

A09: Ordinary Happiness from Being Mobile: Experiences of Thai Older Persons Using Assistive Mobility Technologies

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Background: The number of older person to this day is increasing continuously as technology takes more roles in assisting the older persons' mobility. However, there are still limited studies about the experiences of older persons in using technology in assisting them.

Objectives: To describe the experiences of the older persons who use assistive technology for mobility. And, to search for factors that help the older persons to move and live happily.

Methodology: There were 11 older persons who participated in this qualitative study. Their ages were more than 60 years old and utilized an assistive technology for their mobility. All of participants underwent in an in-depth interviewed and was recorded. Data were analyzed using constant comparative analysis technique.

Results: There were 5 aspects which emerged from the study: 1. Factors that help determine the suitability in using assistive technology in older persons; 2. Characteristics of a good assistive technology for mobility; 3. Function of the assistive technology; 4. Painless and Confident Movement; and, 5. Technology helps to produce a normal and happy living.

Discussion, Conclusions and Recommendation: Assistive technology for mobility is essential for older persons to live normally and happily. Providers may support older persons in using technology appropriately and confidently by assessing knowledge, ability, and physical preparedness. At the same time, providers may set a criterion to determine and select proper technology for the older persons. The older persons' families may evaluate places and activities to select an appropriate device, or they may modify the places and activities in order to utilize the device. The assistive technology for mobility may be diversely selected depending on the older persons' activities. Furthermore, training, demonstration and return demonstration may benefit the older persons in maximizing the devices that can assist them in their daily activities. Moreover, studies on the role of technology and devices in response the older persons need is still needed.

Keywords: *older persons, assistive technology, mobility, experiences*



BACKGROUND

The total population of Thailand is 65.9 million people and over 11 million or 16.5 percent are older persons aged 60 and above which continuously increases annually. It is expected that in 2020, Thailand will become a completely mature society with a 20% older population (Thai Elderly Research and Development Institute Foundation, 2016). With the 23.5 percent of the age index, Lampang province consist of the highest number of older persons nationwide (Thai Elderly Research and Development Institute Foundation, 2016).

The elderly is a person who is older than 60 years old. It is the age in which manifests physical changes and deterioration of the function of various organ systems which can lead to accidents or illnesses (Chittaphunkul, Suriyawongphaisan, Kunanusan, & Poolcharoen, 1999). These illnesses and accidents may cause immobility in daily activities. For examples, changes of the nervous system, numbers of neurons and effectiveness of brain function decrease, memory deterioration, decrease of reflexes, slow movement and thoughts that make the older persons to have accidents easily (Faculty of Medicine, Chiang Mai University, 2013).

Another important change is the vision. Most seniors have poor vision; Hyperopia or long sightedness can make them incapable of seeing clear object clearly. Seeing in the dark or in the night time also becomes difficult without the help of light. The older persons have narrow vision field, degeneration of the eye ball muscle, and sensitivity to image is decrease (Faculty of Medicine, Chiang Mai University, 2013).

In addition, the elderly also experiences changes in muscles and bones. The amount and size of muscle fibers, and the muscle contraction power decrease, various movements become inflexible. Bones become lighter due to excessive lack of calcium that results to weak and brittle bones (Faculty of Medicine, Chiang Mai University, 2013). The length of the spine is reduced, cervical bones are thinner, more humpback, height reduces by 3-5 inches. Rheumatism is also present due to the articulate cartilage degeneration resulting into inflexible joints. The contraction of the joint causes inflammation and infection. The most common areas are the knees, hips, and the spine (Pakanta, 2013; Phirsungsong, 2013)

The degeneration of the body functions due to aging, illness or accidents may lead to the immobility of the older persons or may also cause difficulties in movement. This limits the older person in their daily activities which cause them to depend on their keen or other people to help them (Thanapoom, 1992). However, due to economic and social reasons their offspring have to work outside of their home, or even to another province. The older persons have no one to take care of them all the time and continuously. The older persons then adapt in using technology in their daily life (Agthong, 2009; Poncumhak, 2013).

The technology used that had major role on the older persons is the assistive technology for mobility. To have the ability to move or to be mobile again enables the older person to have a normal life without depending on other persons and gaining happiness in the process (Davenport, Mann, & Lutz, 2012). Sometimes assistive technology for mobility is huge and heavy that the older persons could not use it easily. The technology may also be unsuitable for

the environment of the older persons' houses. There are cases where in the technology causes the older persons to lose their self-perception that is why they need to adapt and learn how to be familiar with the devices they can use in their daily life for them to be happy (Davenport, Mann, & Lutz, 2012).

