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Master's Thesis
Academic Year 2022

Yonamoto Recipe Sharing: Enhancing Social
Engagement through Healthy Eating for Aging
Community



Keio University
Graduate School of Media Design
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A Master's Thesis
submitted to Keio University Graduate School of Media Design
in partial fulfillment of the requirements for the degree of
Master of Media Design

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Abstract of Master's Thesis of Academic Year 2022

Yonamoto Recipe Sharing: Enhancing Social Engagement through Healthy Eating for Aging Community

Category: Design

Summary

Yonamoto Recipe Sharing helps scaffold an interdependent environment by bridging regular and irregular visitors to the community center. Participants play either two roles as recipe providers or receivers, contributing to learning cultural values through new recipes and food preparation. The design scaffolds loose bonds through cultural experiences with various recipes and food preparation for a heterogeneous community where residents come from diverse backgrounds such as age, gender, and hometown. Yonamoto Recipe Sharing includes a recipe contest and a food demonstration intended to bridge and create opportunities for residents with similar interests in food or cooking to bond and interact. The two design parts provide initiatives for individuals to contribute, cooperate, and complete several community tasks together. Recipe sharing requires trust since they are a set of prescriptions that individuals inherit from one source or generation and transmit to others. The recreational event gradually scaffolds interdependent loose bonds that individuals with different capabilities engage in and achieve a similar goal of balancing physical exercise and healthy eating.

Keywords:

food, recipe, interdependent environment, heterogeneous, loose bonds, scaffold

Keio University Graduate School of Media Design

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Chapter 1

Introduction

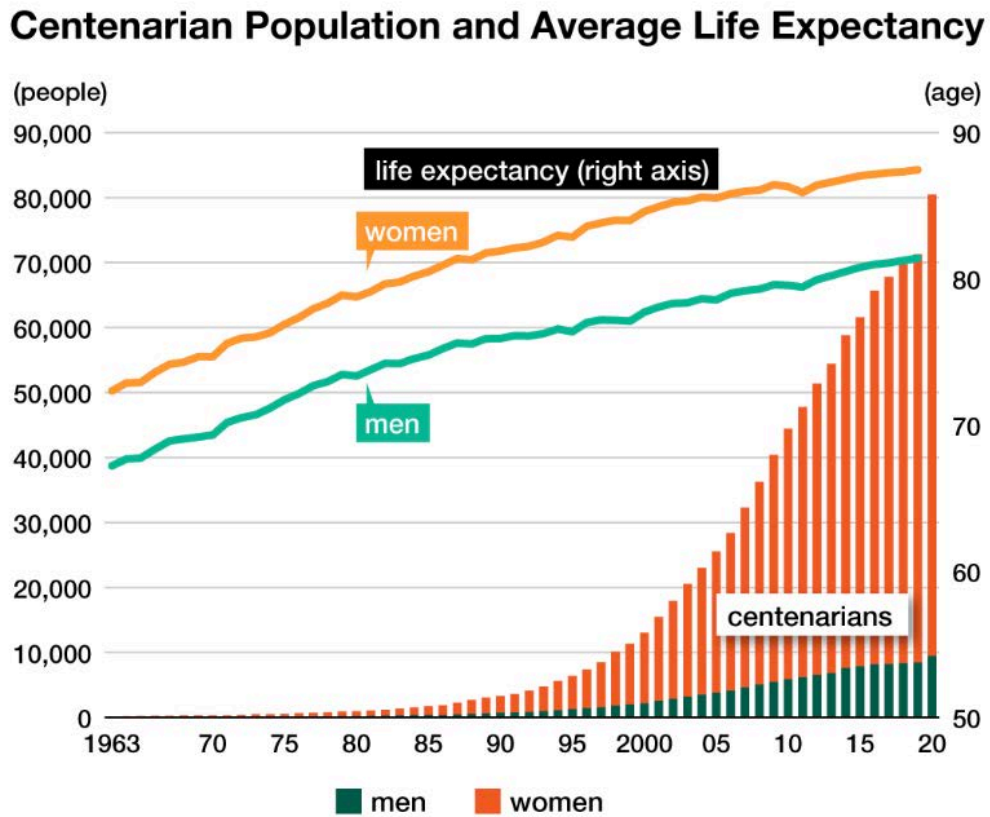
1.1. Background

Aging Fast

Japan is aging fast. It owns the first rank amongst other countries with the highest proportion of 65 and above older adults compared with the overall population. Its “super-aged” society comprises 28.2% of seniors according to the United Nations Population Division, World Population Prospects 2019¹. Besides Japan is home of 86,510 centenarians, it surpasses 80,000 bench for the first time over the past decades as shown on Figure 1 based on the data from the Ministry of Health, Labor, and Welfare in 2020. The graph in Figure 1.1 portrays that centenarian women accounted for about 88.4%, or 76,450 versus men which are 10,060. Lengthened life expectancy brings about social isolation and loneliness after entering the life of widowhood. Loss of one’s spouse is a major life turning point that accelerates a risk of mortality rate of those who stay behind. The “widowhood effect” in old age relates to adverse health impacts on mental and physical circumstances such as depression, sleeping-disorder and loss of appetite that later can lead to signs of chronic diseases [1].

Definition: Social isolation means “relative absence of social relationships”. It is an objective measure of a distance separation from one’s surrounding network or social integration such as family members, neighbors or colleagues [2]. Lack of social interaction is commonly associated with aging signs from a mild or intermediate level of cognitive decline up to fatality [3].

¹ “World Population Prospects - Population Division,” United Nations (United Nations), accessed July 3, 2022, <https://population.un.org/wpp/Download/Standard/Population/>.



(Source: "Japan's Centenarian Population Surpasses 80,000," nippon.com, October 4, 2020, <https://www.nippon.com/en/japan-data/h00822/>.)

Figure 1.1 Centenarian Population and Average Life Expectancy

Loneliness refers to the perception of disconnect from social ties [4]. A feeling of being alone sometimes along with distress from the discrepancies between ideal and perceived relationships [5]. Although the definition of loneliness often relates with a negative emotional state either from not having a companion or emotional support, it does not always yield negative feelings [6].

Social isolation and loneliness are some of various factors affecting aging in Japan due to an increasing number of solo dwelling households and also social distancing from an unexpected worldwide pandemic. Millions of living alone Japanese households consist of solo senior dwellers that will continue to surge to nearly a quarter of nuclear households by 2040 according to data from the Cabinet Office². Solitary elderly are often more prone to social isolation and loneliness that exert negative effects on both mental and physical well-being of vulnerable citizens [7]. Detrimental impacts of health deteriorations can further develop into chronic conditions such as dementia, high blood pressure, heart disease and diabetes [8].

1.1.1 Transformation of Japanese Household Structure

In this rapidly aging country, the transformation in Japanese household structure is one of reasons that emphasize social isolation and loneliness from the widowhood effect. From chapter one recollection, the Japanese household structure has gradually shifted from an extended family to a nuclear family. The researcher states that Japan has experienced changes because of various stimuli which are economic growth, social evolution and urbanization leaving impacts on its socioeconomic environments. Within these three elements, wealth can be a major socioeconomic factor that contributes to sociocultural revolution from relative collectivism to greater individualism [9]. Population affluences means financial independence in life that promotes individualism.

Definition of Collectivism and Individualism: Before addressing more about collectivism and individualism, it is crucial to identify both definitions. On one hand, the researcher presents collectivism as “a social pattern consisting of closely

2 “人口動態統計速報 (令和 3 年 (2021)12 月分),” ホーム | 厚生労働省, February 25, 2022, <https://www.mhlw.go.jp/toukei/saikin/hw/jinkou/geppo/s2021/12.html>.

linked individuals who see themselves as parts of one or more collectives; are primarily motivated by the norms of, and duties imposed by, those collectives; are willing to give priority to the goals of these collectives over their personal goals; and emphasize their connectedness to members of these collectives” [10]. On the other hand, Triandis portrays the definition of individualism as another “social pattern that consists of loosely linked individuals who view themselves as independent of collectives; are primarily motivated by their own preferences, needs, rights, and the contracts they have established with others; give priority to their personal goals over the goals of others.” From these two denotations, the author signifies that both parties have different orientations in prioritizing attitudinal values between mutual counterparts and individual achievements.

1.1.2 Economic Growth

The story of Japan’s fast-growing economic growth after the post-world war two comes from hardworking and persevering citizens who devote themselves to work and thrive for a better life after privatization from the war. The perception of dedicating life for working continues for a period of time as displayed on Figure 2 about Japan’s income per capita GDP that constantly and significantly increased after the war from 1945 - 2015. Since then the majority of individuals prioritize working over other pursuits such as marriage or childbearing, thus the trend of drifting into singlehood still remains these days [11]. Furthermore, work-life imbalance also causes divorcing and becoming a contented single parent. Referring to birth rate, the number of Japan’s newborns in 2021 plunged to its lowest of past decreasing fertility rate records. The figure is 842,897 in 2021 that reduces 29,786 or 3.4%³ from the previous year according to a released data from the Ministry of Health, Labor, and Welfare. The declining percentage annually proves that Japanese people are in favor of individualism.

3 “第 1 章 高齢化の状況 (第 1 節 3),” 3 家族と世帯 | 平成 30 年版高齢社会白書 (全体版) - 内閣府, accessed July 21, 2022, <https://www8.cao.go.jp/kourei/whitepaper/w-2018/html/zenbun/s113.html>.

1.1.3 Social Evolution

Besides economic progress that gradually turns Japanese household structure into singlehood dwellings, the second influence that reiterates individualism is social evolution. From the post-industrial society, a researcher underlines that educational attainment as a principal factor that can trigger individuals' attitudinal orientation changes toward the Japanese social system [12]. The study reveals that as Japan adheres to patriarchal practices since around 1896 from the Meiji era through Confucian ideology that its male dominance persists nowadays [13]. Nonetheless, the industrial revolution has incrementally brought about beginning steps that have an influence on a change in societal value orientation. The educational expansion allows more career opportunities for females that help initiate fulfillment of gender gaps. Literacy competence has broadened an access of scope of occupation fields that have traditionally been male domains such as engineer and architect. The scholars propose an inverse correlation between women fertility behavior and education that more intellectual women these days have shifted their focal points towards their personal achievements rather than marriage or duties and burdens of childrearing [14]. Education has empowered women to become more self-reliant through education that revolves around social parity.

1.1.4 Urban Sprawl

Urbanization is the third stimulation that fosters individualism over collectivism. Urban districts supplemented with numerous conveniences attract younger inhabitants to relocate to metropolitan areas and leave behind older generations in countryside regions. The statistical evidence from the Statista highlights that the rate of people who live in urban areas remarkably leveled off at around 91.78%⁴. The ratio implies that less than 10% of Japanese citizens of 126 million do reside in suburban settings⁵. Within this percentage, it also includes the post-war baby boom members who are currently in their 65-and-over age group suffering from

4 Aaron O' Neill, "Japan: Degree of Urbanization from 2010 to 2020," Statista, January 19, 2022, <https://www.statista.com/statistics/270086/urbanization-in-japan/>.

5 Aaron O'Neill, "Japan: Total Population from 2017 to 2027," Statista, May 18, 2022, <https://www.statista.com/statistics/263746/total-population-in-japan/>.

closure and elimination of multiple public facilities such as city halls, schools, hospitals, bus stops and hospitals and more due to depopulation [15]. Considering these inadequate infrastructures, Yui also further describes that aging in suburban communities can cause severe social challenges. For example, a lack of security during natural disasters occurs for aging-in-place seniors because they do not have access to evacuating information or have difficulties commuting to emergency shelters. Moreover, an increase in housing vacancies also means a reduction or loss in social interaction amongst residents. Drawbacks from these inaccessible amenities can accentuate social isolation and loneliness in an aging population.

1.2. Design Proposal

Yonamoto Housing Complex in Yachiyo city at Chiba Prefecture is a research setting with the rapid aging case in Japan that has long been confronted with. An increasing number of infrastructure is shutting down each year, such as school, post office, commuting route, and bank that facilitate residents in those old days. Considering the complex is an aging community, the remaining senior residents face inconvenience from these closures. Therefore, interdependent living is a key to aging in place with a social environment where individuals support one another, minimizing chances of social isolation. The study aims to scaffold loose connections between Yonamoto dwellers through conversation and community engagement.

Yonamoto Recipe Sharing offers a continuous series of activities to enhance loose connections through healthy eating using a recipe sharing board as a ticket-to-talk and a food demonstration to alleviate word-of-mouth (WOM). The idea of sharing recipes emerges from Wakka NPO, which grants Yonadan Happy Point to those who donate recipes to the community. The community has a weekly market operated by Wakka NPO, and it often has leftovers when the locals encounter unfamiliar vegetables. NPO solves this pain point by giving the community points that can later be exchanged for emergency goods after collecting a certain amount. However, there was no sharing format for participants to share their recipes. From this pain point, rounds of visits to communicate with involved actors who are nutritionist community volunteers occur to discuss the further potential for the

design to revitalize this recipe sharing and spread an essence of healthy eating as a life goal for Yonamoto residents. After rounds of ideation to solve the discovered breakdown of a lacking sharing format, the proposal offers recipe-sharing templates that participants can use by writing down for the recipe contest, which is the first part of the design. Another continuous part is the food demonstration of the recipe winners and nutritional balance talk from nutritionists from Wakka NPO and Yakuju Corporation.

To reiterate, the value proposition of the design aims to trigger the importance of healthy eating by applying it to daily activities such as cooking or grocery shopping. Both physical exercise routinely and adequate nutritional balanced diets are a must-pair. With inadequate nutritional balance eating habits, physical exercise means nothing. The later part of the research will elaborate on and explain how the design develops from the recipe contest on recipe sharing templates to food demonstration with interactive nutritional talk to trigger memories and healthy eating through daily life for seniors. The continuous series of activities help scaffold loose connections between Yonamoto residents contributing to its interdependent environment as a representative of healthy eating for other aging communities.

