LEISURE EXPERIENCES AND DEPRESSIVE SYMPTOMS AMONG CHINESE OLDER PEOPLE: A NATIONAL SURVEY IN TAIWAN

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We aimed to explore older people’s subjective leisure experiences and to further examine associations of such experiences with their depressive symptoms in Taiwan. Known correlates of depression, such as demographics, physical health, and social support, were taken into account. Face-to-face interviews were conducted to collect data using structured questionnaires from a national representative sample of community older people (N = 1308, aged 65 + ). We found that (a) being female, older, single, less educated, and having lower family income were demographic risk factors of depression; (b) worse physical health, lack of independent functioning in Activities of Daily Living (ADL), and disability were related to more depressive symptoms; (c) greater social support was related to fewer depressive symptoms; (d) having controlled for effects of demographics, physical health, and social support, positive leisure experiences were independently related to fewer depressive symptoms. The benefits of meaningful leisure pursuits for successful aging are discussed.

Aging is a pressing problem for a developing country such as Taiwan. In Taiwan, advances in medical science and technology, successful promotion of health care, and material prosperity—coupled with the gradual demise of Taiwanese family values and lifestyle—have sent the birth rate in a steady decline; but the life expectancy of

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Taiwanese is in a steady increase. Consequently, as early as in September 1993, Taiwan was officially an aging society because the proportion of those aged over 65 had exceeded 7% of the country’s population (Lin, 2002). However, systematic research on aging topics in Taiwan is still in its infancy, and it relies heavily upon Western theories and findings. Furthermore, most research efforts have been devoted to medical gerontology and other aging-related medical care topics, while psychosocial issues of normative aging are generally overlooked. Although there has been some research pointing out beneficial effects of psychosocial factors on the well-being of older people in Taiwan—such as social support (e.g., Hu, 1992; Lu & Hsieh, 1997), family role participation (e.g., Lu & Chen, 2002), and positive attitudes towards aging (e.g., Lu, Kao, & Hsieh, 2010)—other domains of active participation in life such as leisure, especially subjective experiences of leisure, have largely been ignored so far.

Research on leisure with Taiwanese people in general and with older people in particular is in the rarity; this is partly because being a hardworking person has always been a highly regarded Confucius virtue. However, with economic development, material abundance, and the shortening of statutory working hours (now 40 hours per week), Taiwanese people are learning to “improve life with leisure” (Lu & Hu, 2002, p. 2). Thus, against this transition of cultural mandate on a “good way of life,” understanding the subjective experiences of leisure of older Taiwanese people will not only shed light on some interesting issues in leisure research, but also contribute to better leisure policies and management to promote successful aging. The purpose of this study, therefore, was to explore whether meaningful leisure experiences in older age could be beneficial for psychological well-being over and beyond effects of known protectors such as social support and physical health.

**SUCCESSFUL AGING: EXPERIENCING AGING POSITIVELY**

Researchers have recently found that the experience of aging is not necessarily negative for older people. As part of the Berlin Aging Study, Freund and Smith (1999) collected spontaneous self-definition in a heterogeneous sample of 516 participants (aged 70–103). The content of the self-definition revealed that these older adults still view themselves as active and present-oriented, and, overall, there were more positive than negative self-evaluations. In a recent study, Bowling (2008) interviewed 337 British home-living older adults
and found that 43% regarded having/maintaining physical health and 34% regarded participating in leisure and social activities as elements of active aging. It is rather encouraging to note that a third of respondents rated themselves as aging “very actively” and almost half as “fairly actively.”

In Taiwan, a recent large-scale survey of the general population revealed that some positive aspects of aging were acknowledged both by the older people themselves and by members of other age groups (Lu & Kao, 2009). Specifically, positive attitudes and traits pertaining to psychological and cognitive aspects of aging—such as rich experiences, wisdom, and authoritative status—were attributed to older persons, largely in accordance with cultural values of filial piety in a Taiwanese society. With a community sample of older adults, Lu et al. (2010) again found positive attitudes towards aging were prevalent across a wide spectrum of domains including appearance and physical characteristics, psychological and cognitive characteristics, interpersonal relations and social participation, and work and economic safety.