Therefore, the researchers weighted the significance of the older persons' experiences about utilization of assistive technology for mobility in their daily life by conducting an in-depth interview. The data obtained will be beneficial for the understanding of this issue and may be applicable to work, and develop nursing practice. In addition, the data may help in providing suggestions for the device instruction that can help the older persons to be familiarized with assistive technology, fast and easily, and may reduce the problem caused by technology.

OBJECTIVE:

To describe the experiences of older persons who use assistive technology in their mobility. And to search for factors that could help older persons to be mobile and to have happy daily life.

METHODOLOGY

This study is a qualitative study. There were 11 older persons who had aged more than 60 years and use the assistive technology in their mobility who volunteered to participate in this study. The researchers had worked based on the following steps:

Protection of Human right

The researchers submitted the study proposal to the Research Ethics Committee of Boromarajonani College of Nursing Nakhon Lampang. After the approval of the proposal, the researchers explained the study project to the expected participants. And, described that this study will benefit the older persons and others who use assistive technology for their mobility. The participants underwent in-depth interview. The data were kept confidentially and was presented as a whole. The participants had the rights to withdraw or drop from the study any time and will not lose their patient rights.

The researchers, as the instrument of the study were trained about how to conduct an in-depth interview from experts for 3 hours. The researchers had discussed together about the method and the ways to collect the data to reduce the error from different individual. Then, the author collected the data and had tape recorded all interviews. Each participant has an in-depth interview for 30-40 minutes.

Data Analysis

After interviewing, data were transcribed using verbatim technique, then, constant comparative analysis was used to categorize the data. Then the data was compared based on the similarities and differences of the data, and linked the relationship of the data. There were 5 themes which emerged from the study, they are as follows:



1. Factors that help determine the suitability in using assistive technology in older persons;
 2. Characteristics of a good assistive technology for mobility;
 3. Function of the assistive technology;
 4. Painless and Confident Movement;
- and, 5. Technology helps to produce a normal and happy living.

Factors that help determine the suitability in using assistive technology in older persons

The results showed that the certain activities, places, and the older persons' physical health were the key factors in helping the older persons to select a suitable technology for their mobility.

1. Certain activities in the daily lives of the older persons need assistive technology such as devices that helps in walking, getting up from a seat, and getting out from their homes.

"I use a walker when I walk to the bathroom"

Deaunpen (76 years old)

"A Cane, I use a cane to help me when I walk inside my house"

and the cane help me to stand up from the seat

Somsri (77 years old)

"When I get up from the bed in the morning, I use tree legs (tripod cane)."

Deaunpen (76 years old)

"I used my cane when I go out my house, go to the temple, go to the funeral,

every time when I go to see the doctor, go to visit my sister."

Jankhome (67 years old)

"When I go outside I use a wheeled walker"

Saijai (69 years old)

2. Places refer to the places where the older persons have their activities such as bed room, bathroom, kitchen, or the front yard, including the environment and surfaces of the area. For examples....

"Inside my house, if the surface is plain or smooth, I use the cane"

Deaunpen (76 years old)

"In daytime, I use a cane, the door of the bath room is narrow I cannot use the wheelchair"

Meena (85 years old)

"I like to use a cane much more than a walker, the walker is clutter and needs more space."

Mali (73 years old)

*"Outside the house, if I use a wheelchair I may not go to any place,
I am afraid that the road is pitted"*
Boonmee (80 years)

*"When I go to buy my food outside my house,
I use a wheeled walker; it is convenient"*
Saijai (69 years)

3. Physical health refers to the health status, illness, strength of the older persons' body and also the ability that the older persons can do in activities. For example:

3.1. Physical illness

*"I fell on the floor in this house, and it made me unable to get up by myself,
I have to use a walker"*
Boonsong (70 years)

"..I have 4 legs (a walker), but I do not use it, I use it after I had an operation."
Jankhome (67 years old)

*" My tendons at the heel are damaged, I got an operation 7 years ago, this caused me
to be unable to walk, the doctor told me to use a walker"*
Deaunpen (76 years old)

3.2. Deterioration due to Aging

*" My daughter told me to use a cane. It would help me to go to any place I want, at
least if I had an imbalance, I could use this cane"*
Khomemee (85 years old)

*" At this time, my eyes could not see clearly,
I am getting old, I am 90 years old, my sight is not good"*
Boontha (90 years old)

Characteristics of a good assistive technology for mobility

In addition, the older persons had indicated the characteristics of a good assistive technology for mobility which included well-grasp, light weight, balanced-base, and suitable size both in width and height.