Chapter 2

Related Works

2.1. Aging with Eudaimonic Mode of Well-being

2.1.1 Eudaimonic Well-being

Aging is an inexorable process that relates to human resilience to lengthen their capacities to sustain well-being and minimize health in confrontations [16]. Anderson and Fowers explain the Aristotelian concept of eudaimonia as a complete life in which ones fulfill their potential as a human being [17]. The ideal way of living that includes pursuits of human goods that are knowledge, friendship, and social harmony [18]. A life that fills with pleasure alone is a very yearning target for one and all. In contrast, the Aristotelian perspective implies that a lack of capacity for life reasons does not entail eudaimonia [19]. The cause is that humankind's nature needs life rationale for deep social connections as humans are societal species by nature. Both former and recent researchers define eudaimonic well-being as a discipline through pursuing a life goal yielding positive emotions [20], [21]. The concept of achieving a life goal brings about satisfaction by incorporating interest, engagement, confidence, and affection helps activate life to operate effectively. Life satisfaction causes positive emotions by living with life purposes triggering daily life performance. Ryff categorizes core dimensions of psychological Eudaimonic well-being into six categories in Figure 2.1¹. They are purpose in life, environmental mastery, positive relationships, autonomy, personal growth, and self-acceptance [22]. Highlighting the purpose in life as a classification

¹ Carol D Ryff, "Eudaimonic Well-Being, Inequality, and Health: Recent Findings and Future Directions," *International review of economics* (U.S. National Library of Medicine, June 2017), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5645055/figure/F1/>.

in Eudaimonic domains, it optimizes human resilience to decelerate the progress of senior delicacy.

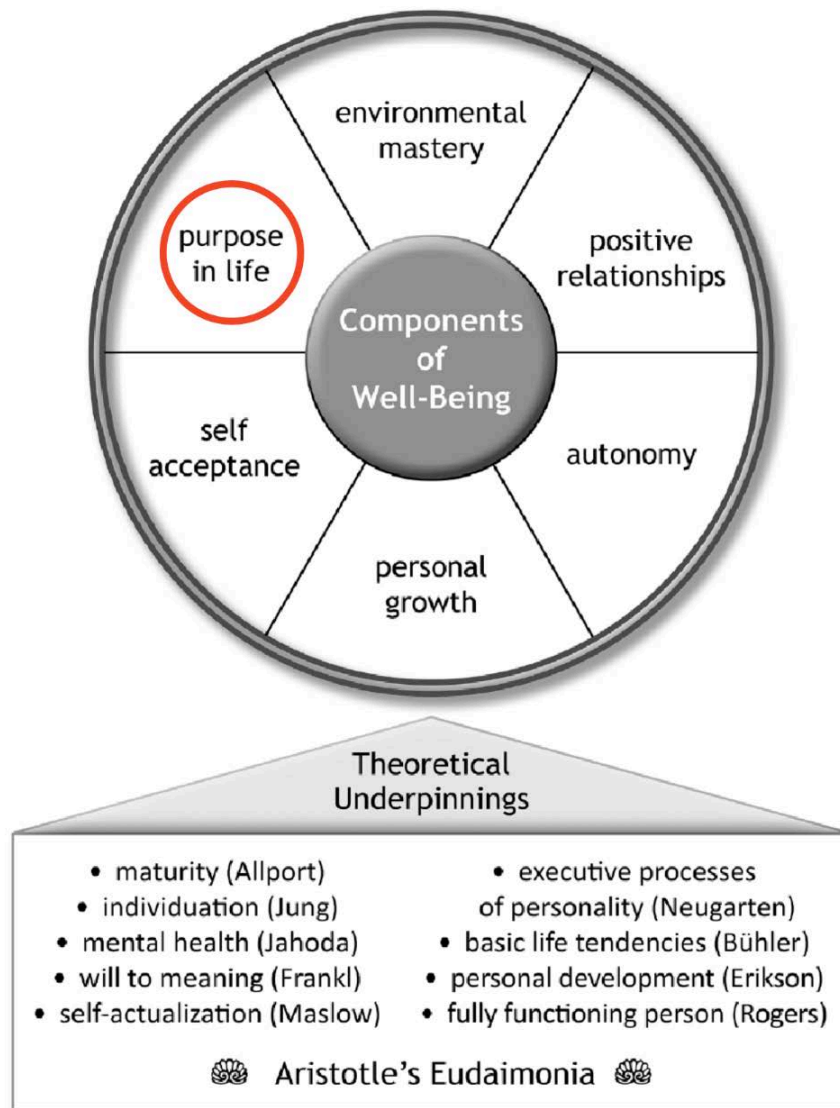
2.1.2 Ideology of Ikigai

Ikigai illustrates a sense of a life worth living that is culturally associated with the Japanese well-being concept. Despite being a developed country serving with superiority, the record from UNICEF released in 2020 states that Japanese adolescents have a lower level of mental well-being comparing others from developed countries with similar economic levels [23]². From this data, Japan ranks 37th position amongst 38 countries. Evidence of this life dissatisfaction explicates by exceptional suicide rate that Japan is the second runner up among G7 countries in 2019 regarding the testimony of the age-standardized suicide rates from WHO³. Oishi further explores the issue that cultural background influences measured levels of well-being [24].

In Japan, the cultural secret of living a longer, more contented, and fulfilled life for Japanese people is Ikigai. Individuals owe a sense of “life worth living” as it helps indicate satisfaction with life, representing a degree of well-being driven by consciousness and life motivations [25] From the study, the authors propose that the elderly who embrace Ikigai in their lives are less prone to the risk of health functional disability than those who do not. Myriad studies explain that those with a strong sense of purpose or reason to strive for a living tend to possess psychological resilience in coping with emotional crises. Thus, realizing the value of being alive results in a longer life span and a lower risk of mortality [26], [27], [28].

2 “Innocenti Report Card 16 Worlds of Influence - UNICEF-Irc.org,” Unicef (UNICEF Innocenti, September 3, 2020), <https://www.unicef-irc.org/publications/pdf/Report-Card-16-Worlds-of-Influence-child-wellbeing.pdf>.

3 “Suicide Rate Estimates, Age-Standardized Estimates by WHO Region,” World Health Organization (World Health Organization, February 9, 2021), <https://apps.who.int/gho/data/view.main.MHSUICIDEASDRREGv?lang=en>.



(Source: Ryff D Carol, “Eudaimonic Well-Being, Inequality, and Health: Recent Findings and Future Directions,” International review of economics (U.S. National Library of Medicine, March 30, 2017), <https://pubmed.ncbi.nlm.nih.gov/29057014/gid=article-figurespid=figure-1-uid-0>.)

Figure 2.1 Core Dimensions of Psychological Eudaimonic Well-being

2.1.3 Aging in Place

Considering the social isolation and loneliness that leave negative impacts on mental health of living alone seniors from the previous chapter, numerous old people are encountering these issues and aging in place. Health decline with age is inevitable. Although physical anatomy naturally experiences a degree of deterioration as individuals age, it does not always lead to absolute impairments [29]. Rather than just feeble conditions that contribute to mobility challenges such as muscle weakness, joint problems, and balance dysfunction, these obstacles limit older adults to stay inertia. Hence, physical and social environments are crucial favors that assist aging citizens in combating aging adversities. Environmental mastery with the ability to choose or arrange to create surrounding suits is a part of core components that align with Eudaimonic Well-being. When discussing the topic of silver generation, the term aging in place (AIP) often appears. The term varies in a plethora of ways over time. In the late twentieth century, Beidler and Bourbonniere describe AIP as “the desire of older people to remain at home” [30]. In the early twenty-first century, Bigby emphasizes AIP as an ability for the elderly to keep living in familiar surroundings with loved ones and avoid institutionalization [31]. Both explanations entwine with home as the past AIP contexts relate to seniors’ desire to persist in their familiar surroundings and acquainted people.

Nevertheless, these definitions do not comprise vulnerable members to retain their independence in daily activities such as preparing food, laundry, grocery shopping, and more. Since aging causes detrimental health, Roger also asserts that these difficulties can obstruct the elderly’s capability to survive in their habituated living environments [32]. Thus, surrounding supports compatible with health deteriorations can help ease aging well-being. Furthermore, WHO also clarifies that physical and social environments are influential factors in the AIP concept in recent years [33], [34].

2.1.4 Aging Friendly Environment

Environment plays a vital role in shaping individuals’ physical and mental capacity across life courses. Older adults also need to adapt to age-related adversity that

they may experience at different stages of life in later years. Therefore, an aging-friendly environment design that fosters health, participation, and well-being is an efficient approach for responding to worldwide aging demographics [35]. WHO has recognized and reiterated the need to increase responsiveness to senior groups with age-friendly environmental support through two channels which are built and interpersonal environments from 2002 until recent years [36].

Related Work

Two related works provide different examples of aging-friendly environments in two aspects. The first is the built environment through architectural design that facilitates the aging population. The second is an interpersonal environment that grants opportunities to expand social network circles.

The built environmental construct refers to housing and neighborhood satisfaction with physical housing conditions such as accessibility and room layout, safety measures, services, and amenities in a community. Another example of related built environment work is the Yokodai Apartment Complex⁴ in Yokohama City, Kanagawa Prefecture, Japan. It is a part of an apartment renovation project in various abandoned communities called the Future of Housing Project with a collaboration between Urban Renaissance Agency (UR Agency) and numerous architects with a mission to improve and facilitate the housing environment for the public and tackle the aging population issue⁵. The redevelopment of the Yokodai apartment complex has more accessible and functional features, namely, lighting fixtures, handrails, elevated slopes, a supermarket, library, gardens, and more. Installed elements make the daily life of older people or members with disabilities revitalized and less troublesome. On the contrary, the Public Relations Office reveals that such remodeling of the complex consumes about fifty years to complete as the project involves many stakeholders and requires a lot of cooperation and communication amongst partners. Thus, another optional direction is an in-

4 Hiroshi Sakurai, “Highlighting Japan,” The Danchi Renaissance, November 2017, <https://www.gov-online.go.jp/eng/publicity/book/hlj/html/201711/20171106en.html>.

5 “団地 100,” U R 都市機構 (Urban Renaissance Agency, March 2007), https://www.ur-net.go.jp/rd_portal/pnf/danchi100/index.html.

terpersonal environment as a social connectedness for tenants to stay active in aging-friendly surroundings.

The interpersonal environment is significant support that helps scaffold social connectedness. Researchers describe interpersonal circles as a key that has either positive or negative influences affecting the aging quality of living [37]. Scholars further explain age-friendly frameworks, for instance, encouraging civic engagement and creating volunteering opportunities as social involvement and contribution skeletons for developing community networks [38]. An example that boosts the socially integrated environment is the Community Collaboration Residence System⁶ by UR's Chubu branch in Kasugai City, Aichi Prefecture, with nearby Chubu University. The student housing program offers affordable rental expenses for university novices from the Department of Humanities in exchange for aging community volunteering engagement. Examples are cleaning up community areas, participating with residents in local crime prevention patrols, and conducting a disaster prevention planning workshop. From the student voices, there is an intergenerational learning exchange between cross generations. Through community activities, students gain a sense of responsibility and attachment to the living environment as community representatives with a better understanding of elderly dwellers through vigilant attention. On the one hand, co-living in an intergenerational community benefits both parties by fulfilling the social capital of all generations [39]. On the other hand, there is a limitation as the young may feel obliged to assign tasks, leading to hesitance to enjoy volunteering completely.

All in all, built and interpersonal environments are scaffolds that reinforce social connectedness structures. Both contribute to parts of Eudaimonic domains because they are similar in collaborative nature that ensures longevity and continuous growth of an aging-friendly community [40]. Although there are challenges in incorporating miscellaneous people from different backgrounds or arranging resources such as time and spaces, overall social capital exceeds flaws.

6 倉畑桐子, “大学生がシニアと団地で暮らす理由とは。世代間交流深める高蔵寺ニュータウンの今,” スーモジャーナル - 住まい・暮らしのニュース・コラムサイト (SUUMO ジャーナル, July 1, 2019), <https://suumo.jp/journal/2019/07/04/165375/>.

2.1.5 Healthy Aging Through Lifelong Learning

The history of the aging concepts has evolved from 1948 until nowadays to the most contemporary theme called Healthy Aging. WHO has appointed this current approach to tackle aging for a fifteen-year plan starting from 2015 to 2030⁷. Healthy aging denotes accessible opportunities to maintain a healthy lifestyle for longevity through environmental aspects similar to previously mentioned contexts about aging in place and an aging-friendly environment. WHO still insists on concentrating on this environmental subject because it is influential on behavior, access to quality health, social care, and exposure to health risks such as lacking sanitation and safe surroundings [41].

Similarly, WHO optimizes quality of life through the Active Aging Framework decades ago to achieve a long life span through 3 main determinants with health participation and security (2002). From the former framework, WHO has improved processes of maintaining health conditions that enable well-being included in nowadays healthy aging approach to battle with an aging population as a developed continuation of the active aging strategy [42]. The scholars assert that WHO has amended the active aging framework by prioritizing the new aging perspective through living with the aging nature these days [43]. Aging brings health declines as individuals age. Hence, constantly learning to adapt and retain current health states is necessary.

Learning is an everlasting process through life's longevity. Lifelong learning is a method to keep up with health conditions by following one of the decade action areas under the United Nations Decade of Healthy Aging 2021-2030. The decade of healthy aging is a global collaboration between the United Nations (UN) and WHO to alleviate senior lives, their families, and the communities in which they live. A part of this collaboration scheme is stakeholder networks. An ability to gather and connect with various members across disciplines allows for leveraging resources and sharing learning and experience amongst involved actors [44].

Several studies in prior literature review have determined that numerous authors have a similar opinion about the social environment as a crucial factor in enhancing

7 “World Report on Ageing and Health,” World Health Organization (World Health Organization, September 2015), <https://www.who.int/publications/i/item/9789241565042>.

participation by expanding individuals' circles. Researchers convey that lifelong learning is an example of effective social surroundings that urge healthy aging through participation in diverse social, cultural, and civic activities. They help broaden participants' perspectives through interaction with people from different backgrounds that facilitate such activities [45]. The researchers further explain that diversity in lifelong learning opportunities is a catalyst that contributes to physical state and psychological well-being gains [46]. Exchanging resources of knowledge and skills to accommodate health deterioration from caregivers or a group of elderly to help support one another to confront aging barriers. Since learning is an everlasting process, the elderly with comprehension of the aging health decline nature can help maintain their wellness by accepting and adapting to physical health changes rather than focusing on illnesses [42].

