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R.I.T

The Embrace - Design for Elderly

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Thesis

Master of Fine Arts in Industrial Design

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Abstract

The elderly requires special care, especially those who live in China and living alone. This age group faces physical, mental and emotional challenges, one of which is loneliness. This paper explores the help people age 65-75 in China need to reduce their loneliness due to their children living away from them. The proposed solution is to encourage them to meet new people and keep them busy; then reducing their isolation. One such solution, a bench, is designed to curb the loneliness of elders by providing a platform to connect with each other and promoting their health through physical exercise, comfort, and safety.

Keywords:

Chinese elder people, mental emotion problem, share space, loneliness, communication.

Introduction

Loneliness is a dangerous psychological problem to elderly. In China, this phenomenon happens everywhere. When elders have a psychological problem, it is very likely to affect the life quality of a whole family. This paper points out the harms if elders have a psychological problem and the reason why they are feeling lonely.

The research project focuses on the Chinese Elder people who have mental emotional problem. A family study is done in 2010, showed that China has 83 million people who live in isolation and more than 18.9 million people were over 65 years old.^{1, 2} Another research study done in Shanghai indicates one-third of people who feel alone are between age 60 -70 years old, and three-fifths of the them are in the age group over 80 years old.^{3, 4} The loneliness has adverse effects on the mental stability of the elder people. Elders living alone have a higher risk of death compared to other elders who live in

nursing homes. This research project aims at minimizing elder's loneliness by helping them to have more interpersonal communication and engaged in exercise in order to enhance their level of interaction with other people. The research proposes that a suitable public area is appropriate for elders to have access to people, make new friends and ultimately enhance their well-being.

The Embrace provides a space to the elderly could have an introduction to others without feeling embarrassed which it helps elders keep mental health when they live alone. It not only assists users to make friends with others, but also establish a healthy and interactive relationship with people in other age group.

Background

Increase in the world population coupled with advancement in healthcare services implies that the average lifespan has improved tremendously notably in the developing world economies. As a result, age of population has become a social concern in China given that most young people who are responsible of taking care of their aged parents are migrating and staying in the cities, whereas older people, return back to villages because they are not physically capable of working in urban areas. Elders begin to stay alone as children who as supposed to take care of them are in shortage of time, where such people are forced to work in different areas than those of their parents. As people advance in age, their physical and mental abilities decline significantly, and hence they are unable to engage in daily physical activities due to failing age. Further, they begin to stay alone as those who are supposed to take care of they cannot spend all their time with them gave the changed economic and social factors, where such people are forced to work in different areas than those of their parents. As a result, the mental health of the aged

people declines significantly. Furthermore, old people tend to become more irritable and impatient because of their physical problems and sense of loneliness and lack of social community surrounding them. The ability of the aged people to converse with others also declines further deteriorating their loneliness. Elders also tend to have high self-esteem and feel they could handle anything, like they used to do in their earlier ages. But in fact, their physical strength of their body does not allow them to be engaged in many activities and so they are seriously in need of other's help. However, many elders who suffer from physical and mental challenges do not want to be taken care of by other people because they don't want to look vulnerable in front of other people. This roots from high self-esteem or feeling of independence, when in fact they do need other's help. Sometimes, they would like to do more exercises by themselves. Therefore, the Embrace still keeps private space for them, but it provides users more opportunity to watch what others doing. After their observation, they get more sense about the situation they are.

Social effect

From my interview shows that older adults have a lot of time during the day, and the main point of what they are doing is not just for the result, but enjoying the process. Some of the elders do not need to go to work. The research shows the elders spend most of the time sleeping and resting. Then spent time on their domestic activities, watching television and related activities, eating and drinking and socializing.⁵ But for the elders who live without their children, they have just had a few things that they can do during the day. Instead, they have more lonely time because they don't receive enough attention from their children and this is the primary cause of mental health problem. Thus, it can be seen elders spend more time on the bench because they have more free time. But the

Embrace welcome every age group. As shown in the survey, when kids come back from school and parents finish their work, they would go out for playing or doing exercise.

This is a chance for elderly to make friends with other age groups.