Well-grasp refers to the device that could be grasped well, fit with the hand, and feel comfortable to grasp. The handle is not too small or too big. While using this device, the device is not slippery.

*"It could be well grasp, fit with the hand, the crutch from the hospital is balanced
well."*
Somsri (77 years old)

"The hospital crutch is good, well-balance".

Meesook (90 years old).

2. Light weight refers to the lightness of the object no need for much strength for lifting.

"When we grasp, it fit with our hand and the weight is light"

Somsri (70 years old).

"Lifting a walker need to use much power, therefore, I use a can instead, it is lighter."

Saijai (69 years old)

3. Well balanced base refers to the security of the base of the device, nonskid, and could be attached well on the floor using a rubber base, or wheeled base.

"I use a cane because the base is a rubber, it is not slippery"

Somsri (77 years old)

"4 legs is good, it could prevent fall, and can be used for a long time"

Manee (71 years old)

"The wheeled walker could help for balance"

Saijai (69 years old)

4. Suitable size refers to the devices which have the width and height suitable with the older persons' physical health. For example:

"Using a cane is convenient."

Jankhome (67 years old)

"Easy for carrying"

Meesook (90 years old)

"I like a cane more than a walker, the walker needs more space"

Mali (73 years old)

Function of the assistive technology

Key characteristics of assistive technology for mobility that help select the suitability of the device for older persons: well-grasp, light weight, balanced base, and suitable size both in width and height. If the older persons select devices based on the key characteristics, the chosen device will suit the older persons' condition and their environment which provides convenience and safety. Therefore, the assistive technology functions as an assistant in mobility, security, and convenience, and body support and strengthening.

1. Assisting to move dexterously refers to easy to use, no interruption, and dynamic. For example

"I can walk dexterously when I use a cane"
Deaunpen (76 years old)

"Walk conveniently when I use a crutch"
Jankhome (67 years old)

"Using a cane for support and a walker sometimes could help in walking comfortably"
Saijai (69 years old)

"Nowadays, I can walk dexterously and can do my housework"
Boontha (90 years old)
"Right now, I can walk to any place conveniently, strongly"
Somsri (77 years old)

2. Security refers to well-balanced, secure attachment to the floor, and no blending. For example:

"After using the device, I have more confidence"
Saijai (69 years old)

"After using, I felt I have more confidence, I am not afraid of falls, When I sway, this help me"
Khummee (85 years old)

3. Convenience refers to easy to use, handy, light weight, and suitable with the floor. For example:

"When I go to buy food, I use wheeled walker, it is comfortable"
Saijai (69 years old)

"It is a self-rolling, I can do by myself, it is comfortable"
Boonsong (70 years old)

4. Body support refers to the device that could assist and support the older person's body.

*"When walking, if the pain happened or almost fall,
a cane helps in supporting our body, we felt better."*
Chumnan (79 years old)

"I start to walk better, when I use a cane to support"
Saijai (69 years old)

"Walking is difficult, I use a cane to help support my walking"
Somsri (77 years old).

5. Strengthening the body refers to the device that could help older persons to have energy to be mobile.

*"A cane helped me to have more energy, helped to go to many places,
without a cane, I cannot go"*
Jankhome (67 years old).

*"I am heavy, when I have a device to help me to walk,
I could lift the full weight on the floor, I could help myself, I am independent"*
Manee (71 years old).

Painless and Confident Movement

Assistive technology for mobility could help older persons to move dexterously, securely, conveniently, and helps in body support and in strengthening the body. The older persons must select the technology compatible with the places, physical health, and activities. By doing so while adhering to its functions, the older persons will have a painless and confident movement. For example:

1. Painless refers to a pain free process in using assistive technology for mobility especially for walking to support body parts such as the legs, knees, and back.

"Using a cane, knee joint pain has reduced"
Meesook (90 years old)

"No pain when use it"
Deaunpen (76 years old)

"Using a cane helps reduce the weight pressure on my knees"
Jankhome (67 years old)

"Leg pain is decreased"
Somsri (77 years old)

2. Moving confidently refers to the positive feelings on what we can do, and do not worry about what we cannot do. Belief on our value and our ability, therefore, the older persons can walk, get up, take a seat, and perform public activities happily. For example:

"After using the devices, I feel comfortable, and have 80 % confidence"
Chuchuan (79 years old)

*"After using it I feel like I'm not afraid to fall,
not afraid to slip, I walk well because it helps with balance"*
Khomemee (85 years old)

Technology helps to produce a normal and happy living

Assistive technology could help the older persons to move wherein they can do their daily activities as usual. The older persons can go to any place conveniently as they want, they can take care of themselves.

