The Development Strategies of Outdoor Physical Activity Space for Rural Elderly in Taiwan

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Abstract
The objective of this study is to discuss the spatial characteristics of physical activity for elderly people in Taiwan’s rural areas. Observation and face to face interview were used for data collection and five communities in Chayi County were selected as empirical areas. Totally 37 elders were completed interview.

The study results showed that farming work would affect elderly people participating in physical activity and their perception about physical activity were varied based on the age. The older the more persons preferred farming work and considered it was a physical activity. The results also indicated that most respondents have used community activity center, caring station, elementary school playground and local temple for outdoor activities. The time before sunrise and after sunset was their favorite time to do outdoor exercise and activities for respondents. The problems about outdoor activities include little space available and most public space has no shade.

Based on studied results, this study has proposed the strategies of promoting feasible educational programs, providing suitable physical activity space, and integrating into rural regeneration plan to solve the problems and improve the existing rural physical environment.

Keywords: Rural Elderly, Development Strategy, Outdoor Physical Activity Space, Farming work
1. Introduction

When aging issue has rapidly spread all over the world like global warming, thinking about possible solutions will help solve the problems and follow-up situation. The “aging in place” has become the contemporary social phenomenon, it promotes that senior persons live in their homes and communities without resettlement (Lee, 2008). The related studies on ageing and health have pointed out that physical activity is one of the most appropriate activities for the elderly. The community supports and activities will also stimulate the social participation of the elderly and enhance the life satisfaction and well-being (Harahousou & Kabitsis, 2002).

According to the statistics, the elderly population has reached 11.2% by the end of 2012 in Taiwan (Ministry of the Interior, 2013). The aging has also gradually become an importance issue in Taiwan. The main purpose of this study is to discuss the spatial characteristics of physical activity for elderly people in Taiwan’s rural areas. Five communities in Chayi County were selected as empirical areas. This study had conducted observation and face to face interview for data collection, and had completed totally 37 interviews. The types of physical activity, the condition of outdoor physical activity space, the problems of outdoor physical activity space, and the future expectation for outdoor physical activities will be discussed, and the development strategies will be presented in this study.

2. Literature Review

2.1 Physical Activity and Health Promotion

In general, the elderly in a society could form a habit of physical activity to be a healthy lifestyle and could reduce the medical cost. Although, some studies pointed out rural women think falls, injuries and heart attack were the risk and barrier of physical activity (Wilcox et al., 2003). But in other related studies, female elderly people truly get physical, psychological and emotional satisfaction from physical activity, moreover, getting more happiness from higher physical activity participation (Gill, 1997).

For depressed elderly, studies also pointed out that physical activity could be a prescription, increasing physical activity would have a significant impact of depressive symptoms reduced (Strawbridge, Delege, Robert, & Kaplan, 2002; Singh & Singh, 2000; Palmer, 2005). Furthermore, daily walk could basically predicted some depressive symptoms of elderly people, the study also suggests age should be considered when estimating the effect of physical activity on psychological well-being (Fukukawa et al., 2004).

In Europe, leisure policies for the elderly population have been concerned with promoting active lifestyles for health benefits and quality of life. Programs were offered within the fields of education, medicine and health, social welfare, government, trade unions and religion (Harahousou & Kabitsis, 2002). In addition, the Australia Rural study also pointed out that although the short-term physical activity is the rural health promotion approach, but should become a long-term lifestyle (Ng & Sivamalai, 2007).

2.2. Physical Activity and Community Support

When the social role of elderly people had changed, Brazil's related researches point out that physical activity could be the resource of social support for elderly people, to enhance their satisfaction with the family, friends, and neighbors. Therefore, for the elderly people, physical activity could play a positive role of social groups in the community (Benedetti, et al., 2011). The social support based on church truly helps some no exercise people start to physical activity
(Kanu, Baker & Brownso, 2008). Although, the rural church leader would not talk about physical activity and diet, the church members indeed provide a rich social support (Kegler, et al., 2012). The elderly perception of stress, social support, and neighborhood safety were positively associated with physical activity. In addition, age, depressive symptoms, sidewalks, health care provider discussion of physical activity, and traffic were negatively associated with physical activity (Wilcox et al., 2003).