In the article “Older peoples’ perspectives on time spent alone” presents an analysis of the elders on occasion spent apart. The report led to the identification of Two key themes.⁶

Firstly, “taking a balanced attitude to life also influenced perceptions of time alone.” The elders need to find an equilibrium point between the time they spend alone and the time they spend with their families and friends. Furthermore, for the elders who just lost their spouse, they have the more difficult time of the transition to live alone because they never lived alone before. For the elders who just got free time from their routine of work or take care the kids, they also have a difficult time to adapt the “free” life.

Then, some of the older people want to keep themselves busy. “Keeping busy was thus also a means of avoiding boredom, which participants constantly referred to as a state they wanted to avoid. Being busy was also a means of avoiding feelings of loneliness.” Some of the elders are doing leisure activity, such as reading, sports, and craft. Others are volunteered in public activities or join local groups. “The nature of the occupations varied, but the common purpose was for the enjoyment derived.” Some elders have an antipathy to social activities. They would rather stay at home alone than connect with others. This long period of social isolation will likely to develop mental health problems and often links to physical challenges which put elders in very vulnerable position.

In china, people always living in community. This phenomenon brings many benefits

and disadvantage. But for elders who live alone, it is an advantage to them. Then benches set up on the park or community and around exercise equipment have favorable geography location.

Survey

By interview of some elders who are in China. Final results show many elders only sitting alone when they are in their community and do not engage in other things. The reason why they just sit there is that many elders do not know how to begin a conversation with others. Further, they need to keep their private space when they are in public area. They are instead just watching other elders doing exercises than joining them. There existing public facilities products on the public space, a direction of providing better care for elder beyond their problem are pointed out. Creating topics about this product for elders could be a great start for communication which providing a comfortable environment for elders to interact and giving them a sense of security both mental and psychological.

According to the survey, results shows that in China, many elders will go to the community or park doing some exercises after dinner. For instance, the old females would like to have Guangchang Wu (elders dance together as a group in public area) in their community while elderly males prefer to do Taichi and play the Chinese chess, etc. But for the lonely elders, they just sit around them but not join them. They do not have much communication with others and do not have many requirements which means they do not want other's help, even if they need help. Therefore, they would rather spend more time to stay at home than going out. One reason is that they feel inconvenient to go outside due to physical challenges. The nother reason is that they think no one could

communicate with them. Which means they felt lonelier when they were in a lively atmosphere. The most frequent thing they do at home is having a coffee or tea and sitting on the balcony or living room to enjoy the natural scenery or watch TV. But they still want their kinsfolk or friends with them together when they are doing that. Sometimes, they are afraid to be the encumbrance to their children. So that, they won't ask their kinsfolk to stay with them. The elder people are compassionate. They could capture emotion from a small deed of their kinsfolk, but instead, they keep their thoughts and feelings to themselves without speaking them out.

In <Mental Health of Elderly People>, represent that “Mental health conditions are an important cause of morbidity and premature mortality in older adults. Dementia and major depression are the two leading neuropsychiatric disorders which affects the quality of life of elderly people.” So, the main problem of elders is a mental health problem.⁷ Everyone, especially for the families should be attached to the psychological issue of elders; their specific life event should be taken into consideration. A small thing could reduce their loneliness and improve their life enjoyment.

A study by Barney, Thomas, and Sandrine Juin has shown that, “informal care reduces the risk of depression of dependent elderly and that formal care increases their general mental health.” The result of their study is that the families informal care tends to have a long-term effect, which means the families play an essential role in elder people's daily life. People believe that elders should enjoy the rest of their lifetime, not being affected by any mental or physical health problems. Especially for their remaining time, elder people should enjoy it, not suffering from health issues.

Existing market and design

Most products in the market assist aged people in minimizing physical challenges caused by advancement in age. These include products such as crutch, walking aids, toilet support, etc. However, there are very few products and services that help to enhance the mental health of aged people. Old people lose their friends or spouses and find it hard to make new friends at this stage. The Embrace could help elders create topic. Therefore, they could have more conversation and make friends. The design of bench focusses on three areas.

1. Sharing space

The idea for this bench is to design a public facility in the park or community. Elders still stay in the homes when they feel bored and lonely because they are afraid of talking to others. This bench enables them to feel better when they go to the public space. Furthermore, the bench provides a rest area and a space for them makes new friends.

Sometimes, elders still stay in the home when they feel bored and lonely because they are afraid of talking to others. This design will enable them to feel better when they go to the public space. Also, this project provides a space for them to make new friends.