2.1.6 Heterogeneity in Aging Community

A gerontology study depicts an active aging society as a community consisting of intergenerational members. Heterogenous gather with people from multi-backgrounds with different health-related quality of life (HRQoL) and life satisfaction [47]. Hsu asserts that there are multiple factors affecting HRQoL and life pleasure. For instance, age, personal values, awareness of age-related change, demographic characteristics, environmental arrangement, social support, community connectedness, social participation, and more. Besides Hus, numerous researchers also claim that these heterogeneities in aging parallel to active aging indicators [48], [49], [50]. Thus, various age-cohort characteristics in the aging community are in relation to healthy aging as they contribute to elderly health physically, mentally and socially.

Amongst those elements mentioned above, Park and Lee reiterate that the living environment is the most imminent and significant concern for the oldest adults ranging between 71 to 80 years old as to increases in functional limitations [51]. Nevertheless, neighborhood surroundings for younger seniors around 51 to 60 years old have less impact on life satisfaction because they are not as dependent as their counterparts. Writers further illuminate their environmental studies with aging experiences across different age cohorts that they are separating needs from the living environment depending on age group [52]. From their findings, life satis-

faction correlates with apartment size for young-old, while old-old dwellers weigh their pleasure more on the quality of their connectedness with the neighborhood environment. From studies, the scholars and their colleagues indicate that home and attachment with surroundings through social activities are two distinct terms associated with later-year adaptation among diverse age-cohort groups.

Maintaining healthy aging accompanied with satisfaction in life needs a responsible “neighbor”, active “neighboring”, and a supportive “neighborhood”. Keller clarifies concepts of a neighborhood into three categories [53]. Firstly, neighbor refers to the role of the resident deriving from the resulting interactions. Secondly, neighboring is an opportunity to socialize with other residents. Lastly, the scholar describes the neighborhood as physical and symbolic spaces where individuals feel belonged by scaffolding age-friendly characteristics to strengthen a healthy aging community with life satisfaction [54].

2.2. Media Design & Communication Strategies

2.2.1 Slow Technology

Several researchers who study digital inclusion in silver generations have investigated slow technology as a role of assistant to support healthy aging [55]. Hallnäs defines Slow technology as a design through a principle that accompanies ease of use and reflection on mental rest [56]. Rather than underlying technological development, the slow technology concept focuses on envelopment. The scholar elaborates that individuals often think of technology as a technique and method to solve difficulties in life. However, technology envelopment values experiences of technological utilization to enhance lives [57]. The author further expresses that enveloped technology encompasses different values from developed technology. From an enveloped slow technology perspective, its values underline the progress of developing technology. For instance, comprehension of mechanism works, appreciation of machine crafting qualities, and awareness of consequence usage in daily activities. Nonetheless, developed technology emphasizes efficient or functional aspects.

In the social distancing era, advanced technological devices have been woven

into a necessary part of everyday life and medical therapy. The world of Silicon Valley startups has constantly served humanity with ever portable gadgets such as tablets, smartphones, electronic wallets, and smartwatches. They help streamline intergenerational life for efficiency and productiveness by being equipped with high technology. Besides, during the pandemic of COVID-19, online social platforms have become necessary means of communication while keeping distance from one another for working, studying, or enjoying leisure time. Conversely, many recent studies portray technological acceptance in older adults still undergoing discussions.

On one hand, researchers about the utilization of information and communication technologies (ICT) uncover that ICT improves the elderly well-being and quality of life [58], [59], [60], [61]. Discovering these technological advantages, scholars have applied assistive technologies in seniors' care such as remote health monitoring, interactive coaching, video-monitoring, fall detectors, smart companions, and more as benefits that contribute to older people. Moreover, authors also depict digital gears that facilitate elderly caregivers or family members to early trace older adults' physical, mental, and psychosocial health surveillance that reveal chronic signs [62]. Modern technology in therapeutic fields makes individuals with access to high-tech apparatuses reliant on these supports to maintain health conditions.

On the other hand, it is counterintuitive and counterproductive when considering the limitations of lacking hardware devices, software applications, and training hours [63]. Researchers further explain that the absence of these elements restricts some seniors from having accessible high-tech tools to combat aging or alleviate preparedness for future pandemics. Therefore, these challenges in obtaining and learning ICT resources cause older adults to have low ICT acceptance and utilization. From the Internet World Stats in 2021, the percentage of individuals who still do not possess a wireless connection is 33.8% of the overall world population⁸. Since many people still live without a wireless connection, a portion of this percentage perceives it as unnecessary to expend time and money on ICT support [64]. Thus, a certain amount of individuals do not fully accept techno-

8 "World Internet Users Statistics and 2022 World Population Stats," Internet World Stats, March 31, 2021, <https://www.internetworldstats.com/stats.htm>.

logical usage. Scholars then borrow the approach of slow tech adopters to gain the ability to reflect and contemplate remodeling media that contribute more to aging lifestyles from diverse contexts [65].

Related Work

Despite several constraints that disconnect senior dwellers from the cyber world, there is a hybrid approach that the elderly still indirectly benefit from technology. Since the everlasting period of the Coronavirus disease, it is inevitable nowadays that communication through wireless connection is necessary for intergenerational life. An example of scaffolding learning experiences through slow technology is discussed in the following part.

Docomo smartphone lessons by senior instructors are an example that people experience through slow technology⁹. Individuals with capability in technological devices can share their know-how skills in using smart devices with their counterparts through their comprehension perspectives. Docomo hires senior staff to look after their elderly customers. Rather than underlining the usage of smartphones, slow technology focuses on experiences through learning. Senior instructors explain the usage of cellphones from their perspectives making learning processes more understandable. The elderly with more experience in technology communicate to enhance ease of technological use, creating friendship while learning. Docomo classes reiterate aging-friendly approaches enabling folk to experience more succinct, accessible, and meaningful ways to learn and rely on one another [66], [67]. From the audience's perspective, they comment that they enjoy making new friends, encouraging each other through the lessons, and obtaining basic smartphone skill sets. The lessons become a socializing activity in which participants create loose bonds with others.

2.2.2 Ticket-to-Talk

Since human beings by nature are social living creatures, bonding with others empowers individuals to survive and thrive. However, growing adults means striving

⁹ “新たな高齢者の憩いの場！ドコモショップが大にぎわいなワケは？,” Jcast, September 26, 2020, <https://www.j-cast.com/kaisha/2019/08/27365910.html?p=all>.

for living, and relocating for better job opportunities are examples that many choose to isolate themselves more than when they were younger. Urban sprawl opposes expanding quantities of abandoned aging communities where vulnerable seniors are prone to endeavor with social isolation and loneliness. Researchers seek an essence to eliminate these mental impacts through designs that enhance sociality utilizing ticket-to-talk to scaffold a sense of aging community cohesion [68]. The scholars clarify that the concept of ticket-to-talk is serendipitous interaction with one another. Scholars explore their studies about ticket-to-talk through different genres of designs such as environmental revitalization, tools, and sociality.

Related Work

Harborton Street Revitalization is a related work that portrays an example of street revitalization through workshop and installation tools to alleviate community participation and provocation. Taking a UK coastal town called Harborton as a case location, the authors elaborate on this shrinking community to a decline in investment and economic trends [69]. The renewal project intends to revitalize the abandoned street with brainstorming ideas from Harborton residents during a workshop and design installations to receive comments from the community dwellers. From the ICA Commission on Location-Based Services (LBS) standpoint, the design coincides with the concept of the organization that describes a location as a people-environment relation. The relationship between inhabitants and places consists of both elements that individuality and collective groups are responsible for one another¹⁰.

The initial process begins with a discussion between designers and town members to trigger community engagement through interactive installations for feedback to revitalize the town. Insights from brainstorming reveal that the residents desire to give support when it comes to community activities. Nonetheless, they are more cautious about displaying their identity based on feedback gathered by authors. Community dwellers prefer an indirect approach to sociality. Thus, the

¹⁰ Haosheng Huang and Haosheng Huang, "LBS Research Agenda: Call for One Paragraph Proposals of 'Big Problems' in LBS," ICA Commission on Location Based Services, July 15, 2016, <https://lbs.icaci.org/2016/07/>.

designers propose lo-fi prototypes mounted on Harborton's streets exhibiting local issues and comment boards accompanied by social tools such as pedestrian areas and parks. Incorporated installations with embedded equipment offer chances for participants to disclose themselves through conducting interviews at numerous places to stop by and have a chat.

Besides installations that trigger conversation and also engagement for town development through apparent designs that potentially increase serendipitous encounters, the project also includes workshops that deepen a sense of community cohesion. The workshop utilizes town maps as a ticket-to-talk to raise discussion about harbor development directions. Brainstorming from diverse actors enriches a sense of community because it grants emotional connections of belonging to the place or personal relatedness through interactions and shared history of their living environments [70]. Light, Leong, and Robertson state an essential part of well-being is cooperation, as participating in such activities helps contribute meaningful feelings to those involved stakeholders [71].

2.2.3 AIDAs Model

An emotional state is necessary to provoke community participation and gain community engagement from heterogeneous actors from different backgrounds. Attention, Interest, Desire, and Action (AIDA) is the widely used marketing model to gain targeted customers' attention through traditional and online methods [72]. Scholars explain that the model comprises four phrases in accessing the impact of promoting step by step to take over control of psychological transformation from sparking curiosity up to deciding to purchase [73]. Another group of authors elaborates that emotion and sentiment are stimuli affecting individuals' attitudes and behaviors [74]. On the other hand, negative impressions such as anger, sadness, and fear bring about avoidant or defensive drawbacks about products or services. On the other hand, positive perspectives such as trust, joy, and anticipation boost the desire to spend. Consequently, the researchers also reiterate that the ability to perceive the emotional state of marketers or academic experts enables them to better understand targeted audiences before launching products or services.

In aging settings, biological, psychological, and social declines cause older adults to become more dependent and sensitive through the advancing years [75]. Firstly,

biological aging refers to the maturation and reduction of physical functions such as visual impairment, memory decline, loss of hearing, and decreased mobility [76]. Despite phrases of aging through life span that are inevitable, constantly maintaining health daily can help decelerate signs of aging. Secondly, forgetfulness commonly occurs in seniors because aging decreases their mental ability. Nonetheless, scholars reveal that psychological aging depends on individual phases and progresses cognitive deterioration [77]. Experiences throughout their lifespan shape the elderly identities that can either shorten or lengthen their memory capacity. Lastly, social cues relate to relationships or roles within society or culture. The authors claim that surrounding circles are social capital that persuades one's decision-making and behavior.

Scholars explain that some senior dwellers feel younger due to social circumstances encouraging them to stay active and have positive views about aging [78]. However, disconnection or distinction from societal norms leads to isolation and loneliness, leaving traces of psychological or physical drawbacks. Lacking physical, mental, and social factors brings about sensitivity, uncertainty, or indecisiveness as aging progresses.

To sum up, social circles are vital factors that influence attitude, behavior, and decision-making. Family members, friends, or neighbors are catalysts that leave powerful impacts through five classifications of the AIDAs Model. Vulnerable members are more on one another to make a decision. The communication strategy that empowers bonds for socialization helps maintain healthy aging collectively through community engagement.

2.2.4 Word-of-Mouth (WOM)

Word-of-Mouth (WOM) is another communication strategy that stimulates older adults' decision-making. One of the earliest conveying information allows interpersonal exchange and access to credible details related to products or services since 1966 [79]. Recommendations or comments from social circles regard as the most influential communication that grabs attention and affects customers' behaviors [80]. In the marketing field, there are a variety of channels to launch goods in either traditional or online platform forms such as television, radios, printed advertisements, social network media, and more. Generally, scholars reveal that

users trust one another more than marketers as they rely on each other for insight perspectives [81].

In an aging community, vulnerable members count on each other before making purchases. Since health declines with decrease in mobility and town shrinkage cause stores to close down, older people have fewer choices and higher repeating purchases. Nevertheless, Huete-Alcocer explains that seniors appear as if they are brand loyalty members because of physical and surrounding restrictions [82]. In fact, social influence through observation and then imitation is more impactful. Moreover, another stimulation is circumstances such as work, family, neighborhood, welfare and other social conditions in which the elderly live. Authors describe these social environments as they take control of interaction between older adults, therefore changing these circumstances also mean fluctuation in consumption of goods or services [83].

Emotional drivers through WOM communication strategy can leave both positive, neutral and also negative feelings about products or services [84]. Delivering messages represent uniqueness or expertise of products or services to trigger attention from audiences. Huete-Alcocer illustrates that positive and neutral WOM are relatively usual types that evoke favorable emotion, possible adoption, and purchase behaviors respectively [82]. Spread WOM from an optimistic side allows brands to gain trust from their customers. Furthermore, positive WOM drives the continuance intentions. On one hand, negative WOM appears to be opposite to its counterpart as it discourages desires of product continuation [85]. Nevertheless, negative WOM is not necessarily a contrast of that positive. Scholars elaborate that negative WOM brings about further improvement of products or services through improving from received users' feedback [86].

2.3. Scaffold Connections through Food

2.3.1 Food as Cultural Inheritance and Identity

Food is frequently a center of social gathering that offers diverse opportunities to exchange cultural practices through interacting with one another [87]. Interaction about food preparation, serving, consumption, and more helps scaffold

bonds between individuals as they are carriers that transfer their identifications of attitudes, beliefs, and practices from one generation to another. Food-related topics stimulate conversation as they embrace cultural inheritance and identity of its origins, providing a mechanism of communication within families or other external circles [88].