For the physical activity research of rural elderly, Shores et al. (2009) had indicated that the success of rural elderly people’s physical activity lies in social support of physical activity, safe environment, and the ability to go to a local park. Therefore, intervention design, providing social support, enhancing site safety, and improving park facilities would increased physical activity opportunities of elderly. Many other researches also suggested that strengthening social support to promote physical activity would improve health or delaying depression (Wang, et al., 2009; Hong and Chen, 2006; Li and Juo, 2008).

2.3 Elderly Outdoor Physical Activity Space

Rodiek (2013) indicated that well-designed outdoors environments can have a beneficial effect on the health of older adults by encouraging them to spend more time outdoors and to find cost-effective ways promoting and maintaining health in older adults is increasingly important. Study showed that adjacent to residential area and privacy were factors to choice outdoor activity space (Chen, 2006).

3. Research Method

This study had selected five communities in Chiayi County as empirical areas. Chiayi County is located on southwest Taiwan. The Chiayi County is one of highest elderly population in Taiwan and the elderly population was more than 14% of total population by the end of 2012. The selected five communities are Pai-lu, Chung-yang, Ching-pu, Hou-zhuang, and Da-lun communities.

<table>
<thead>
<tr>
<th>Table1. The population and main crops of five studied communities</th>
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<tbody>
<tr>
<td>Pai-lu Community</td>
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</tr>
<tr>
<td>Household</td>
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<tr>
<td>Population</td>
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<td>Population of age over 65</td>
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<tr>
<td>Percentage of elders</td>
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<td>Main crop of community</td>
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</tbody>
</table>

Observation and face to face interview were used for data collection from April 2013 to May 2013. This study had completed totally 37 interviews. The questions of interview include the used types of physical activity, the condition of outdoor physical activity space, the problems of outdoor physical activity space, and the future expectation for outdoor physical activities.
4. Results and Development Strategy

4.1 The Analysis of Results

According to the results, there were 24 male and 13 female among 37 interviewees. The range of age is from 67 to 90. The followings are other important results:

4.1.1 Outdoor physical activity types

Table 2 shows that the calisthenics and biking were the top two used types of outdoor activity. It also indicated that static exercises were favored activity for most respondents although some respondents preferred dancing and croquet.

<table>
<thead>
<tr>
<th>Types of activity</th>
<th>Pai-lu Community</th>
<th>Chung-yang Community</th>
<th>Ching-pu Community</th>
<th>Hou-zhuang Community</th>
<th>Da-lun Community</th>
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</thead>
<tbody>
<tr>
<td>Farmland patrolling by bicycle</td>
<td>Dancing</td>
<td>Calisthenics</td>
<td>Walking</td>
<td>System of deep breathing exercises</td>
<td></td>
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<tr>
<td>Calisthenics</td>
<td>Croquet</td>
<td>Gymnastics</td>
<td>Farmland patrolling by bicycle</td>
<td>Biking</td>
<td></td>
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<tr>
<td>doing taijiqun</td>
<td>Wushu</td>
<td></td>
<td>Calisthenics</td>
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</table>

4.1.2 The cognition and perception of physical activity

The data revealed that over 80 years old people were more reluctant than age between 65 to 80 years old people to do physical activities except farming work. The older the more perceived farming work as physical activity and the younger the more willing to receive health information and to spend more time doing sports and physical activities.

4.1.3 The available time for physical activity

The data indicated that the available time for physical activity would be adjusted by season for most respondents. The location and weather were the impact factors to determine the physical activity time. Almost all interviewees said that before sunrise and after sunset were their favorite time to do outdoor exercise and activities.

4.1.4 The used physical activity space

The data showed that the community activity center, caring station, elementary school playground, local temple were favorite outdoor activity spaces for most respondents.

The study results also showed that the activity path was influenced by rural market. For those communities have formal market place, the market would be one important spot by walking or biking. For some communities do not have formal market place because of fewer population, the movement of fish and vegetable vendor car have became important path for respondents by walking and biking. Both kinds of market place have also become the place of greeting, chatting with familiar friends for almost all respondents.