Adopting a different research paradigm, a rare qualitative research reported 22 in-depth interviews with community older adults in Taiwan (Lu & Chen, 2002). Researchers noted that many of their interviewees held positive attitudes towards their family roles in later life. Such positive self-perceptions for old age was rooted in the rich life experiences; in the belief that they can teach, guide and help their children and grandchildren; and in the prevailing societal value of respecting the old and ascribing authority to the old in family (i.e., filial piety). It seems that for Taiwanese older people, continuing family role participation is a key to the positive experiences of aging.

Synthesizing these strands of research, we argue that aging can be experienced positively in a Taiwanese culture. The above mentioned research also provides an empirical basis for the notion of successful aging as “engagement with life,” including role participation with work, family, friends, community, and leisure (Rowe & Kahn, 1998, p. 27). In Taiwan, 65 is the statutory retirement age, and a recent nationwide survey (Lu, 2010) noted only 5.9% of those aged 65 and above still held paid jobs (including part-time work). This finding corroborates the popular image and commonly held expectation of older age in Taiwanese societies as being a time of leisure and retreat into family life with grandchildren (Lu & Chen, 2002). Instead, active role participation with family, friends, and community has been repeatedly found pivotal to older people’s well-being in Taiwanese studies (e.g., Hu, 1992; Lu & Chen, 2002; Lu & Hsieh, 1997). However, leisure in older age seems to be largely overlooked in existing
Taiwanese studies. Time being one of the most available assets in older age, leisure can serve a key role in the successful aging process, and it can be a constructive way of engagement with life. One recent study found that Australian older people spent 4.5 hours/day on solitary leisure and 2.7 hours/day on social leisure (McKenna, Broome, & Liddle, 2007). Although there is no data on time use of Taiwanese older adults, Chen (2003) did find that participation in various leisure activities was positively related to increased life satisfaction for older people.

More striking evidence came from a 10-year follow-up study with a nationally representative sample of Swedish older people (Silverstein & Parker, 2002). Researchers found that those increasing their leisure activity participation across domains tended to perceive an improvement in their life conditions. Another study found that for Japanese older men, less interaction with neighbors, society, and friends was highly associated with depressed mood; for women, engaging in various types of activities relating to society, leisure and children/grandchildren was associated with less depressed mood (Arai et al., 2007).

**LEISURE: THE INCREMENTAL VALUE BEYOND OTHER SOCIAL RESOURCES FOR SUCCESSFUL AGING**

Various leisure theories have provided us with frameworks to understand the benefits of leisure. For instance, Beard and Ragheb (1980) purported that leisure could gratify basic human needs and generate satisfaction pertaining to six aspects of life: psychological (e.g., interesting activities); social (e.g., getting to know people); physical (e.g., getting exercise, keeping fit); educational (e.g., learning new things); relaxation (e.g., relax, unwind); and aesthetic (e.g., beautiful surroundings). Existing leisure research has confirmed that various leisure activities could indeed generate short-term benefits including positive mood, physical fitness, and immediate satisfaction, as well as long-term effects of happiness, mental health, physical health, and social integration (e.g., Argyle, 1996; Lu & Hu, 2005). One in-depth interview study with Taiwanese college students further revealed that leisure also served an important function of structuring time (Lu & Hu, 2002), which should be more important for older adults with ample time to spend. It may be for this reason that previous Western research has found that leisure is especially important for older people (Argyle, 1996).

A recent study (Pressman et al., 2009) has shown that among a large sample of American adults ($N = 1399$, 19–89 years), leisure
Leisure participation in aggregate was associated with lower blood pressure, total cortisol, waist circumference, body mass index, and perceptions of better physical function. These associations withstood controlling for demographic measures. Leisure participation also correlated with higher levels of positive psychosocial states and lower levels of depression and negative affect. It seems that leisure activities are associated with both psychological and physical outcomes. However, it is not clear whether some social aspects of leisure confound with social support, which is a known protector against distress and illness. Our purpose for the present study was, thus, to tease out the incremental value of leisure participation over and beyond known protectors such as social support.

Research on social support has already accumulated a large body of empirical evidence and a wide variety of theoretical formulations such as stress-resources models (Hobfoll, 1989; Holahan & Moos, 1986); the convoy model (Kahn & Antonucci, 1980); and the support-efficacy model (Antonucci & Jackson, 1987). Focusing on older people, empirical evidence has generally supported the beneficial effects of social support and social integration on health and well-being in the West and in Taiwan. For instance, Curtrona, Russell, and Rose (1986) found in a longitudinal study that social support could predict physical health and buffer the impact of life stress on mental health for older people living in the community. In another community study, Coe, Wolinsky, Miller, and Prendergast (1984) found that social integration or network-embeddedness was related to the health of older people.

One Taiwanese community study has also found that social support had both direct protective effects on physical and mental health and mediating effects linking perceived control to health (Lu & Hsieh, 1997). In another Taiwanese study, social support had incremental value in predicting self-reported health and life satisfaction after controlling for age, illness, and level of daily functioning (Lu & Chang, 1997). Earlier, Hu (1992) found that social support from the family protected older people from mental illnesses. Huang (1992), too, found that social support was the most important predictor of life satisfaction, more powerful than self-reports of health. Thus, social support and social integration (family and community participation) as social resources have shown unequivocal benefits for positive aging, including reduced likelihood of depression.

One possible mechanism of leisure participation on enhancing successful aging may be through social support and social engagement, as many activities are conducted with family and friends (Arai et al., 2007; Fu, Lu, & Chen, 2009). Joining in activities with others reflects the social organization of leisure, strengthens interpersonal
relationships, and enhances a sense of belonging among the participants (Cheek & Burch, 1976). Leisure-related social support has indeed been found to buffer the stress-illness relationship for the Americans (Iso-Ahola & Park, 1996).

Moreover, leisure has the potential to go beyond social engagement or social support. The aforementioned Swedish study (Silverstein & Parker, 2002) revealed that the beneficial effects of increased leisure participation was particularly strong among older adults who became widowed, developed functional impairments, and had relatively low contact with family. These results suggest that maximizing leisure activity participation is an adaptive strategy taken by older adults to compensate for social and physical deficits in later life.

Yet another possible mechanism of leisure participation in enhancing successful aging may be through cognitive stimulation of the brain. Leisure activities may help brain function and protect against cognitive deterioration. The recent availability of longitudinal data on the possible association of different lifestyles with dementia and Alzheimer’s disease (AD) allowed for exploration of the effects of social network, physical leisure, and nonphysical activity on cognition and dementia. For all three lifestyle components (social, mental, and physical), a beneficial effect on cognition and a protective effect against dementia are suggested (Fratiglioni, Paillard-Borg, & Winblad, 2004). However, a distinction should be drawn between activities that are cognitive and those that are passive; this is because evidence showed that leisure activities that do not involve social engagement but are cognitively stimulating are protective against cognitive decline in older people (Rundek, & Bennett, 2006). However, such a salutogenic effect does not apply to watching TV, which is, in fact, a risk factor for cognitive decline (Rundek, & Bennett, 2006).

So far, it seems that participation in leisure activities may facilitate successful aging. Leisure participation may do this partly by enabling people to join and maintain social networks, by stimulating brain function, and partly by way of enjoyment of leisure per se (Lu & Hu, 2005). Research in Western societies has shown that leisure activities per se may enhance reported physical and subjective well-being among older adults, but the sociability aspect of such activities makes a more substantial difference (Litwin, 2000; Duay & Bryan, 2006; Harahousou, 2006). It, thus, would be interesting to see if leisure activities not connected with social engagement had the same relationship with depression as those connected with social engagement. One thrust of the present study is the examination of participation in different leisure activities rather than focusing on a single activity and its link to psychological well-being. In so doing,
we may be able to distinguish between activities that are social, cognitive, or passive in nature as a predictor of depressive symptomatology among Taiwanese older adults.

Finally, leisure participation of older people, whether in aggregate or in individual activity, has received research attention in the West; however, subjective experiences of leisure have been understated. A recent study (Sellar & Boshoff, 2006) probed into the significance of experiential components in leisure and found that for Australian older people, relaxation and engrossment were commonly expressed experiences. Such subjective experiences were different from, yet complimentary, to those derived from social support, such as care and respect.

We, thus, hypothesize: Leisure participation in aggregate and the overall positive leisure experiences are associated with less depressive symptoms for middle-aged people in Taiwan, and this association remains even after controlling for effects of social support and physical health. In addition, we will examine whether activities that are social, cognitive, or passive would have differential predictive powers for depressive symptoms.

METHOD

Samples & Procedures

Data for this present study were drawn from the Needs, services and value preferences for older life among different generations (Lin & Wang, 2008). This first-time nationwide survey in Taiwan followed rigorous procedures in sampling design, survey fieldwork, data cleaning, and data archiving. The survey adopted three-stage stratified Probability Proportional to Size (PPS) sampling with household registration data. The survey fieldwork relied on well-trained interviewers who made home visits for face-to-face interviews using structured questionnaires to collect data from community-residing adults in Taiwan aged between 45–64 years (Middle-aged Group) or above 65 years old (Older Group). Only one participant—who was randomly selected from household registration data—was interviewed in each household surveyed. The survey was conducted in January 2007. The two survey samples were confirmed as representative of the national population in terms of age, sex, education attainment, and residence regions (Lin & Wang, 2008). The present study used data from the Older Group.

Our sample \( N = 1308 \) was 50.7% men, with a mean age of 76.55 years \( (SD = 6.41) \), and over half (58.6%) were young-old (65–74
years). Most had some elementary school education (38.0%), with an average formal education of 7.57 years ($SD = 3.06$). Most of the sample (66.8%) was married with living spouses. Almost all (89.9%) had religious affiliations, the majority religion (83.7%) being Taoism/Buddhism.

**Instruments**

**Demographic Information**
Participants’ demographic information recorded included sex ($1 = M$, $0 = F$); age; marital status ($1 =$ married, $0 = $ single); education attainment (converted to years of formal education); religion ($1 = $ yes, $0 = $ no); family income; and paid work ($1 = $ yes, $0 = $ no).

**Social Support**
Five items were adopted from Functional Social Support Scale (Hanson, Isacsson, Janzon, & Lindell, 1989). The scale has been used in Taiwan and has shown good reliability, construct validity, and criterion validity in predicting health and well-being of community older people (Lu & Chang, 1997; Lu & Hsieh, 1997). The scale includes material and tangible support (three items: “Is there anyone who gives you money/allowance?”; “…who can help you in emergencies?”; “…who helps with daily life activities?”), and emotional support (two items: “…who you can consult for personal problems?”; “…whom you can trust and confide?”). Both sets of items were rated on a scale of 1–4 ($1 = $ Never, $4 = $ Always). Following the scoring procedure suggested by the scale developers, a higher aggregated score indicated more social support. In the present study, internal consistency alpha was .66 for this scale.

**Physical Health**
Three indicators of health were used in the survey. Self-perceived health was rated ($1 = $ Very bad, $4 = $ Very good). Independence in daily functioning (ability in dressing, eating, etc. $1 = $ yes, $0 = $ no) were enquired. Finally, disability or difficulty in performing activities of daily living was assessed (Nagi, 1976). Each item was rated ($0 = $ Very lt, $3 = $ Not at all difficult). In the present study, internal consistency alpha was .89 for this scale. We aligned the direction of scoring for higher scores to represent better physical health.

**Leisure Participation**
A checklist of 10 types of leisure activities was provided. The list included TV/radio; newspaper/magazine; chess/board games/cards; visiting relatives/friends/neighbors; computer/internet;
gardening/plants; interests/hobbies (e.g., instruments, panting, handcraft, collection); concerts/plays; movies/shopping; and walking/exercising. Participants checked yes/no (1 = yes, 0 = no) for participation in each category of activities. Participants were then asked to rate their overall leisure satisfaction pertaining to the above 10 categories of activities in aggregate. The aggregate item is “Are you satisfied with all the above leisure activities?” (1 = Very dissatisfied, 4 = Very satisfied).

In addition, eight items were adopted from Beard and Ragheb's (1980) Leisure Satisfaction Scale. This scale taps aspects of psychological (e.g., interesting activities); social (e.g., interacting with people); physical (e.g., keeping fit); educational (e.g., learning new things); and relaxation (e.g., relaxed) experiences. The frequency of each specific experience was rated (1 = Almost never, 4 = Often). Scores were then aggregated to indicate leisure meaningfulness. Again, participants reported their leisure meaningfulness pertaining to all the 10 categories of activities in aggregate. In the present study, internal consistency alpha was .87 for this scale. Finally, participation in voluntary work (usually done in social groups) was measured (1 = yes, 0 = no).

Depression
Common symptoms of depression were measured by 11 items from the Center for Epidemiological Studies-Depression Scale (CES-D) adopted for the Chinese people (Cheng & Chien, 1984). Sample items are “Don’t feel like eating, bad appetite” and “Feeling sad and miserable.” Respondents rated each item (symptom) on a 4-point scale (0 = never or very seldom, 3 = almost always). A higher total score indicated a higher level of depressive symptoms. In the present study, internal consistency alpha was .84 for this scale.

RESULTS
Before testing our hypothesis, we computed Pearson correlations among all research variables (Table 1). Sex (being female), age, marital status (being single), education years, and family income were demographic correlates of depressive symptoms. All three indicators of physical health correlated with depression. Social support correlated with depressive symptoms. Finally, leisure participation (in aggregate), leisure satisfaction, leisure meaningfulness, and taking on voluntary work (in social groups) all correlated with depressive symptoms. All relations were in the expected direction.

We conducted a finer-grained analysis correlating participation in each of 10 categories of leisure activities with depression. Results
Table 1. Intercorrelations among research variables

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<td>2. Age</td>
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<td>4. Education yrs</td>
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<td>5. Religion</td>
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<td>6. Family income</td>
<td>0.08**</td>
<td>0.11***</td>
<td>0.06*</td>
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<td>7. Paid work</td>
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<td>0.08**</td>
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<td>8. Health</td>
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<td>0.07*</td>
<td>0.23***</td>
<td>-0.03</td>
<td>0.28***</td>
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<td>9. Independent functioning</td>
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<td>0.07*</td>
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<td>10. NAGI</td>
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<td>11. Social support</td>
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<td>12. Leisure participation</td>
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<td>-0.12***</td>
<td>0.45***</td>
<td>-0.05</td>
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<td>-0.01</td>
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<td>13. Leisure meaningfulness</td>
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<td>0.13***</td>
<td>0.23***</td>
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<td>0.01</td>
<td>0.38***</td>
<td>0.17***</td>
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<td>14. Leisure satisfaction</td>
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<td>-0.04</td>
<td>0.02</td>
<td>0.06</td>
<td>-0.02</td>
<td>0.17***</td>
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<td>15. Voluntary work</td>
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<td>-0.11***</td>
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<td>0.03</td>
<td>0.07*</td>
<td>-0.01</td>
<td>-0.01</td>
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<td>16. Depression</td>
<td>-0.16***</td>
<td>0.06*</td>
<td>-0.15***</td>
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Notes. Sex: 1 = M, 0 = F; Marital status: 1 = married, 0 = single; Religion: 1 = yes, 0 = no; Paid work: 1 = yes, 0 = no; Independent functioning: 1 = yes, 0 = no; Voluntary work: 1 = yes, 0 = no.

*p < .05, **p < .01, ***p < .001.
revealed that all activities significantly correlated with depressive symptoms, with the strongest correlation being “newspaper/magazine” ($r = -.21, p < .001$) and the weakest being “TV/radio” ($r = -.07, p < .05$) and “concerts/plays” ($r = -.07, p < .05$).

We then conducted hierarchical regression analysis to test our hypothesis (Table 2). At the first step of regression, we entered demographic variables of sex, age, marital status, education years, religion, family income, and paid work as control variables. Second, we entered three physical health indicators. Third, we entered social support. Finally, at step four we entered aggregate leisure participation, overall leisure satisfaction, leisure meaningfulness, and taking on voluntary work (in social groups).

The results reported in Table 2 show that sex, age, marital status, and family income were related to depression (Model 1): females, older, single, and those with lower family income were more likely to be depressed. Those with better self-reported health, ADL independence, and less disability on the Nagi index were less likely to be depressed (Model 2). Social support had a negative relation with depression (Model 3). Having controlled for effects of demographic variables, physical health, and social support, perceived leisure meaningfulness and satisfaction still had negative relations with depression (Model 4). However, aggregate leisure participation was not associated with depressive symptoms. Thus our hypothesis was partially supported. The combination of demographics, physical health, social support, and leisure explained a total of 42% of variance on depression, among which leisure had an independent contribution of 6%, twice more than that of social support (3%).

Again, for a finer-grained analysis, we entered each of the 10 categories of leisure activities individually and as a block at step four, replacing aggregate leisure participation. Whichever way we tested, none of the activities were significantly associated with depressive symptoms ($\beta$ ranged from $-.02$ to $-.07$). Thus, participation per se in leisure activities (whether individually or in aggregate) was not associated with reduced depressive symptoms, but positive experiences generated through leisure were.

Finally, though we had no formal hypothesis about the preferences of leisure activities, we nonetheless looked at the frequency of older people’s participation in various types of leisure. Results revealed that TV/radio (90%), newspaper/magazine (25.6%), visiting relatives/friends/neighbors (47.9%), and gardening/plants (20.8%) were the four most popular leisure activities. Other activities all had participation rates below 10%: interests/hobbies (8.8%), walking/exercise
<table>
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<th>Step</th>
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<th>Depression (Model 2)</th>
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<td></td>
<td>Leisure satisfaction</td>
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<td>Final $F$</td>
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<td>28.23*** (10, 574)</td>
<td>29.37*** (11, 573)</td>
<td>27.23*** (15, 569)</td>
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</table>

**Notes.** Sex: 1 = M, 0 = F; Marital status: 1 = married, 0 = single; Religion: 1 = yes, 0 = no; Paid work: 1 = yes, 0 = no; Independent functioning: 1 = yes, 0 = no; Voluntary work: 1 = yes, 0 = no.

Standardized coefficients $\beta$ and $F$ are taken from the final equation.

* $p < .05$, ** $p < .01$, *** $p < .001$. 
(7.6%), movies/shopping (6.4%), chess/board games/cards (5.6%), concerts/plays (4.7%), and computer/internet (3.1%).

DISCUSSION

The present study explored whether older people’s leisure pursuits were associated with their well-being, over and above the effects of some known correlates in a society–Taiwan. We used depressive symptoms measured with a standardized instrument as the indicator for well-being in the present study. With the advantage of a large representative national sample, our results could compliment those found in the West.

