actually related to stress. As expected, study 1 confirmed that leisure competence was significantly negatively related to stress after controlling for leisure autonomy and leisure social support. The negative relationship between leisure competence and stress is consistent with SDT which posits that competence can enable people to decrease stress (Weinstein & Ryan, 2011). It seems that in addition to leisure autonomy and leisure social support, leisure competence can also create positive emotions to enable older adults to decrease stress.

In study 2, Searle et al.'s (1995) leisure education program was used as the intervention to determine the effect of leisure competence on stress because they confirmed that their leisure education program could promote the leisure competence of older adults. The results of study 2 not only show the causal relationship between leisure competence and stress but also indicate useful information for healthcare practitioners. Specifically, although a

significant effect of a nursing presence program on reducing stress among older adults was also confirmed (An & Jo, 2009), participating in a nursing presence program may be more inaccessible for older adults than taking part in a leisure education program. In particular, leisure that can create enjoyment may more easily motivate older adults to take part in a leisure education program. Thus, a leisure education program is a more accessible manner to help older adults decrease stress.

However, study 3 did not confirm that leisure education had a long benefit to stress reduction among the subjects. Two likely reasons are inferred for the result: (1) There were discernible differences between the characteristics of the subjects in study 2 and those in study 3. These differences may influence the result. (2) The subjects who participated in the leisure education program did not continue to actively engage in leisure activities after the program and thereby their stress increases a year later. The two inferences still need to be further examined.

These three studies have several strengths. In study 1, the participants were randomly recruited from the communities in which they resided. The follow-up response rates were also good. In particular, study 2 and study 3 further determined the effect of a leisure education program on stress by a pretest-posttest randomized experimental design. Therefore, the results that are based on these methodological strengths more precisely contribute to an understanding of how leisure competence can enable older adults to reduce stress.

These three studies also have some limitations. First, the results may not directly be generalized to mental patients because they were not recruited. Second, generalization to older adults residing in other cities may be limited because participants lived in Keelung City. Third, the results may not directly be generalized to very old adults and illiterate older adults because their acceptability of the intervention was lower. However, if one accepts the underlying premise of the studies, the studies are still valuable in spite of these limitations. It suggests that in the present context, a leisure education program can enable older adults to reduce stress.

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