Related Work

In Japan, freshness and flavor from seasonal ingredients are keys to Japanese dishes [89]. Cooking methods from different regions also vary depending on stories about the locations and their tales related to a dish. Cedillo also states that Japanese tourism has applied food in their travel programs and turned them into cultural experiences in various regions through culinary [90]. Although food is not the main focus of the journey, it promotes memorable Japanese explorations in various fields such as farming, fishery, and brewery. An example of such a cultural exchange program is the Worldwide Opportunities on Organic Farms (WWOOF). The service broadens hosts' and WWOOFers' horizons through interchanging resources [91]. WWOOFers apply for memberships paired with available hosts based on their preferences. Hosts grant meals and accommodation to WWOOFers. In return, WWOOFers to involve in-home activities such as washing dishes, helping with farming, making meals, preparing bento, and more. WWOOFing's cooperation, teamwork, and responsibility enhance cultural bonds through chores. Moreover, having meals together is a way to learn about Japanese table rules and etiquette. Since food is a common topic that triggers conversation, it helps scaffold bonds through casual interaction and exchange of cultural backgrounds and practices.

2.3.2 Therapeutic Therapy through Food Preparation

Besides cultural interdisciplinary, food preparation is a therapeutic therapy to minimize opportunities for similar chronic diseases in an aging population due to health declines through healthy eating [92]. Aging chronic diseases include dementia, hypertension, and osteoporosis with weak bones. Farmer and colleagues illustrate that influence of cooking interventions from planning for recipes, going

to grocery stores, preparing ingredients, eating together as a family time, and cleaning up a table involve the integration of biological improvement through healthy eating and psychosocial processes.

In Japan, people are very concerned about the freshness of food as it links to the nutritional and functional value of food [93]. Individuals tend to purchase and consume seasonal ingredients for nutritive values that can benefit health at whole levels. Following harvest times of the year, agricultural products also yield full of nutritional values to help maintain health conditions. The Japanese way of healthy eating has been embedded and begun since their food preparation from selecting ingredients. Careful selectiveness for choices of components is an example of healthy eating habits that apply to familiar grocery shopping with biological values as a part of life activity.

Rather than just contributing to biological advantages from fresh agricultural products that benefit health, cooking is a recreational activity as a way to express creativity that yields a positive influence on psychological health. Since improvisations in cooking often occur due to numerous factors such as individual preferences, experiences, practices, and cognitive thoughts based on previous logic and memories [94]. People either utilize random ingredients in a pantry or fridge through resourcefulness, creativity, and trial and error, transforming them into edible dishes. Going through a course of steps to achieve a satisfying self-satisfaction, Chen and other researchers reveal that cooking also requires logical thinking with creativity such as ingredients, tastes, decorations, and more to fulfill self-esteem and self-efficacy contributing to mental wellness [95]. Thus, cooking is a channel to outlet individual ideas and preferences influenced by social and personal aspects supporting emotional growth and social connection [96].

To sum up, from the discovery of several literature review studies, various ways to enhance communication and social engagement align with the research goals. Communication allows the elderly to realize other needs and be recognized by others with empathy to combat aging challenges. Since social isolation is a challenge from aging fast in Japan, opportunities to interact with one another with similar aging health declines help trigger conversation. Exchanging thoughts and difficulties through ticket-to-talk or WOM as communication tools helps scaffold an interdependent environment for aging communities where individuals rely on one

another. Food-related topics provide benefits to alleviate the aging community mentally and biologically as food is often a center for social gatherings, as mentioned earlier. Since food preparation processes are familiar tasks of daily living activity, researchers underline that repetitive home cooking means more frequency for favorable influences in reducing risks of psychological illnesses such as dementia or post-traumatic stress disorder [97]. An ability to actively focus by going through a course of steps to achieve a satisfying dish helps boost memories for vulnerable seniors who are more prone to short-term memory loss. Moreover, people communicate and enjoy food together as family time with fresh and selective ingredients benefitting inner organisms of bodies. All these mental and physical benefits of communication through food contribute to elongating life goals with longevity and the well-being of vulnerable seniors.

Chapter 3

Design

3.1. Research Setting

The foremost steps of research begin with an exploration of research settings through rounds of fieldwork to discover potential research fields at Yonamoto Housing Complex in Yachiyo city, Chiba Prefecture, Japan. Completion of construction was in 1970 with an approximate 3000 units of 5-story building without elevator¹. The housing complex is located in a suburban area about 1 hour and 30 minutes away from Tokyo city as a metropolitan district. Limitation in commuting routes via bus route, bike, car, on foot to the nearest station is a challenge for dwellers whose mobility has declined. Time consumption to travel to the nearby stations can be relatively long travel from one place to another for those vulnerable citizens. An overall illustration of commuting routes portrays in Figure 3.1.

Distances and constrained transportation channels isolate seniors from loved ones who work or live in the city center. Leaving behind 44.8%² of the aging population extracted the data from online resources of Yachiyochi City. The elderly members are estimated to be 2,337 out of the overall 5,218 people³ in the complex. From fieldwork and communicating with locals in the complex, many seniors live alone as single dwellers because their families or relatives mostly remain in urban locations for better jobs or educational opportunities. Thus, these elderly are more

1 “【特集】米本団地(千葉県八千代市),” UR都市機構, accessed June 7, 2022, <http://www.ur-net.go.jp/aboutus/publication/web-urpress63/special2.html>.

2 “町丁字別・年齢別人口,” 町丁字別・年齢別人口 - 八千代市, accessed July 24, 2022, <https://www.city.yachiyo.chiba.jp/21004/page000022.html>.

3 “町丁字別・年齢別人口,” 町丁字別・年齢別人口 - 八千代市, accessed July 24, 2022, <https://www.city.yachiyo.chiba.jp/content/000138351.xlsx>.

prone to social isolation and loneliness. Moreover, physical health declines due to aging may also generate psychological impacts. Vulnerable generations encounter higher risks of chronic conditions such as dementia, hypertension, heart failure, and others from both health deteriorations.

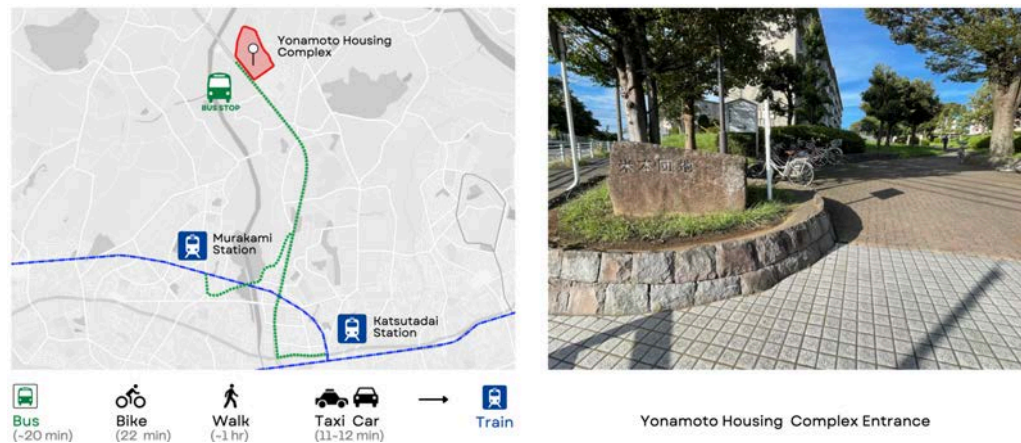


Figure 3.1 Commuting Routes to Yonamoto Housing Complex

Community care staff seek this essence of elevating interdependent living by cooperating with various stakeholders consisting of governmental, semi-public, or private sectors to enhance Yonamoto's heterogeneous life, especially those who are in the silver generation. The research goal underlines scaffolding community connectedness through 3 communication strategies to support healthy aging that WHO and UN have cooperated to elevate well-being through physical, mental, and social influences [98].

Chapter 3 highlights design processes from the introduction of a research setting, ethnography through fieldwork, methodology, rounds of prototypes, and experiments to tackle healthy aging by scaffolding social networks amongst heterogeneous residents at the housing complex.

3.1.1 Intro to Yonamoto Housing Complex

Since the predominance of Yonamoto dwellers are seniors, facilities nearby this aging community compile to alleviate the well-being of healthy aging through environmental supports previously stated in studies in chapter two. Besides public

transportation that allows people to roam around, destinations within walking distance include Yachiyo Agricultural Center, supermarkets, canteens, outdoor areas serving residents with fresh ingredients, household supplies, nutritious meals, and open spaces for socialization displayed in Figure 3.2.



Agricultural Center



Super Market



Canteen



Open Spaces

(Source: Inzaitopic, “やちよ道の駅食堂,” 印西とびつく (印西とびつく, July 18, 2022), [https://inzai-topic.com/yachiyo-michinoeki-syokudo-report/.](https://inzai-topic.com/yachiyo-michinoeki-syokudo-report/))

Figure 3.2 Facilities nearby Yonamoto Housing Complex

Freshly harvested agricultural produces from various local farming products such as vegetables and fruits guarantee a rich nutritional balance and vitamins. Outdoor areas near the agricultural center provide visitors with places for physical exercises such as strolling around, biking, and going for picnics. Moreover, the study describes green scenery as a therapeutic therapy for social gatherings that

help encourage interaction opportunities for individuals with nature or nearby surrounding rings to eliminate chances of psychological disorders such as depression, isolation, loneliness, anxiety, and others [99].

Within the Yonamoto Housing Complex, a community center represents as hub for heterogeneous people to blend and scaffold social networks with others. Although the location of the research setting appeared to be isolated, the community within the complex is always lively and full of activities that all generations can visit and enjoy their days. Diverse activities are sharing recipes, handing out community free paper to neighbors, giving hands for help during community cafe sessions, clearing weeds around community flower beds, babysitting after school kids, and others depicted in Figure 3.3⁴.

Every day, there are ranges of rotating activities based on the preferences or needs of residents from multi-generations. The center operates by a community leader and about three to four volunteer members who are aging citizens devoting their time and organizing activities every weekday. Furthermore, the community acquires support from the members of care staff who are governmental, partial public, and private sectors to age interdependently. For instance, Yachiyo City Inclusion Support Center Social Welfare, the Urban Renaissance Agency (UR), a nonprofit organization (NPO) called Wakka, and others promote and create physical and social environments contributing to intergenerational inhabitants. They cooperate to enhance community connectedness and ensure the well-being of the locals through a point-earning system called Yondan Happy Point Card. Participants gain rewards with points through volunteer work after collecting a certain amount for present redemption. Point hunters can then claim presents for a mini emergency kit set from the UR office next door to the community center. The point card stimulates heterogeneous dwellers to stay active through community engagement in plenty of activities displayed in Figure 3.4 that community care staff collaborators brainstorm and publish on the point card. The community center represents a melting pot in which visitors from various backgrounds in terms of age and capability to help one another help compile to reinforce the well-being scaffold of healthy aging collectively.

4 “やちよ道の駅食堂,” 印西とびつく (印西とびつく, February 27, 2021), <https://www.inzai-topic.com/yachiyo-michinoeki-syokudo-report/>.



Community Market



Community Free Paper



Cafe Session



After School Session



Medical Walking



Radio Calisthenics

Figure 3.3 Various Activities at the Community Center



Front

Back

Figure 3.4 Yondan Happy Point Card

3.1.2 Ethnography: Fieldwork at Community Market

Amongst myriad activities available at the community center, there are still gaps discovered for design opportunities for a community market. Wakka NPO has served residents by delivering fresh agricultural products from farms to the Yonamoto Housing Complex since February 2020. The community market emphasizes two essential value propositions for community people and other involved actors. Firstly, the market offers convenience for residents by supplying them with nutritious ingredients within walking distance from local farms to the front door of the community center weekly every Tuesday and Friday from 10:30 AM to 12:00 PM. Grocery shopping can sometimes be an obstacle for some vulnerable members who encounter decreasing capability in walking or cannot walk distances to purchase ingredients. Shorter distances for transporting vegetables also mean preserving nutrients in ingredients harvested from farms within Chiba prefecture. Secondly, Wakka NPO grants opportunities for farmers to expand their channels to distribute their products to local customers. Wakka NPO offers Yonadan points to those who donate their recipes portrayed in Figure 3.4. A part highlighted with a star is a recipe-sharing activity for participants to promote healthy eating by sharing recipes following seasonal vegetables. Unfortunately, recipe sharing does not receive enough attention from audiences because they cannot find value in participating and still missing sharing format. Through experiences from fieldwork, a compilation of ethnography describes a trigger that brings about recipe-sharing concept design to enhance the engagement of residents through healthy eating.

From an observer's perspective, this part is a compilation of ethnography that relies on self-experiencing through observation at the community market on Thursday, 9 September 2021. I arrived at an interchanging station called Katsutadai station with bustling sounds from people rushing to get into a bus or train as it is an interchange station. Bus interval that goes to the Yonamoto Housing Complex comes every 15 minutes. Some senior citizens were rushing with their grocery trolleys to get on a bus. They used their shopping trolleys as walkers to help support them while walking. Inside the bus, some seniors with trolleys or bags full of goods and grocery ingredients were already sitting and relaxing in their elderly seatings. Some of them utilized coins to pay for bus fees. It took some time for the bus to depart as they needed to look for an exact amount of change. While the others used prepaid IC (Integrated Circuit) cards to pay for transportation fees, some own seniors pass or disability identifications for discounts for transportation costs. On the way to the Yonamoto Housing Complex, I noticed some office workers hopping into the bus and dropping out of the bus along the way before reaching the complex that is the terminal station. It took about 15 to 17 minutes to arrive at the community center from Katsutadai station to the complex. Passengers who got off the bus at the last stop were all older adults except me. I arrived around 10:35 AM. In front of the center, there were already numerous grannies gathered around vegetable stands looking for their desired vegetables to cook for their meals. More customers poured in around peak time at 10.45 to 11:00 AM when most purchasers came as it is a first-come-first-serve service. Wakka NPO and local farmers serve the community with a limited amount of seasonal vegetables. Many visitors to the market are female elderly who had been housewives for some time. They tended to be selective about their choices of ingredients as they were concerned about their health. Thus, they preferred to come early for more vegetable options.