By concept, more research about interpersonal space and activity of elders. Anthropologist Edward T. Hall analyzes for levels of social distance that occur in different situations⁸:

1. Intimate distance: 6 to 18 inches (15-45cm) — closer relationship or greater comfort between individuals.
2. Personal distance: 1.5 to 4 feet (45-120cm) — between people who are family members or close friends.
3. Social distance: 4 to 12 feet (120-360cm) — often used with individuals who are

acquaintances.

4. Public distance: 12 to 25 feet (370-760cm) — commonly used in public speaking situations.

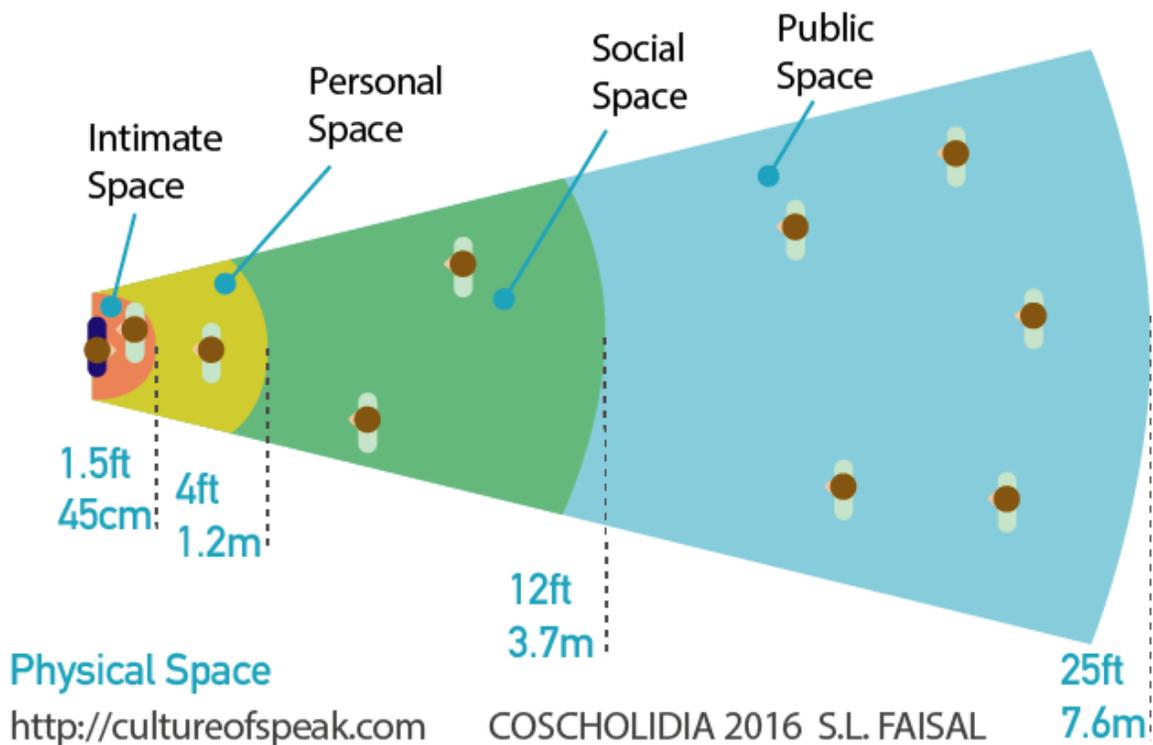


Figure 1

But the new research of scholars did in China show a little bit different with Edward T.Hall. The distance between people who are friends in China is 50 - 100 cm. And the standard range is around 150 cm. But it is all in the field of Hall's four levels of social distance. Only the gap in China is close.⁹ Also, this is a cultural difference and a reason why some elders are going out when they feel lonely.

2. Sitting position

After research from the Internet, most benches are existing in the public space are making people sitting on one line or face to face. There is also a seat that makes people sit back to back seem as *figure 2*. Because of the nature of this bench design, users are not

given chance to have eye contact with others which reduce the chance for them to have communication. *Figure 3* shows the private space very well. However, it doesn't fit for elders. And it is difficult for the elder to feel safe when they are sitting on there. Besides the distance to close to them. As the bench *figure 4* shows that elders need their private space but they also could see the things happened around them. Therefore, they could get more sense of security from the bench.



Figure 2



Figure 3



Figure 4

3. Common topic

The bench provides an ice breaker between elders who don't know how to start a conversation with others. Elders talk very little when they are outside and have more time stay alone. The place elders go always within their community or small parks which near their homes. They won't spend much time for doing exercises. Therefore, this project will lead to elders to do some activities with safety so it could provide positive effects on their health. This project also provides a rest area for them. It promotes them to have more

time to stay with others and reduce the time they stay alone. As *Figure 5* shows the bench will set up in a park or community and close to exercise area. Also, the common topic is about the massage area because of they are experienced it at same time or together.



Figure 5

Testing report

The testing had eight to ten people to experience and focus on six parts of the bench which are: sitting distance and angle, seat angle, seat back angle, seat height, massage area height and width. (*Figure 6*) After the test for the sitting position, result shows the best angle is 60 degree. At this corner, people could see each other but without feeling embarrassed. Also, there was a spot where both of them could see what happened in that area. Furthermore, the distance between primary seats is 100cm, which is an appropriate distance for people who do not know each other. After having nine people to test on the prototype, the best angle between seat and leg is 80 degree and the angle between seat and back is 103 to 104 degree. People's barycenter move to back, it benefits people's back to fit better on the bench massage area and gives elderly a relaxation on their back. Most people feel comfortable of 16-17 inch when they are in a sitting position. Elders

could seat a little bit longer on the bench which means they have more time and opportunity to meet new people.

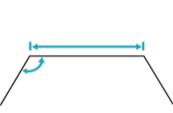
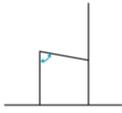
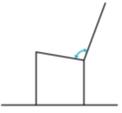
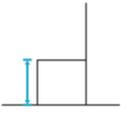
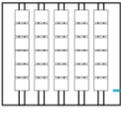
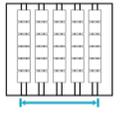
Sitting Distance & Angle	Seat Angle	Seat Back Angle	Height	Massage Area Height	Massage Area Width
					
31 - 35 IN & 120°	Angle : 80°	Angle : 103° - 104°	15.5 - 17.3 IN	6 - 8 IN	4 - 7.5 IN
8 People	9 People	9 People	9 People	10 People	10 People

Figure 6

Appearance



Figure 7

As Figure 7 shows the shape of the bench seat, which inspired by a person open arms and invite people to sit on it. It leads people to have a comfortable environment to communicate with others. The structure of bench back gives more area of contact with people's back. Therefore, elderly could get the better massage of their body. After testing at the height of massage balls, the bench offers better service to the different body shapes

of elderly. Also, the shape of the handle parts provide convenience for users in different heights. From the side view, the shape of handle and legs resemble walking stick and it brings the sign of strong to elderly.

Materials

The seat part is made out of wood which indicates the integration between human and nature, it could give elderly more comfortable feeling on the bench. Legs made out of stainless steel would be more stable into the ground for long time using. The handle and back structure of the bench made out of black steel pipe connect with the seat part firmly. Massages parts are rubber could give elderly soft and comfortable feeling.

Users experience

Once elderly leave their home. That means they want to have communication with other and they dislike the feeling of loneliness. The bench provides a space to facilitate social interaction and also avoids awkward eye contact with strangers.

Conclusion

Elderly is an important and special age group of all age and should have good experience at this stage of their lives. Anyone does not want to be feel loneliness because it really drives people crazy. This project provides an opportunity to them to make new friends and be more socialized. Also, it reduces their loneliness in limit time and space. Most elderly people have choices and purposefulness.

This is determined by the physical and psychological characteristics of the elderly. Compared with other elders' design, they are more inclined to choose the products they need, so we must seize the elderly. The psychological characteristics of human beings,

the production of products that meet the needs of the elderly as much as possible, should pay more attention to and care for the elderly in design.

First, the Embrace could help elderly feel better when they go to the public space. Secondly, from the perspective of ergonomics, the Embrace is designed to be very reasonable and to offer the greatest extent of comfort for the elderly. Thirdly, the Embrace provides an ice breaker for elders who don't know how to start a conversation with others. Last but not least, manufacturing materials of the Embrace are very strong, and the Massages parts are plastic or rubber could give elderly soft and comfortable feeling.

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