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Health Co-Creation in Social Innovation: Design Service for Health-Empowered Society in China

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Abstract: Health is not only an individual or personal issue but a social related outcome co-created by a wide range of stakeholders. As public health challenge is proved to be a social issue, design service to promote social innovation could be an effective approach for health-empowered society. In China, designers co-created innovative service with stakeholders to promote social innovation approaching public health. Through some cases, how the service design tools and methods are applied to co-design healthcare service to meet the local need and how social innovation are co-created under the local social context are introduced. In the end, the effect of design strategies for health-empowered society through co-created social innovation are analysed.

Keywords: Co-design, Social innovation, Service Design, Health-empowered society

1. Introduction

Nowadays, health issue seems as much a social issue as it is a medical one. Robert Wood Johnson Foundation estimated that just 20% of a person's health is related to medical care while more than 40% related to social factors. According to Health-Related Social Problems (HRSPs) and Social Determinants of Health (SDH) theories, public health is associated with social characters and can be changed or even improved through social change and developing. Therefore, design for healthcare service to some extent is a form of social innovation.

Designers, like Aarhi et al (2016) and RED Team, also find that traditional public health research independently could not help them to deal with health problem when it seems more like a social challenge, so they decided to follow human-centered design process to deal with local health problem. Through series of social innovation work, designers and other stakeholders co-created health as a kind of social value. This value is not only about enhanced public health system, but also healthy lifestyle and sustainable relationship.

Achieving stable health status often requires integrating resources beyond an individual's own, suchlike specialized medical knowledge, medication or surgical operations, which may be beyond

individual's personal skills or current resources. While in recent service literature, health has been recognized as a co-created outcome and the healthcare service co-creation has been defined as "activities with self or in collaboration with members of the service delivery network including self, family, friends, other patients, health professionals and the outside community" (McColl-Kennedy et al. 2009, p.11). Because of this, designers tend to integrate social resource to co-create innovative service or product to tackle public health problem. While in China, it seems more complex as a wide range of stakeholders are involved in health service system, so designers need to do some creative work to identify the key stakeholder and common pain point.

As health is a co-created outcome supported by different stakeholders, co-design is then like a good method for health service design. While social innovation can solve or release social challenge, Chinese designers also try their effort to deal with health issue through social innovation. In this paper, we will discuss health co-creation for health in social innovation.

2. Social Innovation for Health Challenge:

2.1 Social Dimensions of Health

World Health Organization (WHO) defines health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." While social well-being is defined as "the appraisal of one's circumstance and functioning in society (Social well-being. Social psychology quarterly, 121-140.)", which now seems more important than other parts of health. WHO also claimed that individual health is related to some social factors like socioeconomic, cultural and environmental conditions (see in Fig.1).