We found that the block of seven demographic characteristics (sex, age, marital status, education, religion, family income, and paid work) accounted for a quite substantial amount of variance (10%) in depressive symptoms, mainly attributable to sex, age, education, and income. In the present study, demographic characteristics explained the second largest portion of variance in depressive symptoms, next only to physical health. Female sex as a risk factor for depression has been well-documented in the Western literature (Nolen-Hoeksema & Rusting, 1999) and confirmed among the Taiwanese older people (Lu & Hsieh, 1997). One previous study further revealed that older Taiwanese adults who were younger and financially secure reported better physical health (Lu & Chang, 1998). Butler and Lewis (1982, p.11) synthesized Western findings to conclude that “demographic data show conclusively that an increasing life expectancy follows in the wake of increasing income and status.” Our current findings of older age, female sex, lower education attainment, and lower family income as predictors of depression extend the potential effects of demographic variables from physical health to mental well-being.

We can compile a demographic profile of older persons who may run the risk of depression—female, older, lower education, and lower income. The added value of our present study is that we were the first to simultaneously consider effects of physical health/disability, social support, and leisure/voluntary work, to confirm the above demographic risk profile for older people’s emotional well-being. In other words, because we have identified older people who are more likely to report depressive symptoms, when other important factors are taken into account, we can then better target our care resources to prevent health hazards and depressed emotional well-being.

More importantly, perhaps, we have found that leisure pursuits in older age were related to emotional well-being, even after controlling
for effects of demographics, physical health/disability, and social support. Although leisure experiences were not the strongest predictors of depression, their contributions were greater than the often-studied social support and independent from those of physical health/disability and social support. Previous social gerontological research has firmly established the protective effects of social resources (e.g., Antonucci & Jackson, 1987; Hanson et al., 1989; Holahan & Moos, 1986; Kahn & Antonucci, 1980). We have extended the list of protectors to include leisure, which is so far largely overlooked in Taiwanese of older age. Our results compliment Western findings of benefits of leisure on enhancing quality of life in older age (Silverstein & Parker, 2002); constructing the subjective experiences of active aging (Bowling, 2008); and reducing risks of dementia in older age (Fratiglioni et al., 2004). More importantly, while existing studies focused on benefits of leisure or life style per se on dementia, Alzheimer’s Disease (AD), and physical and mental health, our results were obtained after controlling for effects of social support. This takes out any potential confound between leisure as a means of sociability (Fu et al., 2009) and social support as a function of social embeddedness (Hanson et al., 1989). In other words, our results revealed a “cleaner” effect of leisure experiences on depressive symptomatology. Together, these results serve to underline the importance of including leisure as a means of engagement with life, along with social participation, in the promotion of successful aging (Rowe & Kahn, 1998).

Although our national survey did not include enough psychological constructs for us to tease out potential mechanisms linking leisure to well-being, Beard and Ragheb’s theory of leisure needs (1980) may provide us with some inspirations for future research. As noted earlier, they purported that leisure is beneficial because it could gratify basic human needs pertaining to six aspects: psychological (e.g., interesting activities); social (e.g., getting to know people); physical (e.g., getting exercise, keeping fit); educational (e.g., learning new things); relaxation (e.g., relaxed, rewind); and aesthetic (e.g., beautiful surroundings). These six aspects constituted our measure of leisure meaningfulness, which turned out to be a strong predictor of depression. Though leisure participation per se was not associated with reduced depressive symptoms in the present study, we did find evidence that aggregate participation in leisure—and, in fact, participation in every type of activity—correlated with lower levels of depressive symptoms. These tentative results corroborate Western findings showing salutogenic effects of an active and socially engaged life style against dementia and AD (Fratiglioni et al., 2004;
Rundek & Bennett, 2006). Although we failed to find direct evidence linking specific activities to reduced depressive symptoms in the regression analysis, an inspection of the rank order of leisure pursuits may still help us to understand why positive leisure experiences in the form of overall leisure satisfaction and meaningfulness could protect against depressive symptoms.