1. Going to any places refers to the older person's access to different places as they want as usual happily. For example:

"I can walk around my house, as far as I want"
Boonsong (70 years old)

"without a cane I cannot go anywhere"
Jankhome (67 years old)

"Using a cane when walking helps"
Deaunpen (72 years old)

"Without this device, I could not go to any places"
Manee (71 years old)

2. Self-care refers to the ability of the older persons to take care of themselves, they do not need other people to take care of them.

*"In the past, I have to stay in bed, when I have this cane,
it helps me to take care of myself"*
Manee (71 years old)

"I can take care of myself"
Khomemee (85 years old)

"I can help myself, do everything more comfortable"
Boonsong (70 years old)

3. Decrease in dependency on others refers to the older person's ability to help themselves, they could move by themselves. They are independent. For example:

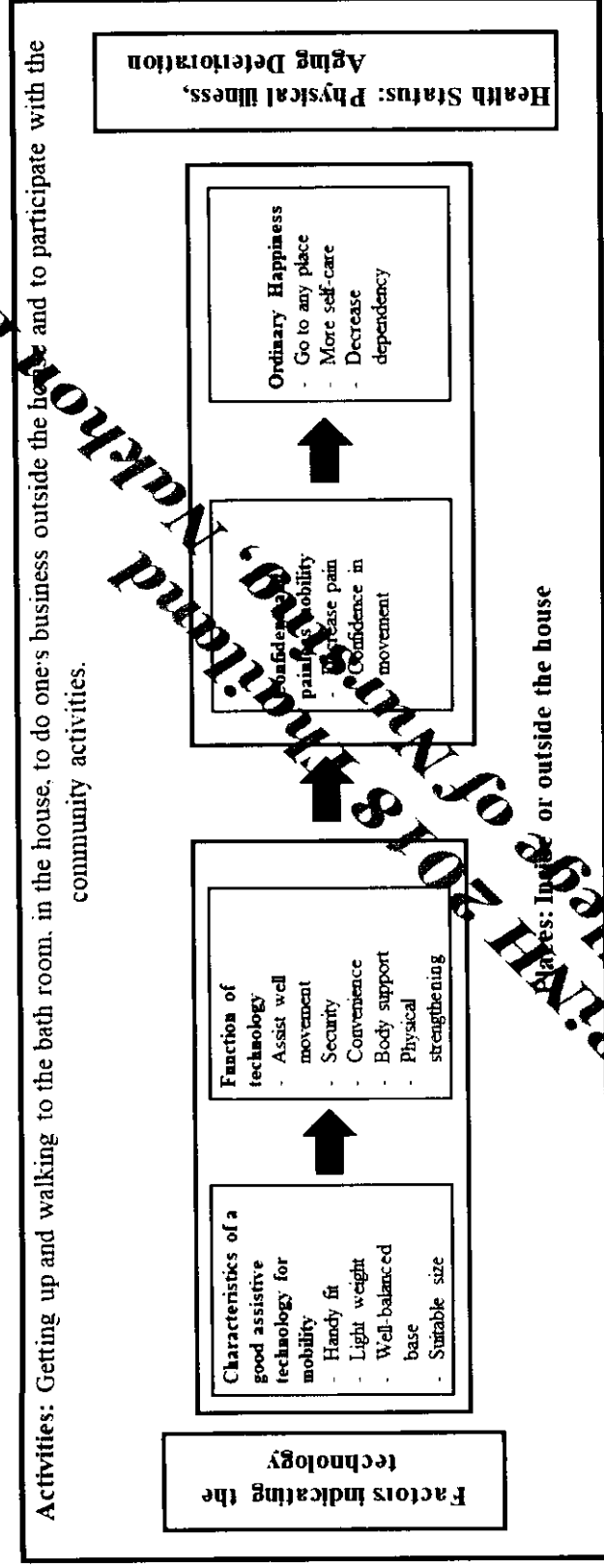
*"I am heavy, at the early stages of my sickness, my son and daughter
had to carry me together. After I had an assistive device,
I could lift my full weight on the floor, I could help myself, I am independent"*
Manee (71 years old)

*"My son and daughter do not take care of me all the time,
they have to work at their shop, but they come back to have a meal every day"*
Khomemee (70 years old)

*"I can do many things by myself. In the past,
I need my nephew to support me in walking all the time."*
NBoonsong (70 years old).

When older persons could move well and securely they could go to any places they want with the assistance of the device. The devices support and enhance the strengthening of the muscle to move. The more the older persons can move the more they gain their self-confidence. Furthermore, the movement could help relieve body pain. Good mobility, the older persons have a better quality of life, decrease the dependency, have more self-care, and have more happiness.