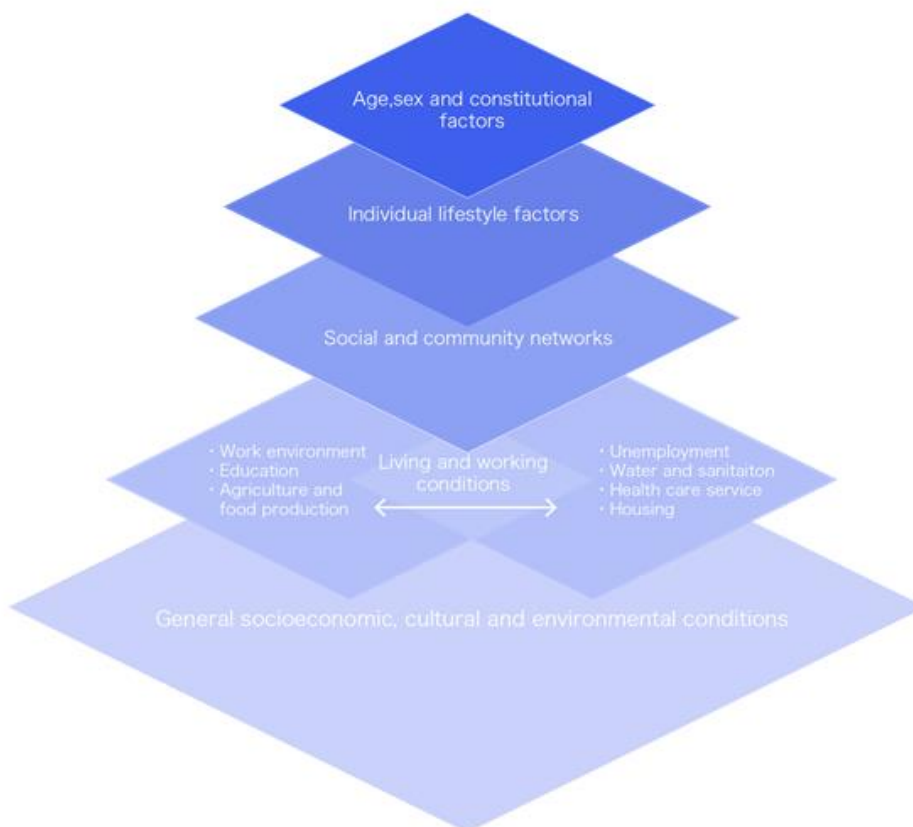


Fig.1 Social dimensions of health (modified based on Dahlgren G, et al, 1991)

The book *Social Determinants of Health—The Solid Facts* outlined the contribution of a range of social factors to population health: work, unemployment, stress, social exclusion, social support and the social gradient (Wilkinson R G, 2003). Furthermore, health has been regarded as “a dynamic balance between opportunities and limitations, shifting through life and affected by external conditions such as social and environmental challenges” (Huber et al. 2011, p.2).

Pritpal S. Tamber (2016) said that our health status is very much based on our life circumstances, making it social as well as individual. And not all disease, pain, or defects have respective treatment that people want to take. He also said that “As we see health care accounts for only 10-20 percent of premature mortality. The rest comes down to our genes, behaviors, social factors, and the environment. While genetics entrepreneurs convince venture capitalists that their field is the new panacea, calmer voices question its value. So, the question becomes whether it’s possible to influence behaviors, social factors, and the environment to create health.”

On the other hand, Robert Wood Johnson Foundation estimates that only 20 percent of a person’s health is related to health care, and the rest stems from behavioral, environmental, and social factors. As highlighted by The Commonwealth Fund, asthma symptoms can be linked to where families live; frequent emergency-department visits and hospitalizations can be linked to homelessness; and diabetes-related hospital admissions and other health problems can be linked to food insecurity.

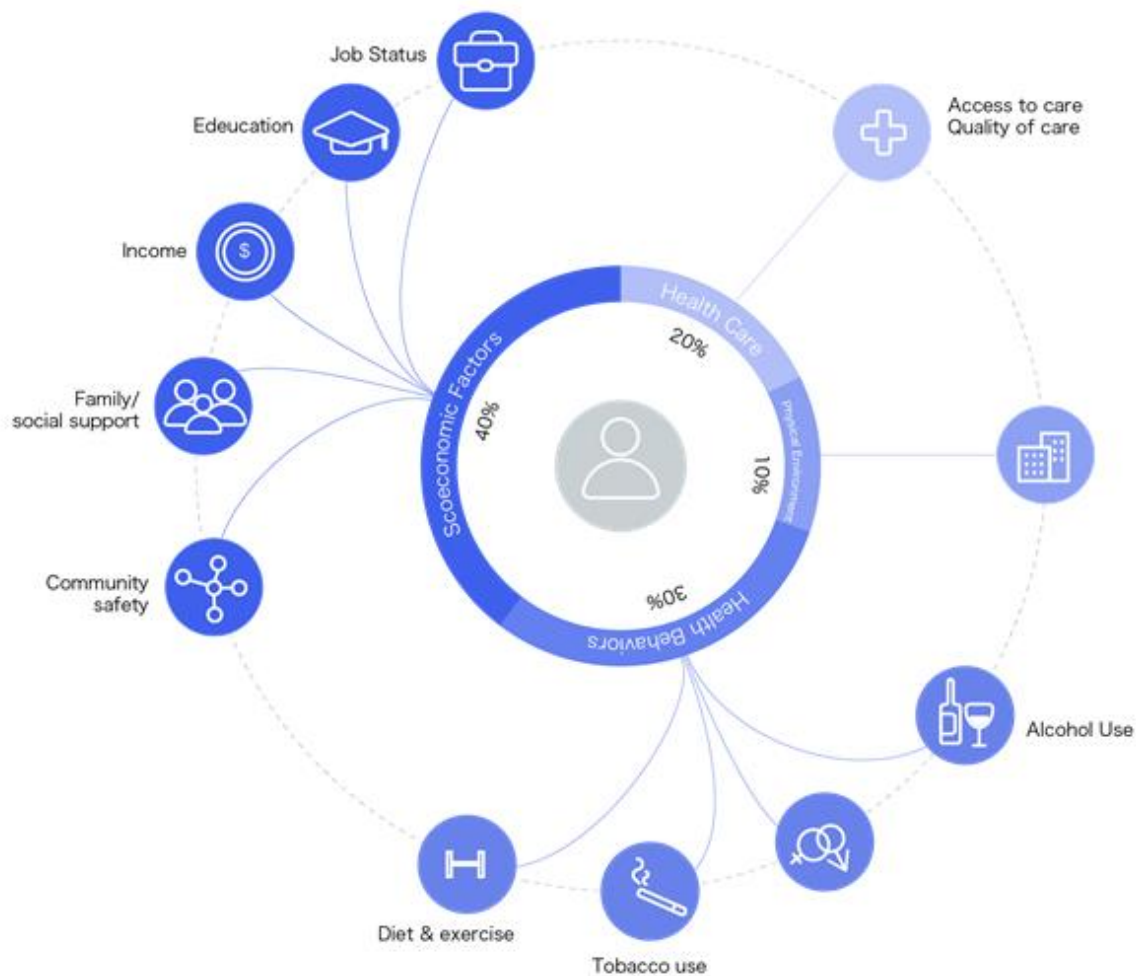


Fig 2: An illustration of the impact health care on a person’s health versus non-healthcare factors (modified based on the source: Institute for Clinical Systems Improvement. *Going Beyond Clinical Walls: Solving Complex Problems* (Oct., 2014)

2.2 Design Social Innovation for Public Health

As some health problems are caused by social problems and changed/eased by social development, should we deal with it through social innovation?

Aarhi et al (2016) found that Traditional public health research alone couldn't help them to deal with health problem when it seems more like a social challenge, so they decided to tackle adherence from a different vantage point—to follow the lead of those who are applying human-centered design to social challenges and who advocate for a customer-centered approach to global health.

From their project dealing with HIV in Tanzania, it is learned that patients go to great lengths to hide their need for treatment from others due to the stigma of HIV/AIDS. They also found that the patients usually have strong aspirations for the near future, such as returning to farm work or getting married, and these goals, which can motivate health behaviors, rarely come up in conversations with care providers (Aarhi Rao & Sandra McCoy, 2016).

3. Co-Design Service for Health:

3.1 Health is Co-Created

Health has been recognized as a co-created outcome in service literature (McColl-Kennedy et al. 2009). Different types of service can support an individual in co-creating better health. Co-creation implies meaningful engagements of interaction, activities and exchange between collaborators (Reijonsaari, 2013) including patients, doctors and patient family members.

Furthermore, health often requires the integration of resources beyond an individual's own, which include highly specialized medical knowledge, medication, surgical operations or health behavior change support. Because of this, co-creating involving different stakeholders is needed for healthcare service design.

Health largely depends on the social background. "Health is not only an individual and personal choice. It is the choice of sustainable and resilient societies" (Erik Rasmussen, *Sustainia Guide to Co-Creating Health*, P4). The responsibility for health doesn't rely on a certain sector, a stakeholder group, or with the individual person, health now tends to be viewed as a cross-sector responsibility.

Customers, or rather service receivers, is indispensable participates in health service co-creation. Bitner et al. (1997) examined customer participation and identified three categories: low (customer presence is required), moderate (customer inputs are required for service creation), and high (customer co-creates the service outcome). Karita(2013) expanded the categories to four in healthcare service and point out that participation in lifestyle intervention is the deep design intervention approach (see in Fig. 3).

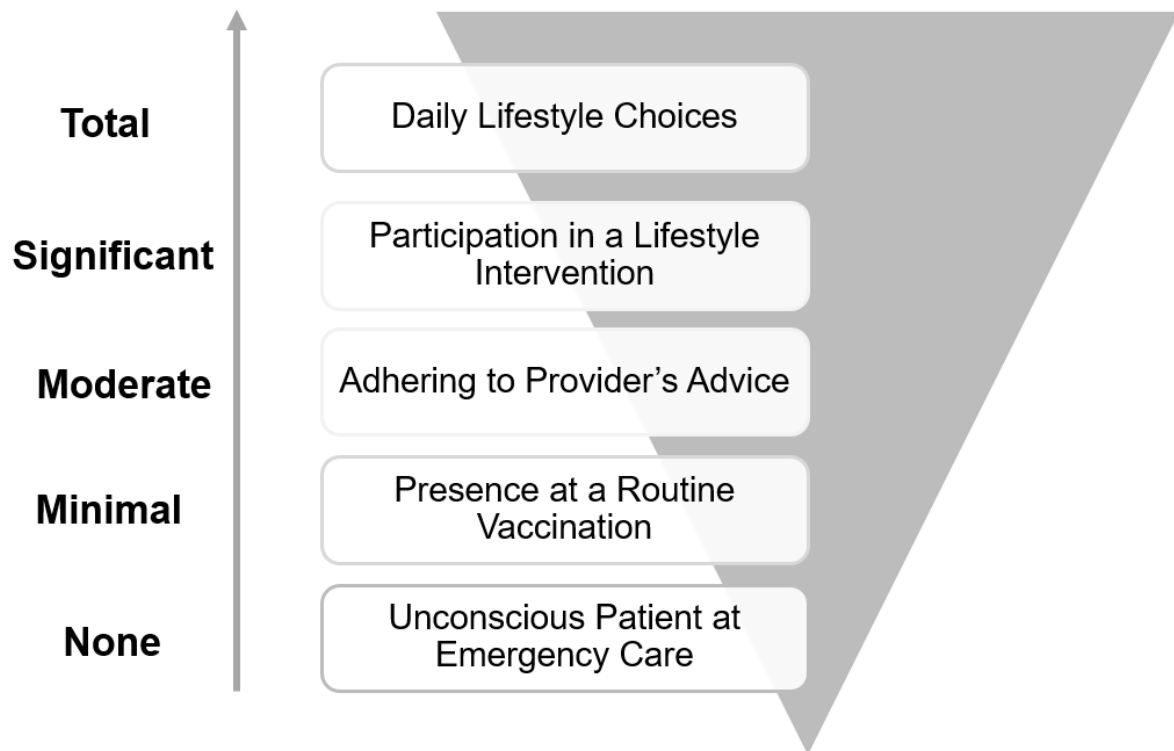


Fig.3 Customer levels of co-creation in health within a service relationship modified based on Karita(2013)

When customers engage in moderate co-creation, they become operant resources with inputs to co-creation of their own health. Lifestyle interventions including public behavior change require significant inputs from a customer.

3.2 Health Co-Creation Method

HCD(Human Centered Design) approach is widely used in service design. Recently, designers tend to follow some new method to co-design healthcare service, like EBD(Experience Based Design) and EBCD(Experience Based Co-Design).

EBD is structured as a four-phase process of patients and healthcare staffs capturing and then understanding their lived experiences of healthcare services, working together to improve the service based on this understanding, and then measuring the effects of changes (Bate and Robert 2007). EBD is a user-focused design process with the goal of making user experience accessible to the designers, to allow them to conceive of designing experiences rather than designing services. By identifying the key moments and places where people come into contact with the service and where their subjective experience is shaped, and therefore where the desired emotional and sensory connection needs to be established—and working with the front-line people who bring alive those various touch points in the journey—it is possible to design experiences (Bate, P. and Robert, G. 2006).

EBCD is an approach to improving healthcare services that combines participatory and user experience design tools and processes to bring about quality improvements in healthcare organizations. Through a 'co-design' process the approach entails staff, patients and carers reflecting on their experiences of a service, working together to identify improvement priorities, devising and

implementing changes, and then jointly reflecting on their achievements (Donetto, S. et al, 2014). EBCD is divided into six stages:(1) setting up the project; (2) gathering staff experiences through observational fieldwork and in-depth interviews; (3) gathering patient and carer experiences through observation and 12-15 filmed narrative-based interviews; (4) bringing staff, patients and carers together in a first co-design event to share - prompted by an edited 20-30 minute 'trigger' film of patient narratives - their experiences of a service and identify priorities for change; (5) sustained co-design work in small groups formed around those priorities (typically 4-6); (6) a celebration and review event (Bate and Robert, 2007)

4. Health Empowered Society in China

The Chinese medical resource is very limited, in the 2030 Health China Plan, Chinese Government plans to build up a health-empowered society by integrating social resources to develop innovative healthcare services. This paper will introduce how square dancing (a type of popular Chinese fitness activities) service system be co-created based on Human-Centered Design(HCD). In the end, we will examine the effectiveness of healthcare service co-creation based on value co-creation theory, especially the value co-creation in social innovation.

4.1 Top-down Healthcare System

The provision of healthcare services is mainly based on government-managed public hospitals in current China. Nowadays, 90 per cent of the hospitals are public hospitals, which are under the China Ministry of Health, provincial health bureau or municipal health bureau.

For the government-managed healthcare system, subnational governments in China are organized in a four-level hierarchy: the central government, provincial governments, city-level governments, county-level governments, and township-level governments. Each level of government is supervised and evaluated by its next highest level. The government with better performance receives more support from the higher-level governments, and its officials have better chances at promotion. Thus, local governments increase the overall supply of public goods to catch up to the public service level in neighboring areas.

The hospital at province level usually have the right to evaluate the ranking and title of the lower-level hospital and have more medical care resources including hardware and skilled doctors.

4.2 Decentralized Social Resources for Healthcare

According to the definition of health and healthcare, both medical resources and social resources could be used for healthcare, while in China, social resources are not be fully used, moreover, medical resources and social resources are not well integrated for healthcare service.

One of the reason is the decentralized social resources. The big internet corporates in China (well known as Baidu, Ali and Tencent) have a large group of mobile service users but do not have medical resources, while hospital do not have big data of patients and market.

According to the 13th 5-year-plan, Nongovernmental Capital could participate the healthcare service, which means companies—especially internet corporates—could be able to integrate both social and medical resource to improve healthcare and develop new healthcare service.

5. Co-Design Service for Health

In China, some designers hope to integrate social resources to promote health-empowered society. They design innovative service with local stakeholders to meet the local health requirement. Through two cases, we will introduce how designers and new design approach works in China.

5.1 Case 01: Clouds in Your Eyes

This service design project was developed by CBI China Bridge and Vision in Practice, which is to create a new service for helping local residents in Tancheng village, particularly elderly people, to understand cataracts. The main aim of the project was not only to offer screening and surgery to patients, but also to create sustainable co-design communities for eyes care.

METHODOLOGY: CBI China Bridge team applied stakeholders value-centered innovation method and experience-based co-design method in this project. The stakeholders value-centered innovation method is to achieve the concept of the win-win value by integrating and stimulating the innovative strength from multiple parties (users, consultants, clients), and setting up an effective co-innovation community. The design team used this method in three main phases: discovery, define, and develop. In the discovery phase the team conducted ethnographic research and empathy approach to find the main problem, such as interviews with the different stakeholders, participatory action research observations, etc. In the define phase, the team facilitated three workshops with key stakeholders (hospital staffs, local elder residents and designer) to synthesize the journey and define the problem (see Fig 4). In the develop phase, they started to develop some solutions co-working with residents and hospital staffs in that can be shown to the users and make them trust the service system. The experience-based co-design method enables the staffs and patients to co-work together in a partnership. Thus, the cured patients could become the volunteer in new service to pass their experiences to the others to understand the disease.

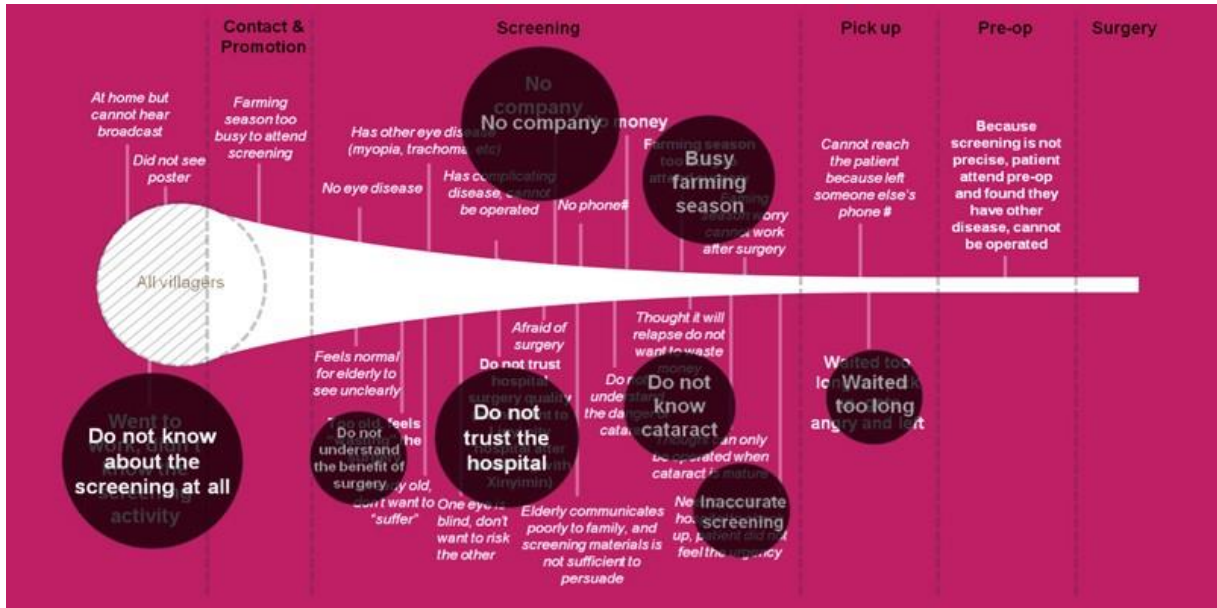


Fig 4. Problem defining phase of Value-centered Design made by CBi China Bridge

SERVICE OUTCOMES: The design outcome was the sustainable social healthcare community strategy that is fitting to the local context. It is based on serious of co-design work with local stakeholders. At the beginning, it provided a set of activities which tend to make the elderly residents understand the cataract itself and how it can be treated. Then, the holistic system was created to help the numerous grass-roots, private hospitals in towns or counties gain capabilities to treat cataract patients by surgery, so that they can provide safe and secure cataract surgery to the patients who are living in countryside, no matter whether they can afford it or not. It is supposed to be a win-win solution for both cataract patients and the hospitals. For patients, they can easily have a screening and surgery nearby, meanwhile, they could be engaged into the service and co-create with professionals as a partnership. For the healthcare organizations, from the co-creation workshop, they proposed new service concepts and strategies to enhance the treatment process, in which way, an affordable care is provided to all.

SOCIAL IMPACT: It is a top-down health service helped the hospital build empathy with their patients to effectively and thoroughly understand their patients' need. From this case, the cataract surgery rate has increased from 35% to 63% within six months.

5.2 Case 02: Fun for All Ages

The service project was focused on the social healthy activities, square dance exercise, for middle aged and elderly residents. It is a top-down community activities management, also the grassroots movement for health. The main aim of the service design is with concerns to the health of elderly citizen and set up a community-friendly health activity. This project is to create a service integrated with elder citizen's daily lift, rather than build a public healthcare system for their health.

METHODOLOGY: The design team used user-centered research methods (i.e. questionnaire, interviews and observation) and co-design methods (i.e. workshops, prototyping). The team aimed to understand the problem and the experience from the perspectives of community residents, as well as community staff and other stakeholders. Therefore, they used questionnaire to define the main

problem in square dance and to visualize all the data. During the problem-solving phase, the design team asked the key stakeholders to organize all the information that is from the questionnaire and to brainstorm ideas for the community activities by workshop. In the deliver phase, the team also prepared some rough prototypes of service to encourage stakeholders to participate in the project. This was an efficient way to prototype ideas out and gain the user's feedback immediately.



Fig.5 Co-design with dancers with visual tools

SERVICE OUTCOMES: the project outcome was “Fun for All Ages” service model, which is based on square dance activity. However, Fun for All Ages made an exploration of touchpoints in the preparation phase and end phase of the activity. In the prepare phase, design team designed many different tags (different songs, different types of dance and the different site) to organize the interests group through people who choose these tags in the workshop. It was easy for community staffs to organize them (see in Fig. 5). During the activity, the people from official square dance organization could give grades to the square dance group. At the end of this activity, participants can give some feedback to the community about the facilities and service.

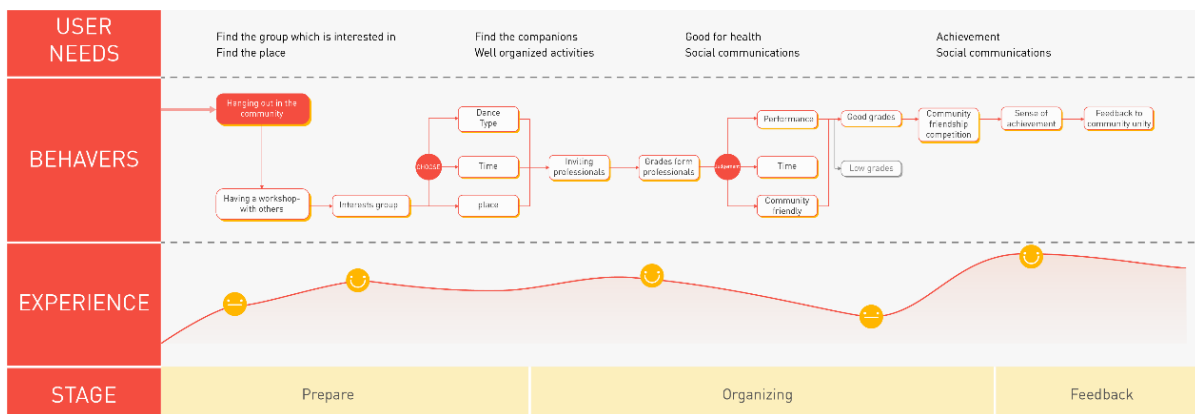


Fig.6 Design service with EBD (Experience Based Design)

SOCIAL IMPACT: It has three main impacts to individual, community and society. Firstly, it increased the immersion and imagination for participants through allowing the elderly residents participating to the managing and coordinating activities related to organizations; Secondly, it solved the community noise impact on residents, through the reasonable community adjustment. Thirdly, the friendly competition is able to encourage the elderly residents to participate in the community health activities.

5. Analysis and Conclusion

5.1 The Designers' Role in Health Co-Creation

In China, some designers understand that healthcare service need to change from a one-size-fits-all solution to a culture of establishing new relationships with other stakeholders in turn to empower and engage them. With this perspective, designers are responsible to design platforms or make scenes that show the connections between actors in order to enable people to create their own route to change. Thus, design for public health co-creation is related to building the capability and the systems that allow public behavior change to occur. Designers tend to co-design a service platform made up of service vision, stakeholders roles and rules for actors.

5.2 Co-Design Method for Public Healthcare Service

As public healthcare services need to be co-produced, the traditional HCD (Human-Centered Design) approach which focus on patients is not enough. Design practice tend to be centered on the local communities of co-creation, understanding the problem from the different perspectives of actors involved and uncovering eventual fundamental assumptions (Junginger, 2008) that shape their practices. Service design seems to be an approach, but without addressing deeper assumptions or social norms that would shape their adoption, service design is destined to failure (Freire, K., & Sangiorgi, D., 2010).

Researchers have indicated some issues that need to be addressed including self-efficacy and self-confidence (Lau-Walker & Thompson, 2009), increasing knowledge, skills and competencies to assist within healthcare service management (The Health Foundation 2011). So a mixed design method is needed for complex context of health service. For both EBD and EBCD, designers need to design practitioners to share their thoughts on what needs to be borne in mind when using design expertise in the healthcare sector and the nature of the critical thinking needed to increase the impact of co-design approaches.

5.3 Design Service for Health-Empowered Society with Health-Centered Mindset

Although service design thinking process are various, the co-design process usually start with establishing a common mindset. In our research, this mindset is more related to identifying the value of health and relationship between health and other values in lifestyle.

Health is not just the absence of illness. It depends on holistic well-being and good quality of life being built into daily life. In China, new solution is needed to integrate social resources for addressing health issues, such as sedentary lifestyles and unhealthy diets, which have been brought on by modernity. As design can be a tool for empowering people and enabling them to make things

happen (Selloni, 2017), opportunities could be found through well designed tools, activities and methods.

According to the Health China 2030 plan, all the social members will be encouraged to contribute to public health as they are expert in their working area. For designers, they need to build vision of health-empowered society through a set of service in communities, governments, industries, schools, and workplaces where can function together to create sustainable healthcare service systems that truly support and encourage healthy choices.

References

- Aarhi Rao & Sandra McCoy. (2016), *Fostering Behavior Change for Better Health*, Stanford Social Innovation Review
- Bate, P., & Robert, G. (2006). Experience-based design: from redesigning the system around the patient to co-designing services with the patient. *Quality and Safety in Health Care*, 15(5), 307-310.
- Bate, P., and G. Robert. 2007. *Bringing User Experience to Healthcare Improvement: The Concepts, Methods and Practices of Experience-Based Design*. Oxford: Radcliffe.
- Dahlgren, G., & Whitehead, M. (1991). *Policies and strategies to promote social equity in health*. Stockholm: Institute for future studies.
- Donetto, S., Tsianakas, V., & Robert, G. (2014). *Using Experience-based Co-design (EBCD) to improve the quality of healthcare: mapping where we are now and establishing future directions*. London: King's College London.
- Freire, K., & Sangiorgi, D. (2010, December). *Service design and healthcare innovation: From consumption to coproduction and co-creation*. In 2nd Nordic Conference on Service Design and Service Innovation, Linköping, Sweden. Retrieved July (Vol. 5, p. 2011).
- Junginger, S. 2008. *Product development as a vehicle for organizational change, design issues*, 24(1), winter: 26-35.
- Lau-Walker, M., and D. Thompson. 2009. "Self-Management in Long-Term Health Conditions – A Complex Concept Poorly Understood and Applied?" *Patient Education and Counseling* 75 (2): 290–292.
- McColl-Kennedy, J. R., Vargo, S. L., Dagger, T., & Sweeney, J. C. (2009, June). *Customers as resource integrators: Styles of customer co-creation*. In *Naples Forum on Services* (Vol. 24, No. 1, pp. 1-24).
- Pritpal S. Tamber. (2016), *The Future of Health Is Giving Communities a Voice*, Stanford Social Innovation Review
- Reijonsaari, K. (2013). *Co-Creating Health—Examining the Effects of Co-Creation in a Lifestyle Intervention targeting physical activity* (Doctoral dissertation, PhD Dissertation, Aalto University).
- Selloni, D. (forthcoming 2017). *CoDesign For Public-Interest Services*. Research for Development series. Springer International Publishing.
- The Health Foundation. 2011. *Helping People Help Themselves. A Review of the Evidence Considering Whether It is Worthwhile to Support Self-Management*. London.
- Taz Hussein & Mariah Collins. (2016), *The Community Cure for Health Care*, Stanford Social Innovation Review
- Wilkinson, R. G., & Marmot, M. G. (2003). *Social determinants of health: the solid facts*. World Health Organization.