During observation at the community market from a foreign perspective, I had broadened my horizons about Japanese cultural influences in food preparations. Most purchasers were single female elderly who cook daily for their meals. They used this conservative practice called Shufu culture. In Japan, Shufu culture is a concept in which married Japanese women own an appointed position that is a so-called essential task for the household as a lead role for a taste of home [100]. Shufu

means housewife whose responsibility is chores and cooking for family members for each meal while men are out for work. In addition, preparation for a lunch box with a mothers' taste ascribes an element of home and motherhood to the daily rituals surrounding a housewife's cooking⁵. The culture has begun in the Meiji era (1868-1912) and is still a heritage to following generations. Long lengthened history still influences the baby boomer generation. Thus, they still carried on this Shufu culture by entrusting their cooking responsibility rather than relying on take-away, delivery, or convenient store food. They were more careful about their choices of ingredients that guaranteed freshness and nutritional balance elements for their dishes. Moreover, they purchased only an amount they could complete before vegetables lost their nutrition.

Types of vegetables rotate seasonally every week and could confuse market volunteer sellers as they had inadequate knowledge about cooking methods of uncommon or irregular rotation of vegetable species such as Watercress, Morning Glory, Bok Choy, and more. Patrons tended not to buy them due to unfamiliar appearances and names. When customers encountered these vegetables, they requested recipes for such ingredients. Therefore, Wakka NPO solved this issue by granting Yonadan Happy points to those who donated their recipes for others to trigger their ideas of preparing meals for those kinds of veggies. Recipe sharing aimed to reduce left behind vegetables that people did not buy as they did not know how to cook them. Unfortunately, the format of recipe sharing was still missing and caused no participants in recipe sharing. From this discovery, a breakdown provided an opportunity for design.

Besides Shufu culture, I faced another Japanese cultural influence through the communication of indirect language that is common in Japanese conversation [101]. In Japan, individuals do not tend to openly disclose or discuss personal contexts such as health concerns in lives stated by a volunteering nutritionist from House Food Corporation. The nutritionist worked at the Yonamoto Housing Complex since 2020 during the start of the coronavirus pandemic in Japan. For almost two years of experience, she explored aging studies to further improve future corporation products for senior citizens. In return, she provided nutritional advice

5 Maya Malloy, "Shufu Culture and the Bento," All About Japan, October 24, 2015, <https://allabout-japan.com/en/article/351/>.

to the market's visitors with concerns about their eating routines. From her insights, Yonamoto dwellers have similar health deteriorations such as a progressive bone disease with a higher risk of fractures called osteoporosis and hypertension from high blood pressure. In general, she explained that aging brings about these health declines that lead to signs of symptoms resulting in challenges in daily life. She recognized that the elderly here are aware of changes in their physical health but still lack the courage to discuss personal health issues with her. Instead, they requested whether she could recommend recipes with high calcium or nourishing heart-healthy ingredients. In addition, she also repetitively answered similar nutritional-related questions from seniors for those who were curious about their daily diets but could not explicitly express their health concerns. Since aging signs or symptoms in older adults are often associated with forgetfulness, it is necessary to reiterate such recipes and nutritional diet advice for audiences over again to boost their memories. She solved this by supplying wholesome recipe flyers and nutritional diet tips for readers to refer to while at the social welfare office near the community center to support healthy eating for residents. Her recipes included ingredients such as vegetables from the market or convenience store half-cooked products. However, the community center leader mentioned that the flyers did not receive enough attention from the Yonamoto people as considerable people did not know about the flyers due to a lack of promotion from community support. Furthermore, the leader and her vulnerable counterparts commented that flyers were not interactive learning. Hence, they did not find value in obtaining flyers.

All in all, this round of fieldwork and recorded ethnography underlines that the recipe sharing still needs a dynamic framework to trigger community dwellers to interconnectedly support healthy aging through food consumption. The next phase is a design methodology and concept involving several actors such as Wakka NPO, a nutritionist, a community leader, and others elaborated in detail later in a chapter. Therefore, communication strategies are keys for blending and cooperating with all support from numerous care staff within and outside the complex.

3.2. Resource Studies

Concept design incorporates a pile of insights from fieldwork through rounds of discussions with related stakeholders for filtered ideations and playing skits before proposing a conceptual design to obtain self-experiences for further design improvement. Supportive social environments from various involved actors are keys to amplifying community engagement for recipe sharing as a recreational activity. Accumulation findings from interaction with the nutritionist, the community leader, and the market customers proceed to ideation tackling breakdowns from recipe sharing. Ethnography from close observation from fieldwork unveils two major recipe-sharing failures. The first is a lack of format for sharing opens an opportunity for designing. The second is an insufficient promotion for recipe sharing. Based on these two factors, proposals for recipe sharing are a sharing board and a contest to confront the former challenges mentioned earlier. The design goal aims to maintain physical health through healthy eating while scaffolding community connections to minimize the chances of social isolation affecting psychological stability. A design for recipe contest procedure to gain community engagement for recipe sharing needs rounds of communication and cooperation from varied stakeholders to help combine a concept of maintaining health through food preparation. Besides, gaining trust from community members as a newcomer in the community is a time-consuming process in design. However, receiving acceptance from volunteer members is an essential design process for the aging context. The proposal of utilizing a recipe sharing board as a tangible communication tool helps with design visualization to promote the concept design of the recipe contest.

3.2.1 Resource Studies

A design scenario is an integration of available resources at the Yonamoto Housing Complex contributing to the Yonamoto Recipe Contest as a recreational activity to enhance healthy eating. Accessible assets within the community include various actors and artifacts incorporated to organize the recipe contest for social engagement to activate recipe sharing on Yonadan Happy points.

Human Resources

Necessary human resources for the recipe contest are regular and irregular visitors such as volunteers, vulnerable residents, and community supporters. Also, the nutritionists from Wakka NPO and Yakuju Pharmacy help provide nutritional knowledge for the locals of Yonamoto Housing Complex. The first actor for discussion is the nutritionist who has volunteered at the community center for almost two years. From the nutritionist's perspective, people prefer to come for grocery shopping at the community market rather than other supermarkets because they have opportunities to consult their diet concerns with a nutritionist individually through casual chat. Individuals feel comfortable expressing worries with someone with whom they feel familiar. Since the nutritionist has worked here for some time, she has scaffolded her bonds with community volunteers and Yonamoto residents. From observation, they enjoy socializing with her as they can receive nutritional advice from her expertise entrusted and respected by community dwellers. When a conversation about recipes occurs, especially during the market session and lunchtime, those durations grant chances for her to reinforce the importance of daily meals that influence health conditions.

The second involved actors are regular visitors who are volunteer members consisting of the community leader and her supporters. Extraction from rounds of fieldwork since March 2021, the community leader resembles the vital pillar that empowers aging in place by encouraging others to stay connected with the community center through activities mentioned in the earlier part of the chapter. The leader represents a role model for other vulnerable residents to age in place actively. From observing and having a casual conversation with her, she owes three core leadership qualities embracing empowerment, communication, and empathy. They help strengthen positive and productive relationships. The leader has strong connections with many visitors as her leadership attributes allow her to perceive heterogeneous values of multi backgrounds in her team. Thus, her presence and word are underlined with trust from others as they are influences-driven community engagement. In addition, her supportive teammates also help spread positive reinforcement to enhance motivation and participation from the crowd. Regular and irregular volunteers are responsible for facilitating rotating activities such as serving coffee during cafe sessions, providing content on community free paper, or

cleaning up the community center after opening hours. All people at Yonamoto Housing Complex are always welcome to sign up for volunteering tasks to be a part of the community contribution.

The last human resources are irregular visitors to the community center. Most of them are vulnerable seniors who are supportive of social influence on one another. In this aging context, interdependent connection through activities at the center allow them to interact with one another. Recreational chances help reduce prone to social isolation that may negatively affect mental stability. The majority of Yonamoto elderly are aware of health decline due to aging. Also, they have various approaches for maintaining their health conditions. For example, some prefer physical exercises such as joining medical walking or radio calisthenics. Another group of people chooses to pay attention to their diets. For instance, they are selective about the freshness of ingredients or tend to avoid overconsumption of salty or desserts reducing the risks of having chronic diseases. Nonetheless, the nutritionist suggests that the elderly need both workout and nutritional balance for successful aging.

Artifact Resources

Besides human resources, artifact resources are also essential for designing Yonamoto recipe sharing as it helps ease design visualization. Three artifacts utilized for the recipe contest are a community-free paper, recipe sharing board, and theme of the month for recipe sharing. The community free paper introduces the recipe contest to the public. It is a self-made paper by community volunteers who help collect memorable moments or special events of the community center to boost community participation. Publication of community free can help promote the contest to the public eyes. Another artifact is the recipe-sharing board that illustrates the co-creation of individuals who contribute to the recipe contest. From a nutritionist's standpoint, a tangible and visible sharing format helps gain public interest because the babyboomer generation is used to such a medium design format rather than online media on screens nowadays. Also, she adds that appealing values for participants to recognize the essence of this sharing are also vital. She proposes that the granted theme for the recipe contest is also one of the artifact resources. A recipe contest theme portrays opportunities for participants to fulfill

the board as several Yonamoto seniors encounter similar needs due to aging health declines.

The design needs the integration of human resources and artifacts to gain community engagement for the Yonamoto recipe contest to maintain health conditions by exchanging conversation through food preparation. The following stage will be an integration of resource processes depicted in design scenarios. For the next phrase design, listing a storyboard outline and playing a skit are design steps to explore and perceive from stakeholders' perspectives. An Illustration of design scenarios shown on the storyboard in Figure 3.5 expresses the usage of the recipe sharing board chronically into six timeline frames in the consecutive section.

3.3. Concept Design

The concept design for the Yonamoto recipe contest represented in Figure 3.5 illustrates scenarios that strive to achieve two needs for enhancing social engagement for the recipe contest. Co-creation of scaffolding community networks through the recipe contest as a recreational activity for residents bringing about the heterogeneity of skills and knowledge to support one another through healthy eating. The first need discloses the realization that other dwellers also have similar or the same health concerns. Another need to fulfill is a recognition of individuals' co-creation for the recipe contest. Besides completing two needs, the Yonamoto recipe contest also emphasizes the meaning of living interdependently with a united life goal to maintain health through healthy eating along with other residents.

3.3.1 Service Ecosystem

Design Scenarios

An elaboration about the first need attempts to tackle Japanese indirect language as a barrier preventing individuals from realizing the value of sharing recipes. Re-iterating insight from the nutritionist's examining experiences at the community market, she states that vulnerable members tend to have similar health concerns due to aging deterioration. Nevertheless, the Japanese elderly avoid mentioning their health declines as they perceive it as a personal context. Without the courage

INVOLVED ACTORS

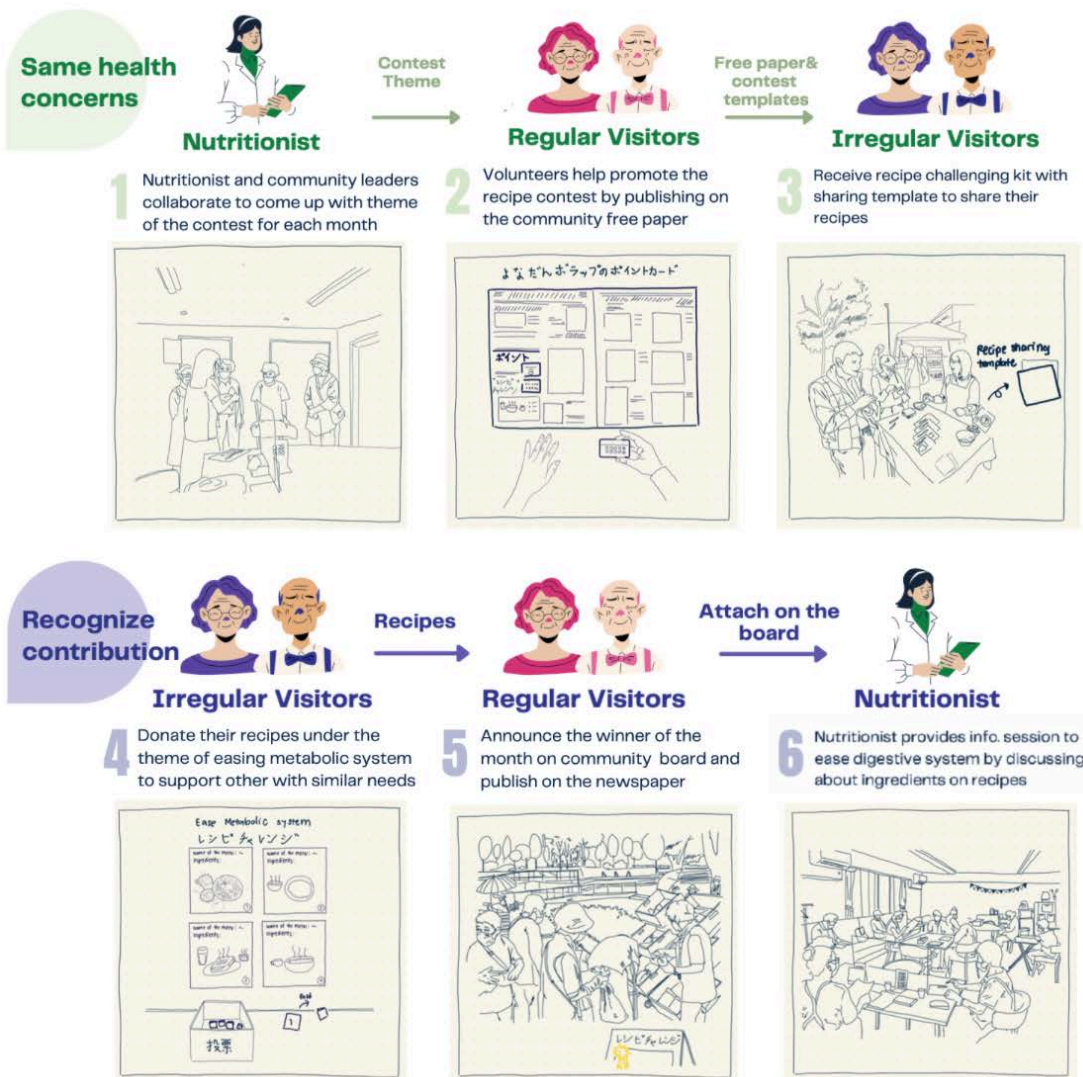


Figure 3.5 Recipe Contest Design Scenario

to utter their worries verbally, it is difficult as an aging care staff to provide the accurate and correct advice. Otherwise, seniors with more encouragement ask similar questions repetitively due to their memory decline. Thus, an activity that can assemble participants at one place for health talk with rotating themes is a recommended resolution to facilitate and minimize existing challenges for recipe sharing. More perspectives from the community leader and visitors reveal that they verbally enjoy sharing recipes during lunchtime and community market. The leader explains that a recipe is a popular intangible ticket-to-talk topic in which she, volunteer members, and visitors exchange their cooking methods while having self-prepared lunch boxes at the community center. They express that writing down recipes can be a hurdle but helps recollect their memory. The design for the first need is in Figure 3.5 from the first to the third frame. The storyboard includes scenes from coming up with the recipe contest theme, promoting the recipe contest through community free paper, and handing recipe contest kits comprising sharing templates and instruction cards for participants.

The second need focuses on the format of sharing in a tangible medium and template for writing down recipes representing a concept of slow technology for the aging context. The second half of the board embraces the processes of writing recipes on templates, announcing recipe winners on free paper, and offering a nutritional talk session for Yonamoto residents to maintain their health conditions through nourishing diets. From discussion with the nutritionist and volunteers, they provide a vital point that senior residents are heterogeneous in terms of ages, hometowns, technological capabilities, and cooking ability. Diversity in this complex allows interdependent living by sharing recipes as cultural identity exchanges. Through conversation with some community visitors, people have varied ways to obtain their recipes such as from TV varieties, YouTube channels, magazines, looking up on search engines, friends, nostalgic recipes from mom, and more. Ones with access to online content or broadcasting channels can share their recipes with others. While those who do not have the internet or smart devices can share their life encounters through cooking with others. Along the way of recipe sharing, the design participants can enjoy many recipes and value experiences of technological utilization. Technology envelopment for this recipe sharing allows an appreciation of sources of wholesome recipes applied to daily

life rather than a digital approach to solving difficulties in life.

Integration both from humans and artifacts summarizes into a scenario of a storyboard. To activate recipe sharing for Yondan Happy Point's ecosystem, involved actors brainstorm to drive a cycle of recipe sharing. Cooperation amongst actors is a factor contributing to the recipe contest through the utilization of available assets within the Yonamoto Housing Complex. Communication amongst stakeholders and exchanging insights from close observation of audiences studies are a compile of design methodology from user-centered perspectives. Blending between Human resources and tangible artifacts aims to portray the value of sharing to audiences. The recipe contest, board, and recipe sharing template are a transformation of an intangible daily topic conversation about recipes into a tangible ticket-to-talk that intends to grab public attention for community engagement.

Skit

Conducting a skit with divided roles of involved actors enables a designer to perceive various actors' mental models for the next design step. On 31st August 2021, a role play with research teammates and family members to explore face-to-face procedures of the recipe contest rather than graphic portray of a storyboard with descriptive words. The aim of the skit allows exploration to examine more about how drawn concept design runs physically. Before the act, we assigned roles and gathered the necessary props needed in Figure 3.6 to drive the service ecosystem of the recipe contest. The consequence of the following part is the findings' description from a self-experienced perspective of the recipe contest service flow in these scenarios.

Findings from teammates, three major design touchpoints need to be adjusted to facilitate the recipe contest and activate Yonadan Happy Point Ecosystem. Firstly, there is a lack of a constructive graphic illustration of recipe contest templates. Missing a structured format for a hard copy of a template is a challenge as it may make participants confused or doubt what required contents on written templates. The second point is the design of the recipe board for its size and location for placing the recipe board. Lastly, there are several ways to display recipes by attaching with paperclips, adhering with a magnet, or hanging with hooks to display recipes on the board. Thirdly, an emerging question about funding for

recipe rewards for contest winners is one of the takeaways for further design steps and discussions.

Furthermore, gathering recipes from senior family members who contribute to the skit reveals various mental models for their food preparation methods. In Figure 3.7, participants either rely on their meal of the day based on available ingredients inside a fridge, ingredients nearby their living place, or leftovers. Also, they uncover their childhood stories about former generations that they have to strive for living. Thus, they are deliberately careful about wasting food. In addition, they have numerous recipe sources such as from the internet and cooking varieties and different ways of taking memos of their recipes. Two participants record their recipes with photos taken from their smart devices with short notes and a link to the recipe page. Both of them are capable of using technological devices. Also, they comment that appealing images may help trigger other passersby looking from distances. Another actor does not include a photo as she has limited technological knowledge, thus submitting only in a written format.

Service Flow

In Figure 3.8, The recipe contest service ecosystem depicts the mechanism flow of how each involved actors exchange value propositions amongst involved actors. The procedure is to design the flow of value through resource integration that activates Yondan Happy Point. The ecosystem system aims to trigger healthy eating in an aging community through a scaffold of a concept co-creation that expresses value exchange amongst involved actors.

Referring to a cycle in Figure 3.8, we began from the most inner circle in light green. The human resources of the recipe contest consist of community volunteers, visitors, and a nutritionist. Following the order, the nutritionist proposes several common diet concerns in aging to discuss with community volunteers for the monthly theme of the recipe contest. She delivers her nutritional expertise to the community center. In return, she scaffolds her social connections with regular visitors and newcomers in the community by receiving trust from community people to help with her studies for House Food Cooperation's future products. After brainstorming to develop a theme for the recipe contest, all actors agree on the title "Let's have balanced vegetables and protein to strengthen muscles."

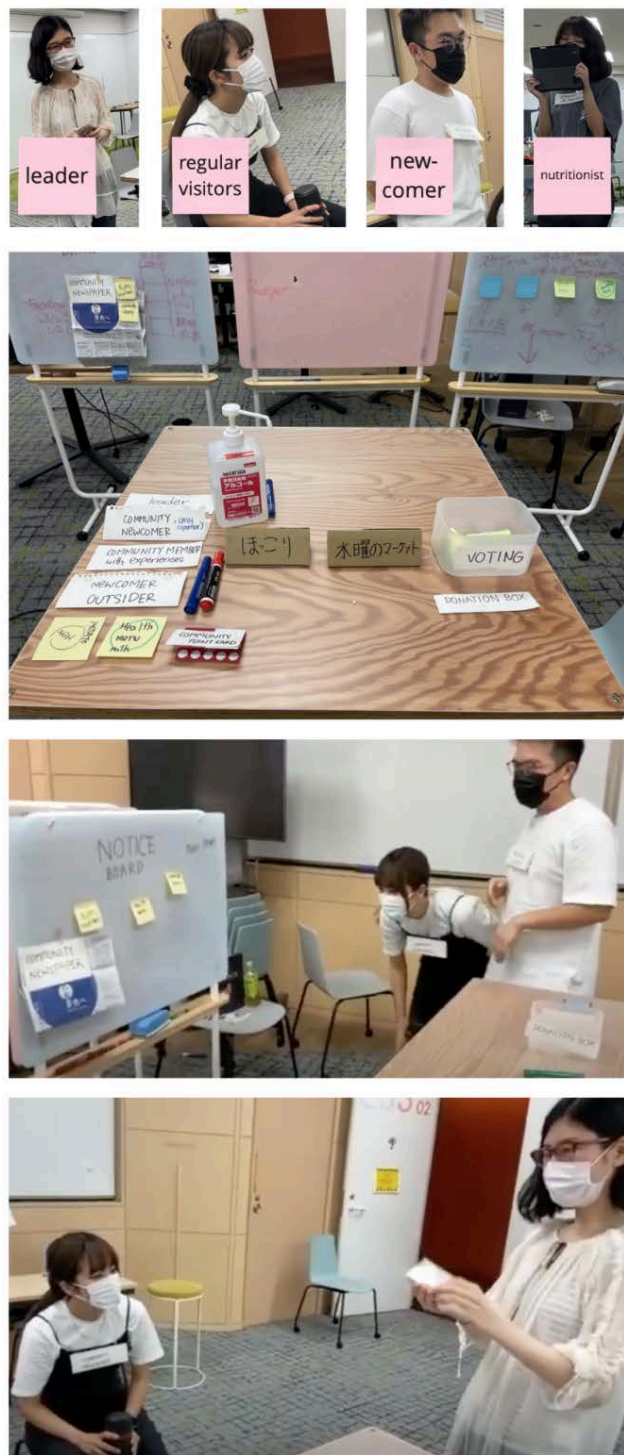


Figure 3.6 Recipe Contest Skit Atmosphere

Age: Seniority
 Job: Retired
 Living with: Son and his family
 Food resources: food stalls and supermarket with help from her son
 Record device: Smartphone
 Method of records: Taking photos & someone wrote down the records
 Absence within a week: 2 days



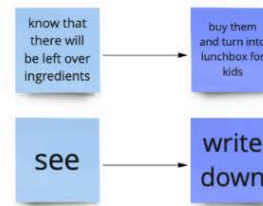
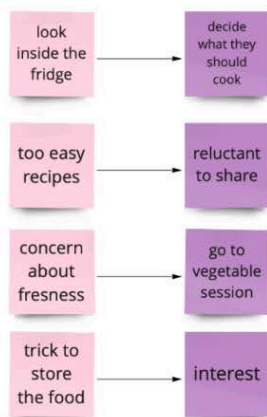
Age: Adulthood
 Living with: Alone
 Job: Housewife for 2 yrs after retired
 Food resources: local market and food stall near her house
 Record device: Smartphone
 Method of records: Taking photos
 Absence within a week: none



Age: Seniority
 Job: Retired
 Living with: Son and his family
 Food resources: food stalls and supermarket with help from her son
 Record device: Smartphone
 Method of records: Taking photos & someone wrote down the records
 Absence within a week: 2 days



Mental model



Examples of shared recipes



- Collagen dipeptide drink
- Chocolate flavored malted drink
- Orange
- Soft-boiled egg
- Salad



Directions to make Taro Root Pudding

- 1 In a medium pot, cook water till water bubbling, add diced taro root in boiling water and cook till taro root tender. Remove cooked taro root from the pot and set it a side. Add sweet rice in hot water, cook and stirs occasionally till rice tender but not over cooked. Put cooked taro root in with sweet rice, stirs, add sugar and salt, stirs well.
 - 2 Top with prepared coconut sauce before serve.
- Serve hot or warm.

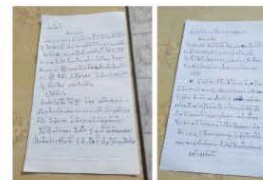


Figure 3.7 Shared Recipes from Skit & Mental Models of Participants

Besides promotion for the recipe contest, the vegetable-related theme also helps amplify the existence of the community market. The volunteers intend to promote the recipe contest through the free paper as it can reach numerous people targeting newcomers who do not know and visit the community regularly. The volunteers aim for more newcomers who have the potential to turn into volunteers in the future. Besides the nutritionist, volunteers also play supporting roles to encourage community visitors to fulfill the recipe board.

The second dark blue ring emphasizes a moment that triggered participants to share their recipes for the recipe contest. The nutritionist enables to influence visitors to participate as her nutritional background delivers a value of healthy eating that is vital for people of all ages. Paralleling with nutritional balance, physical exercises such as medical walking or radio calisthenics are also important. They are available weekly at the community center for residents to join and encourage each other to maintain their health. Recipes on the board benefit the silver generation who do not use digital platforms, not have access to online content or technological gadgets. The attached recipes resemble a ticket-to-talk as they can trigger a conversation among volunteers, visitors, and a nutritionist to converse. From volunteers and a nutritionist, they perceive the community market as a socializing session that is necessary, especially during the pandemic when everyone needs to keep their distance from one another. The outdoor setting of the market is suitable for spending a longer duration of leisure standing or chatting on benches without worrying about poor air ventilation. The contest offers an opportunity for regular visitors and newcomers to scaffold community connectedness with others to explore more about other activities.

For the outermost circle, the last circle is a wrap-up of the recipe contest service ecosystem designed to encourage residents to engage in a community activity through the Yonadan Happy Point Ecosystem. Activation is a goal for this stage to trigger Yonamoto dwellers to realize and be recognized the vitality of healthy eating through recipes. Integration of heterogeneous resources and their cooperation help scaffold frameworks of the recipe contest as social interaction opportunities to trigger co-creation. Resource integration and exchanging value propositions amongst involved actors are bridges that reinforce aging in place with interdependent living.

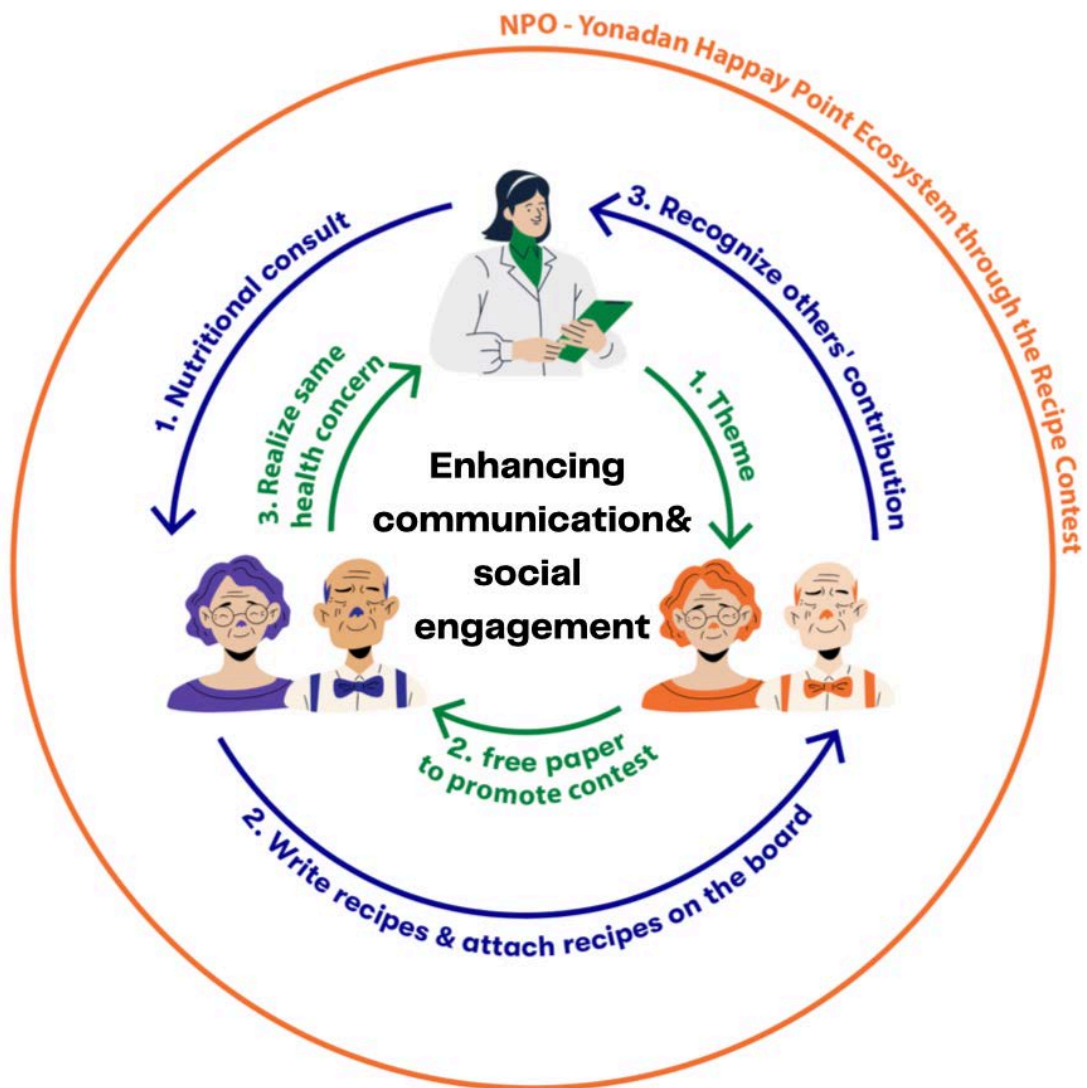


Figure 3.8 Recipe Contest Service Ecosystem

3.3.2 Research Question

Acknowledging the importance of maintaining health through food preparation as a daily activity in life, the purpose of this study is to employ design processes for the recipe contest to activate Yonadan Happy Point. Co-creation design with Yonamoto residents aims to trigger their interest in setting achievable healthy eating goals incorporating into daily life through food.

Sharing experiences scaffold community connectedness through recipes as a ticket-to-talk amongst heterogeneous residents regarding ages, hometowns, genders, capabilities, and more. The community center resembles a hub as a melting pot that blends this diversity yielding an interdependent environment for the aging society.

To begin, the following exploratory research questions need to be investigated:

- Whether the Yonamoto Recipe Sharing triggers the importance of healthy eating towards food preparation or grocery shopping for the involved actors, including community visitors, volunteers, and a nutritionist?

3.4. Design Processes

Design processes aim to verify hypotheses from research questions through a series of Yonamoto Recipe Sharing designs consisting of 3 phases of procedures. Each design process complies with research questions respectively.

The order of design processes divide into 3 phases:

1. Setting a Theme for the Recipe Contest
2. Gathering Recipes
3. Food Demonstration (お披露目会)

From the nutritionist's perspective, keys to healthy aging need constantly maintaining conditions through physical exercise and healthy eating. Yonamoto Recipe Sharing is a co-creation design that incorporates hands from various actors to

drive the cycle of sharing to scaffold interdependent living with other Yonamoto dwellers. Diversity of actors also means a lot of communication strategies in facilitating the contest.

The following communication tools are necessary to cooperate with myriad actors:

- Ticket-to-Talk: Recipe board and sharing template allows opportunities for interactions
- AIDAs Model: Trigger to gain cooperation from community volunteers
- Slow Technology: A medium that values interdependent experiences of technological utilization to enhance lives by the co-creating recipe board
- Slow Technology: A medium that values interdependent experiences of technological utilization to enhance lives by the co-creating recipe board
- Word-of-mouth (WOM): Influence by spreading and encouraging ones to maintain health conditions through healthy eating

3.4.1 1st Phrase: Setting a Theme for the Recipe Contest

The following part is the descriptive record of fieldwork to discuss appealing themes that trigger the public interest to join the contest on 9th November 2021. From a foreigner's perspective, language barriers are an obstinate significance that distorts desired delivery messages to listeners. Thus, the presence of tangible objects as a tool that helps enhance accuracy in communication and trigger conversation is crucial [68].

On 7th September 2021, I went to the Yonamoto Housing Complex during the community market session to consult an idea for the recipe contest with rotating themes to alleviate healthy eating with physical exercises in this complex for the 1st design phase. I brought thematic recipe cards as a communication tool to convey the proposal idea about the recipe contest that drives the Yonadan Happy Point service ecosystem. The thematic cards resemble a ticket-to-talk to converse with community volunteers and the nutritionist shown in Figure 3.9. Considering themes for the recipe contest, the nutritionist revealed from her working experiences at this complex for about two years that vulnerable groups usually encountered similar nutritional concerns. For instance, an insufficient quantity of

protein, a lack of calcium, and a decreased ability to taste caused by an exceeding amount of sodium consumption is typical elderly challenges. Before working at this complex, she used to work at another aging community for about three years and reiterated that seniors in another location also confronted similar diet issues. From her standpoint, she commented that such contest activity could apply in other aging communities.

The nutritionist categorizes themes into three main groups. The first is ready-to-be-used topics with penetrated aging-related contexts. Some insights from the leader and volunteers shared that Yonamoto residents are multicultural communities with hometowns from numerous prefectures and also countries such as China, Vietnam, Thai, and more. The community leader and volunteers recommended that topics associated with seasonal greetings or cultural exchanges could be captivating names to invite people to engage. The second classification is those that needed amendment as they could be too challenging or not compatible with vulnerable audiences. The community leader and volunteers suggested that the Japanese phonetic lettering system called Katakana can be an obstacle for silver generations to comprehend. Transliterations such as vegetarian or anti-aging raise curiosity and can be difficult for participants to think about recipes. Lastly, the third type has attractive names but still requires wording refinement. The nutritionist elaborated that themes with aging-friendly appearances enable trigger potential participants to spare their time to have a look. An example is a healthy recipe for gum that eases chewing. A solution for adjustment from the nutritionist is that the theme with recommended ingredients may help clarify or grant hints for recipe providers to think recipes according to guiding references.

Findings summarize that experiences in the aging working field are essential for designing. Regular visits help to gain the trust of community members. Similarly, the nutritionist makes her visit to the community center twice a week and creates connections with the locals. Thus, they are familiar and feel comfortable having a casual chat with her. Discovery from the nutritionist and volunteers are valuable findings that can contribute to the future development of the theme of the month for the recipe contest.



Figure 3.9 Sorting Potential Themes for the Recipe Contest

3.4.2 2nd Phrase: Gathering Recipes

The second phrase is gathering recipes with help from the utilization of slow technological media as artifacts that are recipe board prototypes and sharing templates illustrate the co-creation of a recipe board for healthy eating. Despite a relationship between tangible artifacts and technology, experiences through interaction with the board or templates yield learning from technology-produced media among heterogeneous residents with different levels in technology. Through a casual chat with community visitors, some of their recipes come from various sources, such as cooking channels on YouTube, search engines, and taking photos of recipes from cooking variety shows.

The objective for the second phrase targets participants' desire to set achievable healthy eating goals through food or cooking as a familiar task of daily living activity. Numerous visual graphic modifications, such as displaying the board's appearance and recommended ingredients with colorful vegetable icons, aim to trigger a desire to interact with the design and learn from observing the board. Nonetheless, just design representations alone are inadequate and do not successfully convey the objective of the recipe contest to audiences. The value proposition

of the design does not deliver properly due to communication methods that mislead the essence of sharing.

An emphasis for the second phrase incorporates a communication strategy that is the AIDAs Model to confront this miscommunication in delivering value propositions of the design to audiences. The model is vital to enhance engagement from community volunteers, the nutritionist, Wakka NPO, and community center visitors. Preparation of a series of inquiries to trace a potential participant’s journey through awareness, interest, desire, and actions step-by-step to advertise the recipe contest service [72]. Preparation for a set of questions consists of twenty each for 5W1H queries shown in Figure 3.10. Community visitors undergo this sequence from simple to rational questions of who, what, where, when, why, and how. Individuals make a decision afterward whether to participate in the recipe contest. Comprehension by learning through customers’ journeys allows an action which is the last step in the model to twist a plot in the design from a hurdle in writing to a willingness to share recipes.

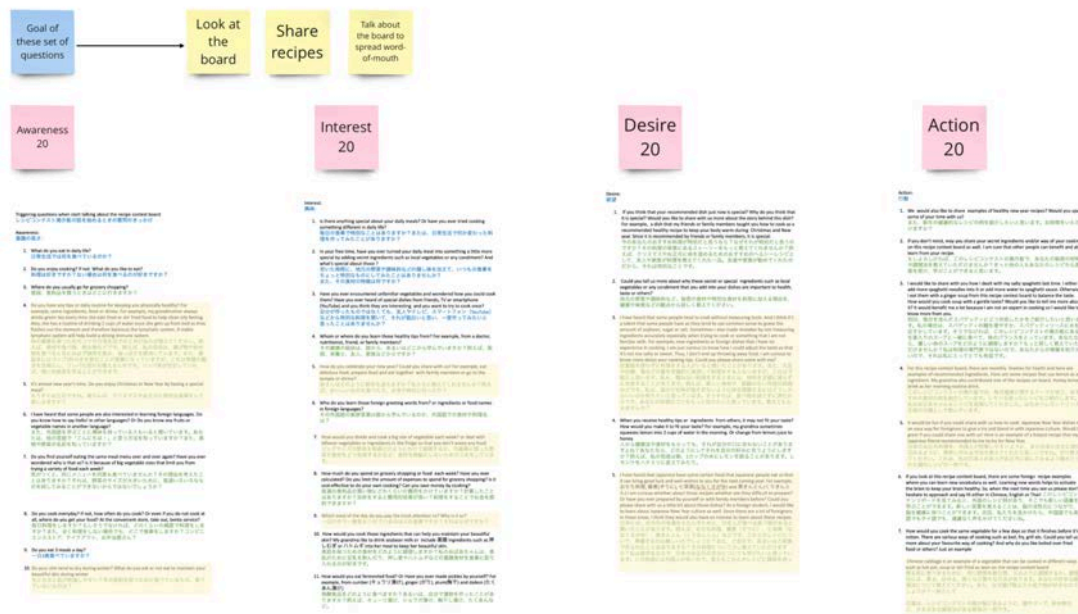


Figure 3.10 AIDA's Model Sets of Questions to Convey Value Proposition

On 15th December 2021, another attempt to discuss with the community center leader about the value propositions of the board to obtain her permission to set

up the board for people to start sharing recipes. The leader gradually perceives meaning in sharing through several questions one step at a time. The goal of these sets of questions is three actions which are looking at the board, sharing recipes, and talking about the board.

Examples of questions utilized on that day:

- Awareness: Do you eat at a regular time everyday?
- Interest: Which meal of the day do you pay most attention to?
- Desire: I have heard that Japanese have some particular food that Japanese people eat so that it can bring good luck and well-wishes to you for the next coming year. For example, おせち料理, 雑煮, 七草粥 and 栗きんとん. Have you ever prepared by yourself or with family members before? Could you please share with us a little bit about the meaning of those dishes? As an international student, I would also like to learn about Japanese New Year culture.
- Action: It would be fun if you could share with us how to cook Japanese New Year dishes in an easy way for foreigners to give a try and blend in with Japanese culture. Here is an example of a hotpot recipe my Japanese friend recommended for me to try for New Year. Please share one with us!

The following part is a journal of takeaways from fieldwork in the middle of December before the community center's new year closure. Findings from the questions above taught me that step-by-step inquiries are compatible with seniors. Communication without comprehending the mental model or background story of one's counterpart could be challenging to deliver the desired message to a listener successfully. Moreover, the right timing is vital while communicating to tackle change in action. I had a corresponding theme about the new year to converse with the community leader. Seasonal greetings are a topic that individuals can relate to regardless of cultural background. Personal curiosity and eagerness to learn about Japanese culture were also crucial. It helped extend the conversation and broadened my horizons as an international student. The overall timing for discussion to complete a course of questions was necessary. I chose to

visit the community center in the afternoon, so we had enough time to have a continuous set of questions without conflicting with lunchtime. The community leader enjoyed looking at a prototype and provided recipe examples with some illustrations portrayed in Figure 3.11. I also had an opportunity to exchange Thai people's recipes during New Year. Thus, in return, she also shared her new year recipe and granted permission to set up the board to start the contest. While talking about recipes, surrounding audiences, such as other community visitors, volunteers, and social welfare staff, also overheard the conversation and stopped their tasks to listen. The social welfare staff was one of the listeners who were so excited about the contest that she took photos and posted them on the Yachiyo City Council Facebook account to help promote the recipe contest.



Figure 3.11 Discussion with Community Leader Using AIDAs Model

To sum up chapter three, communication is the key to activating the recipe contest's service ecosystem with many actors involved. Communication is an impactful element in easing interdependent healthy eating in aging. Communication

tangible tools for visual illustrations and strategies are crucial for cooperating with several people. Considered questions and empathetic listeners are pivots to change the actions of individuals from looking at the board, sharing recipes, and talking about the board.