As the above results, many elderly have used linear type space for patrolling farmland and walking to local market. The interesting thing is, regardless of riding bicycle, electric car, using wheelchair, or walking, the moving path in the community is always the same. The results also indicated that, for those who like to have company for farmland patrolling by bike,
facing the situation of friends dying and leg strength decaying, they would selected space nearby home and would selected more static activities. It is revealed that different ages and physical conditions would change the demand of physical space for elderly.

4.1.5 The problems for outdoor physical activity space
The respondents indicated that little space available for activities and most public space have no shade. The studied communities are located on southwest Taiwan; the average yearly temperature is around 23°C while it is reached above 30°C in summer time. A shaded place has become an important factor to do outdoor activity for elderly.

4.2 The Development Strategies
4.2.1 Promoting feasible educational programs
According to the research data, this study finds that the farming work is an important factor to effect the elderly spending time for physical activity. Some respondents have pointed out they were too busy in farming to do other physical activities and have considered farming work as physical activity.

Because of farming work, many respondents indicated they did not have strength to engage in other kinds of physical activity. Some respondents said they were quit farming work because of the insistence of their family, but they still occasionally be hired to help farming during the harvest period for passing the boring time.

The misunderstanding of farming work as physical activity is common in studied communities. In order to enhance the health of elderly, feasible educational programs were needed to change the cognition and perception about outdoor physical activity and to guide elderly doing suitable outdoor exercise and activities by local governments and community organizations.

4.2.2 Providing suitable physical activity space
Lack of parks and open spaces for leisure and outdoor activities is widespread problem not only in studied communities, but also in almost all rural communities in Taiwan. Unlike in urban areas have urban plans to regulate the minimum parks and open spaces, the local government spend little expenditure for rural public services and facilities because fewer plan and projects were implemented in rural areas except elementary schools and road system.

According to the statistics, the elderly population in rural communities is much more than in urban areas in Taiwan. Providing suitable physical activity space for rural elderly is responsibility of government. In addition to develop new activity space, using vacant land is an alternative to provide open space for rural elderly. Planting trees along community roads and community focal points to create comfortable environment is another way to provide physical activity space. Due to the financial shortage, the partnership of public, private and nonprofit organizations will be appropriate method to get grants and resources.

4.2.3 Integrating into rural regeneration plan
In order to facilitate the rural sustainable development and rural regeneration, maintain rural ecology and culture, enhance living quality and build wealthy and beautiful new rural, the Taiwan’s Government has enacted “Rural Regeneration Act” in 2010. According to Rural Regeneration Act, the local organizations within community would propose a rural sustainable
development and rural regeneration plan based on the needs of community people. The rural regeneration plan should include overall environmental improvement of community, the construction of public facilities, the renovation of individual housing, the regeneration of industries, cultural preservation, ecological conservation, the ideas of land planning and allocation of public facilities, and subsequent maintenance management and financial plan. The Government will provide subsidies for overall environmental improvement and public facilities, such as the construction and renovation of existing farming road and waterway, water treatment and water recycling facilities, soil and water conservation and disaster prevention facilities, pedestrian ways, biking paths, community roads, ditches and simple parking lot, parks, green spaces, squares, sports, culture, landscape and leisure facilities, etc.

Integrating the needs of elderly physical activity space into rural regeneration plan seems most effective and most feasible way to acquire funds for providing outdoor space for rural elderly.

5. Conclusion

The studied results showed that farming work is an important factor to effect the elderly spending time for physical activity, many respondents have considered farming work as physical activity. This study also found that the older the more perceived farming work as physical activity and the younger the more willing to receive health information and to spend more time doing sports and physical activities. The community activity center, caring station, elementary school playground, local temple were most used spaces for outdoor activities; and the time before sunrise and after sunset were their favorite time to do outdoor exercise and activities for respondents. The little space available and most public space have no shade were problems for outdoor activities.

Studies have shown that going outdoors can have long term health benefit, particularly for seniors. For rural elderly in Taiwan, because of the limited space available and the shortage of resource, the situation is more severe than seniors living in urban areas. This study believe that through the promotion of feasible educational program, the provision of suitable physical activity space, and the integration of the needs of elderly physical activity space into rural regeneration plan would solve the problems and improve the existing rural physical environment.

References: