

Understanding Independent Living Requirements: A Study of Shanghai Seniors

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Abstract. There are more and more empty-nested elderly in China, and they need to maintain independent living with support from the family and the community. This paper discusses the meaning of independence in later life and the crucial dimensions of independence. Interviews were conducted with 51 older persons living in a community in Shanghai to understand the independent living requirements from older people's perspective. Physical capabilities, typical problems in daily living, and life styles were discussed, which offers insights into how to improve independence in later life for older people living in communities.

Keywords: Independence, older people, capability, activities of daily living.

1 Introduction

In China, families used to play an important role in caring for older people, as reflected by the Chinese traditional value of 'filial piety'. However, the 'One-child' policy and the 'Reform and Opening-up' policy have resulted in more and more small-sized families, which undermine the traditional family-based old age supporting pattern. A qualitative study shows that the capacity of the family support for the elderly in urban households in Suzhou (a city near Shanghai) has actually weakened, as is reflected in financial support, daily life caring and emotional consultation [1].

Urbanization has resulted in more and more empty-nested elderly in China. The studies on community care have reached growth peak since the publication of the China's 12th Five-year Plan which emphasizes on giving priority to the development of social service for the elderly.

Independence in later life is often understood as the ability to do everyday activities without the reliance on others (physical independence). A supplementary understanding is not doing everything oneself but having control over one's life and choosing how that life is led [2]. Independence is therefore related to people's decision making, which includes thinking and communication capabilities (mental independence). Independence in later life is also related to social constructions [3] (social independence).

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Financial independence is critical as it affects an older person's ability to maintain and improve his/her physical as well as mental wellbeing (Figure 1). In Chinese urbanized area, an older person's economic support typically comes from pension and family support.

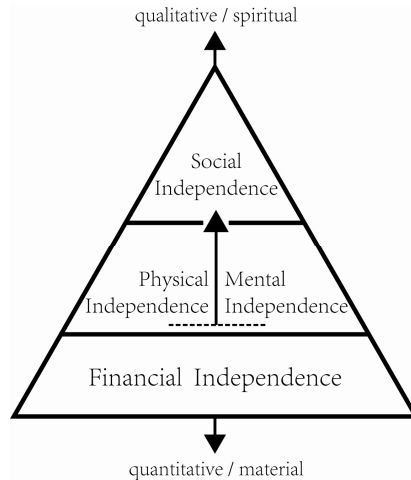


Fig. 1. The pyramid of independence dimensions

Physical independence depends to a great extent on one's physical/functional capability, likewise, mental independence relies on mental capability. That is, the more physical/mental abilities, the higher the independence. The mental status includes both the cognitive and emotional statuses. The cognitive ability is more obvious and greatly affects the physical ability, whereas emotional functionality such as depression is harder to recognize and diagnose. Inclusive design toolkit (available at: www.inclusivedesigntoolkit.com), an online toolkit presenting a model for the relationship between user capabilities and product experience, classifies user capabilities into 7 categories: vision, hearing, dexterity, reach & stretch, locomotion, thinking, communication [4]. The former five are related to physical capabilities, and the last two are concerned with mental abilities.

Social independence is located at the top of the pyramid. Secker et al. [5] proposes a two-dimensional model of independence, with one dimension reflecting the degree of reliance on others (physical/mental independence) and the other the subjective assessment of autonomy, desired level of choice and social usefulness (mental independence), which indicates that physical/mental independence could greatly reflect the degree of social independence.

Independence is not only a complex notion that includes multiple meaning, but also a mutable notion that should be thought as an unstable achievement [6]. Since the rate of capability decline in the disablement process is highly individual and people redefine the notion over time as their situation changes, it is necessary to go deep into individual levels to understand the real demands in the specific disablement pathway.

2 Methods

In order to find the independent living requirements from older people's own perspectives, in-depth interviews that last 1 to 1.5 hours were carried out. The older people living in communities were the population of interest in this study. With the help of the community residential committee of Tongji Xincun, a community near a University in Yangpu District, Shanghai, 51 persons among 60-90 years old were recruited. Two researchers (one as the interviewer, the other as a note-taker) were involved in every interview.

One of the individualistic understandings of independence is that the ability to function unaided and the absence of reliance on others for carrying out activities of daily living (ADL) [7]. What is more, the notion of independence differs to people with different capabilities. So the physical capability was asked firstly (especially the capability of using electronic products). Difficulties in the activities of daily living, and the link between a person, products/environments and other people were also taken into consideration in this study. The interviewees were asked to describe the conditions when they use products at home and the conditions when they go out for social activities.

Pseudonyms were used to ensure participants' anonymity. Pictures were taken to remind the researchers of the interviewees' living environments. All the interviews were audio-recorded and transcribed verbatim without delay for avoiding data missing, and all the data (interview notes and pictures) were put in a database for analysis.

3 Results

Based on self-report, the participants were divided into 4 levels of physical abilities in this study: very low, low, medium, and good. The summary of the participants' basic information is shown in Table 1.

Table 1. Characterization of participants

		Number of respondents
Couple / Individule	Couple	7(16%)
	Individule	37(84%)
Sex	Male	25(49%)
	Female	26(51%)
Age	61-70	8(16%)
	71-80	24(47%)
	81-90	19(37%)
Education	Illetracy or primary school	8(16%)
	Middle school or high school	15(29%)
	Junior college or above	28(55%)
Physical ability	0 (very low)	15(29%)
	1 (low)	6(12%)
	2 (medium)	21(41%)
	3 (good)	9(18%)

3.1 The Physical Capability

The participants' abilities of using everyday electronic products (e.g. mobile phones, cameras, computers, the automated teller machines – ATMs) were classified into four levels: very low (score 0), low (score 1), medium (score 2), and good (score 3). The participants who scored 0 accounted for 51% (Table 2), which suggested a low level of use of electronic products in their daily life. The reasons could be summarized as:

- Some older people could not afford these products, or they regarded purchasing electronic products as an unnecessary expenditure.
- These products were too complicated for some older people to use.
- Some older people did not trust the virtual world, and they were more willing to accept tangible things, e.g. most of the participants took money out from the bank counter, rather than from the ATMs.

Table 2. Capability of using electronic products

Number of respondents	Capability of using electronic products
0 (very low)	26(51%)
1 (low)	6(12%)
2 (middle)	6(12%)
3 (good)	13(25%)

3.2 Typical Problems

The interviewees were asked to describe the conditions when they used products at home and the conditions when they went out for social activities. The qualitative data were classified according to user capability categories: dexterity, vision, hearing, mobility and memory.

Dexterity. Most products need manual handling, and older people's loss of dexterity (at various degrees) often makes physical manipulation out of control, which causes problems in daily activities. Almost all of the interviewees (19 out of 21) who got 0 or 1 in physical ability evaluation had difficulties in opening food packaging. It was difficult for them to tear apart packaging by hands without a pair of scissors, especially the small packs with zigzag openings. Figure 2 shows the powder sprinkled on the table when an interviewee aged 84 was making a cup of instant coffee.

Pulling a plug out of electronic sockets requires both fine pinch grip and reasonable pull force from one hand, and a push force from the other. It was a challenging task for the elderly, and most of them preferred a switch to a plug.

Some activities like using a key or a mobile phone require accuracy and dexterity simultaneously. Several participants felt it was hard to pinch a key and plug it into the keyhole. Using touchscreen phones also requires fine dexterity of the index finger. In this study, only two participants used touch phones, and both of them had difficulties in touching the correct point on the screen.



Fig. 2. Typical problem of opening food package

Typical problems in interaction with products caused by dexterity limit are listed as follows (Table 3):

Table 3. Typical problems caused by dexterity limit

Products	Dexterity functions	Typical problems
food package	pinch grip	cannot do this delicate task; have to do it with scissors or other tools;
plugs and sockets	pinch grip, pull force	need two hands working together;
mobile phone key	push force pinch grip, push force	incorrect manipulations; hard to pinch a key and plug it into the keyhole.

Vision. Older people often wear a pair of reading glasses when reading texts. But some people, like Mrs. Zhao, preferred magnifying glass, because if she wore the reading glasses for a long time, the bridge of her nose would become uncomfortable (Fig. 3).



Fig. 3. Mrs. Zhao’s magnifying glass

There were also many problems when older people interacted with digital devices and their instructions. For instance, many found following instructions difficult, and they need larger texts, higher contrast, and longer pauses between setting-up steps.

The study suggests that the visual functions of contrast sensitivity and usable visual field were more important to older people for outdoor activities. Many participants complained that conspicuous marks between stairs were lacking in public spaces, such as in the subway stations.

Hearing. Most of the participants complained about the product with sound prompt functions.

“I can’t hear the sound of ‘beep...beep...’ when the washing machine finished work. I also often forget that I have had some clothes in the washing machine, which would be found a few days later. So I have to wash them again or just wait beside the washing machine when it is working.”— Mrs. Zhang, 81 years old

Some participants usually ignored the alarm because of their declined hearing, which could be dangerous.

Mobility. Typical problems caused by mobility (the ability to move and walk) limit are as follows:

- The regular sofa is too soft and low, and it is hard for an older person to sit for a long time and stand up without help. Several participants had adapted their sofa /chair with cushions (Fig. 4).



Fig. 4. The adapted sofa and chair

- Stairs with abrupt slopes or without armrests are very dangerous, and older people have to hold the armrests and move carefully step by step (Fig.5). They preferred the armrests made of wood to those of metal.



Fig. 5. The stair with wood armrest

- The bus footstep is often too high, so it is hard for an old person to get on the bus.
- Walking aids are often needed for those who cannot walk for a long distance (Fig. 6).

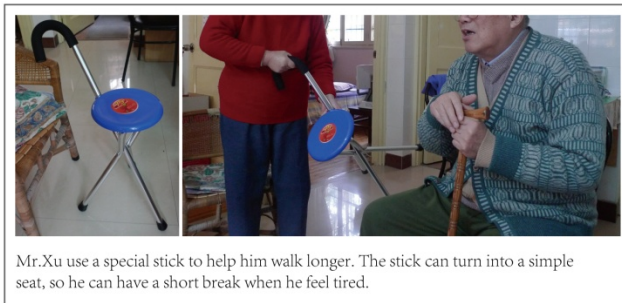


Fig. 6. The walking aids

Memory. Memory is a type of cognitive ability. According to the interview, the impact of memory loss on daily living is reflected in the following aspects:

- Many participants cannot remember TV channels, so they often write the channels down on a piece of paper (Fig. 7).

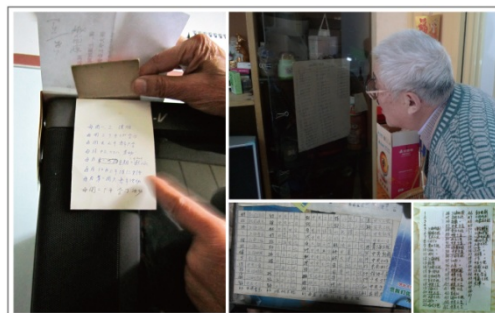


Fig. 7. The handwritten TV channels

- Commonly used small items, like remote controls and reading glasses, are often difficult to find when needed.
- Older people often forget to take medicines. Mrs. Qian had a pill box (Fig. 8), but it was useless for reminding her to take medicines on time.



Fig. 8. Mrs. Qian's pill box

3.3 Life Styles

Two typical life styles were identified: following the traditional way, or accepting new things. Most of the participants preferred old things (e.g. traditional handicrafts, Beijing Opera and “Red song”) that might evoke their memory of the youth.

“I like watching military TV programs and amateur singing contests, especially the ‘Red song’. Once you are old, you are living on memory.”— Mr. Huang, 75 years old

Many participants’ hobbies in old age were related to their handcraft skills attained in younger age. For example, Mrs. Lou was a worker in a textile factory before retirement, and she was good at knitting. After retirement, she really enjoyed knitting jumpers and making shoes and shirts for her grandson.

It was observed that older people who had good physical capabilities, or had higher living standards, or had children living abroad, tended to accept the modern life style. They were interested in online shopping, playing computer games, learning English, and playing the piano. They wanted to catch up and make connections with the new world.

“I need to be up to date with news. It will be a little embarrassing if other people are talking about news that I don't know about.”— Mr. Lin, 78 years old

Social connection was also an important factor, especially for those who moved to Shanghai in later life. They often felt lonely for leaving away from their previous social circles:

“I don't like anything in Shanghai: the weather, the bank... I really want to go back to my original place and chat with my old friends.”—Mrs. Lu, 84 years old

No matter what level of their living abilities, older people were reluctant to be dependent, and they desired to be connected with others. Mrs. Qian lost eyesight when she was young. But she managed to do a lot of things independently. The happiest

moment for her was basking in the sun, meanwhile knitting jumpers and chatting with neighbors in the community garden, which made her feel like “a normal person”. Mr. Xue lived alone, and he loved to go to the community garden to do exercise every morning. For him, it was not only for keeping fit, but also keeping connected with old friends and neighbors.

4 Discussions and Conclusions

The participants in this study were biased for their location and high education levels. There were more than 55% people who had junior college education or above. Although this made the interview easier, the sampling does not represent the general population of older people in Shanghai, and the results may not be generalizable. On the other hand, dependency can be seen as an indicator of importance for various needs. It means that the higher the dependency, the bigger the need. The people who are 71-85 years old accounted for 84% because of their higher level of dependency. So the study reflected well the old-old people’s needs.

This community-based study helps capture many requirements for independent living, from older people’s perspectives:

Physically, three quarters of the participants assessed their physical ability as ‘very low’, ‘low’ or ‘medium’. Many of them had difficulties in interacting with everyday products because of their declined dexterity, vision, hearing, and mobility capabilities. More than half of the participants had very low level of interaction with electronic products.

Mentally, memory loss had caused many inconveniences in older people’s daily life, from having difficulties in finding items to forgetting to take medicines on time.

Socially, when physical and mental abilities allow, older people enjoy socializing through community-based activities, such as exercises and chatting with friends.

Although literature suggests there is a link between physical independence, mental independence and social independence, this study did not investigate these relations in depth. Financial independence was not a focus of this study.

The findings have a lot of implications for design, which is further studied in follow-up research.

Acknowledgements. We thank all the people who participated in this research, and the help of the community residential committee of Tongji Xincun. Many postgraduate students at the College of Design and Innovation helped data collection, and our sincere thanks go to them.

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