In the present study, we noted that the most popular leisure engagement was TV/radio, a solitary leisure that tops the list of leisure pursuits for Taiwanese in a recent national survey (Fu et al., 2009). Although watching TV has been found to be a low arousal and sometimes boring activity (Lu & Argyle, 1993), and may even be harmful for brain functioning in older age (Rundek & Bennett, 2006). Reading newspaper/magazines, which ranked the third popular leisure activity in the present study, is more cognitively engaging and challenging. Its role within the active life style and potential function as a brain stimulus against depression deserve further exploration.

The second popular leisure pursuit for older people in the present study was social in nature: visiting relatives/friends/neighbors. This is in agreement with the Australian finding that older people spent 2.7 hours/day on social leisure (McKenna et al., 2007). In a close-knit Taiwanese society, older people tend to have relatives and friends living nearby. In Taiwanese rural areas, older people habitually get together in front of the village temple to chat and drink tea. Such causal social gatherings help to strengthen community bonds and satisfy social needs. Indeed we found that this social activity correlated with lower levels of depressive symptoms.

In the present study, gardening was the fourth most popular leisure pursuit. It is also the only one involving physical exertion, which can protect against dementia and AD for older people (Fratiglioni et al., 2004). Gardening is generally regarded as a hobby that can generate a strong sense of achievement (Lu & Argyle, 1994) and aesthetical enjoyment (Argyle, 1996). Taken together, it is understandable that older adults who engaged in leisure pursuits may harvest diverse benefits by gratifying psychological, educational, social, physical, relaxation, and aesthetic needs. Such gratified needs, thus, are expressed in reported meaningfulness of, and satisfaction with, one's leisure life as a whole. To promote active engagement with life and successful aging, these meaningful leisure pursuits may play an integral part.

One thrust of the present study was the examination of participation in different leisure activities rather than focusing primarily on a single activity and its link to psychological well-being. It is important to study participation in several different activities as a
predictor of depressive symptomatology to clarify any differential effects of activities (e.g., cognitive, social, passive) on depression, as discussed above. In addition, by studying several leisure activities, we are better able to capture a wider array of activities that speak to different groups of people that can be beneficial for health. This is as opposed to concentrating on single activities that may be restricted to specific groups. From a health policy perspective, this broad look can inform decision making about supporting different types of activities as ways to improve public health.

However, readers should still keep in mind that the present study has certain limitations. First, the study design was cross-sectional, thus no causal conclusions are legitimate. Depression is characterized by either depressed mood or loss of interest in, or pleasure from, usual activities or both. Thus, the direction of association may be that depression is a cause of a decline in participation in leisure activities rather than the consequence. Longitudinal data have unequivocally supported that social, mental, and physical activities all have a beneficial effect on cognition and a protective effect against dementia in older life (Fratiglioni, et al., 2004; Rundek, & Bennett, 2006); whether such an effect extends to depression is yet unknown. Clearly, longitudinal research is needed to clarify this relationship.

Second, this study was essentially a secondary data analysis. Contrary to our hope, some variables were measured with single or fewer than the desirable number of items; some variables were not included at all. For instance, it would be helpful if we had a complete index of time use to link time spent on various leisure pursuits with their benefits on well-being. This information would then help us better plan and educate older people in their leisure engagement. Third, we interviewed older adults living in Taiwan. Although Taiwan is culturally a Chinese society and has preserved the Chinese heritage in terms of values and family life to a great extent, it is politically, economically, and psychologically different from mainland China (PRC) (Lu, Cooper, Kao, & Zhou, 2003). Thus, our results should not be generalized to the vast population of older people in the PRC. For instance, TV may not be widely available in rural areas of mainland China. Also, the literacy rate is much higher among the older population in Taiwan than that of Mainland China. Thus, reading may be more accessible to Taiwanese older adults. Finally, our interviews were conducted using structured questionnaires. Future studies may consider employing qualitative methods to explore older people's conceptions and lived experiences of successful aging in greater depth—including leisure and other life domains—so that a fuller
and richer understanding of the aging process can be achieved from older people’s own perspective.

**REFERENCES**


Leisure and Depression of Older People  