Ordinary Happiness from Being Mobile



Happiness is a need of older persons who have mobility deficit. The older person would be happy when they could resume their normal life, they can go to any places, take care of themselves, and decrease dependency. Using assistive technology for mobility could help the older persons gain confidence, move conveniently or decrease pain. The effect of the assistive technology is that the technology could function as an assist and the older persons mobility with security, comfort, physical support, and physical strength enhancement. In addition, good technology depends on the devices: handy fit, light weight, well balance base, and suitable size. The last one is that the older persons would select the assistive technology for mobility based on the characteristics of the activities, places, and their physical health to suit their daily life.

CONCLUSION, DISCUSSION, AND RECOMMENDATION

Summary

Ordinary happiness of older persons happens when the older persons could move, they can go to any place, can take care of themselves, and decrease dependency by using assistive technology for mobility. This technology assists the older persons to move well, securely, comfortably, and enhances the older persons' physical strength. Good characteristics of the devices include handy fit, light weight, secure base, and suitable size. The older persons select the assistive technology based on the characteristics of the activities, places, and physical health that are suitable with their daily activities.

Discussion

From the study of the experiences of older persons who use assistive technology for mobility in Mueang District, Lampang Province, it was found that the older persons have ordinary happiness because they can go anywhere, take care of themselves, and decrease dependency. These lead to the increase of their value and their dignity which are compatible with the study of Happiness Indexes of Older Persons in Lampang Province conducted by Lorga and colleagues in 2008. The Happiness Indexes of Older Persons in Lampang Province included 9 indexes: good physical and mental health, could help index of their offspring, continuously offering (make merit), transferring the ancestor wisdom, volunteering for the community, interest in savings, offspring are ready to pay respect and take care of them, being in the contemporary technology era, and letting down with happiness. All happiness indexes showed that the needed factors for taking care of older persons are correlated such as economic, social, and health and are focused on the valuing of the older persons in the community and intergeneration of relationships. Findings could be discussed as follows.

1. Factors help determine the suitability

It was found that the key factors such as characteristics of activities, places, and physical health help the older persons to select suitable technology. Our study quite differed from Layton's in 2012 (Layton, 2012) which studied about the factors related to assistive technology for mobility and found that assessment of the devices was based on economic status, technology led to modifying the environment, using technology in public faced with the problem and convenience in using it in the community. Therefore, the people who intend to use the assistive technology need to modify their environment to suit with the selected technology. However, our study found that the older persons determined the places and environment before selecting the assistive technology to help their mobility.

2. Characteristics of a good assistive technology for mobility

It was found that good characteristics of assistive technology are: handy fit, light weight, well balance base and securely, and suitable size both in width and height.

3. Function of assistive technology

Good technology may function as respond to the needs of the older persons and appropriate with the individual and the environment, easy to use and safe. From this study it was found that functions of the assistive technology for mobility are as follows: could assist to walk well;

secured and comfortable; and physical support and strengthening. These functions are compatible with the study of Hedberg-Kristensson, Ivanoff, & Iwarsson (2007) which stated that Assistive Technology (AT) referred to the technology that utilized for producing the device that could help to add up the ability of older persons or disable persons who have a deficit to do any kind of activities in their daily life. And, those needed to depend on others' assistances as the least which covered providing care, application, and implementation to reduce the barriers of the activities.

4. Confident and painless mobility

Selecting assistive technology for mobility suitable with activities, places and physical health of the users could help the older persons gain self-confidence, and experience painless movement which is compatible with the previous study conducted by Lorga and others (2012) about experiences of older persons who fear fall, the study found that there were 2 aspects of fears:

- 1) Afraid of Repeated Fall which included fear to fall alone (no person to see the situation), fear to have more illness, fear to be other people's burden, and fear of death after fall.
- 2) Fear of Fall that affects the daily life which included the thought about their limitations, not daring in daily life, and adapting to their daily life by according the situation, using the religion as a refuge, self-help and family support.

RECOMMENDATION

Assistive technology for mobility is essential for older persons to live normally and happily. Providers may support older persons to use technology appropriately and confidently by assessing the knowledge, ability, and physical preparedness. At the same time, providers may set a criterion to determine and select proper technology for the older persons. The older persons' families may evaluate places and activities or may modify the places and environments in order to suit with the technology. The assistive technology for mobility may be diversely selected to be appropriate for the older persons' activities. Then, training, demonstration and return demonstration may benefit the older persons in maximizing the use of these technologies. Further studies about how the use of technology and devices can respond to the older persons are needed.

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