3.4.3 3rd Phrase: Food demonstration (お披露目会)

For a month of the contest, cooperation from myriad actors contributes to a plentiful amount of received recipes that are later further developed into a food demonstration to enhance value propositions to Yonamoto residents.

The nutritionist selects recipe winners based on three criteria:

1. Level of easiness
2. Well mixed variety in ingredients with balanced nutrition
3. Uniqueness compared with others

From phrase two, the community leader and the nutritionist view Yonamoto Recipe Sharing as a recreational activity aiming to trigger both regular visitors and newcomers for healthy eating as a goal to maintain health along with physical exercise. On 8th February 2022, the following section describes fieldwork for the food demonstration in detail during a discussion with the community leader and the nutritionist. From phrase two, the community leader and the nutritionist view Yonamoto Recipe Sharing as a recreational activity aiming to trigger both regular visitors and newcomers for healthy eating as a goal to maintain health along with physical exercise through food demonstration. From the community leader's observation, she revealed how observers reacted to the board by taking photos with their cellphones to record recipes as they would like to try cooking at home. However, a portion of people still do not own cell phones and have to memorize desired recipes. Due to mental decline in aging, individuals may not fully remember or forget some details on written recipes. Many people were interested in the recipe sharing board and the contest at the beginning of the recipe contest. They tended to lose interest over time as audiences visiting the community center were

usually regular visitors. The proposal of food demonstration recommended by the nutritionist and the community leader aims to alleviate the value proposition of winning recipes. In addition, the community leader implied that publishing the winning recipes on community free paper portrayed in Figure 3.12 could be a resolution to increase the number of participants. The more interactive design idea of food demonstration intends to keep the eagerness of viewers to share by attracting regular visitors, irregular members, and newcomers.



Figure 3.12 Recipe Contest Content on Community Free Paper

The third phrase underlines the significance of recollecting memories by re-experiencing learned nutritional knowledge or recipes while cooking or grocery shopping. The nutritionist suggested that such an activity could enhance conversation and spread healthy eating through word-of-mouth (WOM) amongst participants rather than just sharing recipes on the board. In phrases one and two, volunteer members did not have a clarified value proposition of Yonamoto Recipe Sharing. Therefore, the design might confuse some visitors, and there is no WOM to spread amongst community center visitors [102]. In the current stage with food demonstration, people successfully received the purposes of the recipe contest and dealt with the hurdle of writing down recipes. They perceived that their recipes could somehow benefit counterparts within the complex. Individuals who struggle

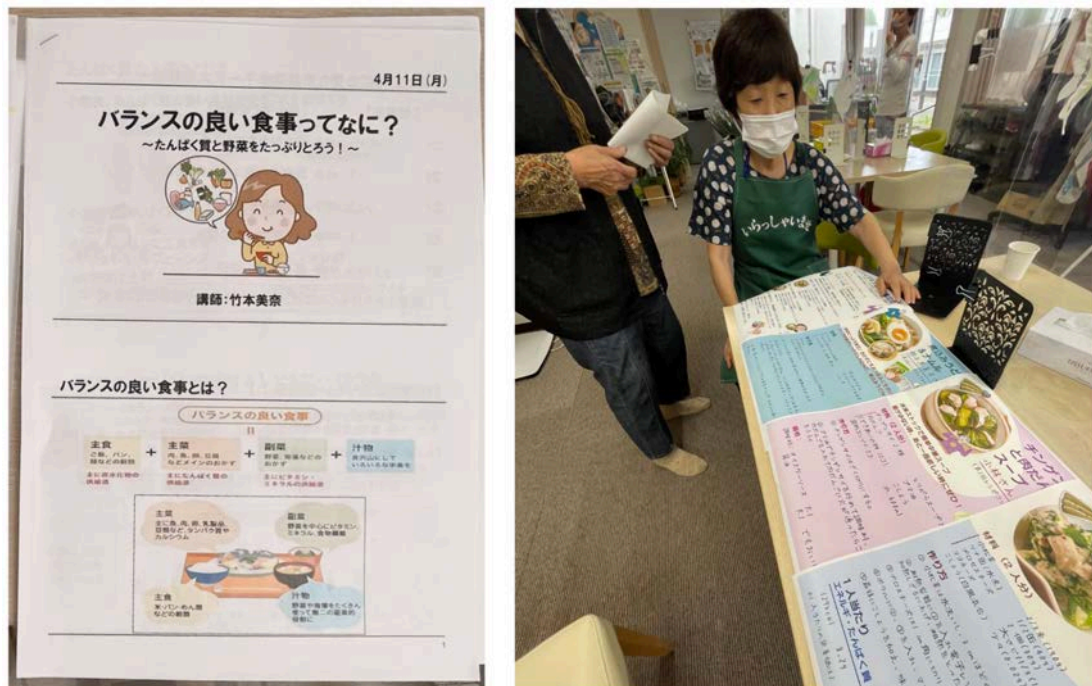


Figure 3.13 Flyers for Food Demonstration

with health declines and food preparation would benefit from heterogeneous contributions. The nutritionist also highlighted that the pandemic changed primary communication to online platforms. Nonetheless, numerous seniors do not have access to the internet or technological devices. Thus, these abandoned vulnerable groups from the cyber world strive to deal with social isolation and maintain health during social distance.

After brainstorming with stakeholders, we concluded with a food demonstration and a nutritional talk session to add more value propositions of Yonamoto Recipe Sharing for dwellers in the complex. The community leader provided advice that having flyers given out to promote the demonstration would be a compatible means of communication to encourage the demonstration. Also, audiences could bring flyers back home and try to cook or revise what they learned on the date of the demonstration event. For the advertising stage of the food demonstration, I designed recipe-winning flyers and cooperated with the nutritionist to prepare handouts on the food demonstration day, as shown in Figure 3.14. Besides, I



Figure 3.14 Decorated Recipe Sharing Board with Winning Recipes

decorated the board with winning recipes for those who did not know about the Yonamoto Recipe Sharing, a series of designs from the recipe contest to food demonstration depicted in Figure 3.15 to refer to when they visit the community center.

All in all, communication is the key to design processes to comply with research questions respectively. Resources of tangible artifacts and human resources need integration to deliver value propositions to audiences. Artifact designs such as the recipe sharing board and flyers are vital communication tools as graphic illustrations to provide the residents an essence of maintaining health through healthy eating. Moreover, communication strategies such as the AIDAs Model and WOM help comprehend participants' mental models. Communication requires empathized listeners from both parties to deliver value propositions from one actor to another successfully.

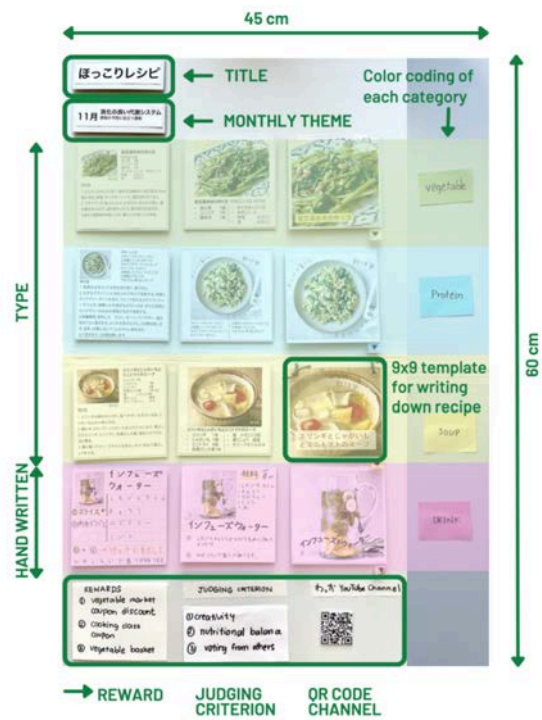
3.4.4 1st Prototype

Considering a challenge in communication as a foreigner in the former part, a discovery that a prototype is a solution conveys a design format that helps clarify through visualization. Prototype1 is a communication medium utilized to discuss with diverse actors. The prototype depicts a draft version of a recipe-sharing board exhibited during the recipe contest. From this phrase, other fieldworks conduct to acquire valuable responses from community volunteers, a nutritionist, and Wakka NPO assisting during the community market session. Arranging several fieldworks is crucial to discuss changes to recipe theme cards with recommended ingredients and the design of the recipe sharing board. The consequence of the following section is narrative piles of takeaways learned from interacting with myriad stakeholders.

On 9th September 2021, the purpose of visiting the community center was to attempt to convey a message of healthy eating through recipe sharing to community members. I brought amended recipe theme cards with recommended ingredients and the design of the recipe theme cards as communication tools that ease visualization overall design. On the left of Figure 3.16, it presents updated recipe theme cards complying with recommended ingredients mentioned by the nutritionist in the prior section. I amended themes complying with aging issues and



Recipe Theme Cards



Recipe Sharing Board

Figure 3.15 Yonamoto Recipe Sharing 1st Prototype

practicality to daily life. For example, the title called “Hotpot recipes to keep your body warm” with ginger during winter has an intention for simple recipes that do not require a lot of cooking utensils. From the community center leader and volunteers’ point of view, they noted that some residents do not have plenty of cooking utensils at home. Therefore, an easy cooking level with few steps and kitchen equipment would benefit and apply to the daily life of those individuals. A target group for this theme could tackle those male elderly who struggle with food preparation. Besides, recommended ingredients help boost creativity in cooking. For the Shufu elderly who cook for themselves or their families, those suggested vegetables and herbs trigger ideas for food preparation. The card would later be combined with the recipe-sharing board to create more inviting images for spectators.

On 28th October 2021, I scheduled to discuss with the director from Wakka NPO as crucial stakeholders for the recipe contest ecosystem. Another communication tool for visual representation besides recipe theme cards was a draft version of the recipe sharing board on the right of Figure 3.16. After listening to the research purpose of the recipe contest and sharing board, the Wakka NPO director commented that such activity could revitalize the market with more meaningful than just daily grocery shopping. Her opinions highlighted a service flow of the contest on three design concerns for recipe winner rewards, judging criteria, and Wakka NPO QR code for cooking class. For recipe winner rewards, she provided advice that a monthly activity could be too overwhelming. Quarterly intervals that match with community-free paper could be a suitable frequency. For judging criteria, she would rely on the nutritionist’s decisions. She explained that because the nutritional balance expertise and her connections with the inhabitants are rational as a judge. In addition, receiving a reward from the expert could boost the self-esteem of the winners. The director of Wakka NPO was not sure about the QR code for NPO cooking class as she did not know much about the digital capability of the Yonamoto elderly.

Another surplus point that the director noted about the design was the size of the board and template design. Due to a decline in capacity in vision, she recommended that the board needed enlargement. Furthermore, more handwritten templates, as most example templates were typewritten. Also, recipes without

images provided feasible appearances to contribute to their recipes. Colorful photos could be eye-catching illustrations to grab attention to look at the board. Nonetheless, printing out images could be a challenging task for seniority. For Wakka NPO's plan, she revealed that these recipes would contribute to her plan for opening a local shop selling products from the local's made goods in the future.¹²

On 9th November 2021, I visited the community center to consult the board design and recipe templates with the nutritionist. She has a similar comment about the size of the board that it should have a larger size or multiple boards placed in various locations of the complex. From the nutritionally balanced view, the nutritionist suggested that having subtopics would add a variety to sharing. Also, the subtopics represent a Japanese set meal that includes the main dish, side dish, miso soup, and rice displayed in Figure 3.17.



Figure 3.16 Subtopics of Japanese Set Meal

Findings from 1st Prototype

The first attempt at a tangible recipe board and recipe sharing templates helped convey a stimulation for healthy eating through the recipe contest. The board and sharing templates as media strive to deliver the value proposition that resembles a source of cultural exchanges through food for Yonamoto residents. The objective for the second phrase targeted participants' desire to set achievable healthy eating goals through food or cooking as a familiar task of daily living activity. The

value portrays as an analog specification of social media that heterogeneous capabilities in cooking skills, hometowns, and ability in using technology integrate. Besides, practicality in sharing with handwritten media and levels of easiness for food preparation with fewer steps or few cooking utensils aim to trigger a desire to share. Rather than printed photos to include as examples, appealing names and colorful graphics to depict recommended ingredients are more impactful motivations for creativity in daily food preparations. Exploration from rounds of visits to the community provides valuable insights into the design and continues the sustainability of the contest from various involved actors.

3.4.5 2nd Prototype

The second prototype is another draft version of the recipe-sharing board that involves changes from the first. Modification helps ease visual communication. Comments from numerous actors apply to the second prototype. Changes to the second prototype include the enlarged recipe sharing board, more handwritten recipes, and subtopics with vivid color-coded colors, as illustrated in Figure 3.18. Usage of bright colors as example recipes for eye-catching purposes and distinct appearances for the elderly who have difficulty differentiating types of recipes to share. The design follows graphic representation styles of other flyers utilized in other activities, such as a community cafe and community free paper depicted on the right of Figure 3.18. In another attempt for fieldwork on 13th December 2021, the community leader also recommended that colorful hardcopies could ease visualization as some seniors encounter declining vision due to aging. Colorful illustrations help identify or represent signs to point out important parts while reading. Figure 3.18

Another crucial point to highlight during the design process is considering interaction with the board and the subsequent design approach for the final design. Using magnets to adhere to recipes on the board remains from the first to the second versions of prototypes. For the second prototype, the nutritionist remarked that simple methods to attach recipes and the board needed a stable stand to support a safety purpose. Ingredient templates are required to combine with the board. Furthermore, the community leader noted that examples of written recipes appeared too accurate with measurement numbers. She stated that many peo-

ple tended to cook without accurately measuring. Thus, models with simplified cooking methods and an approximate unit as shown in Figure 3.19. Uncomplicated appearances are more appealing and with a friendlier and achievable task to complete for writing that the elderly usually think is a hurdle.



Figure 3.17 Yonamoto Recipe Sharing 2nd Prototype

Findings from 2nd Prototype

The following design approach focuses on interacting experiences with the recipe-sharing board. Three significant points still undergo improvement for the final design. Firstly, a method to attach a recipe on the board needs ease of use rather than magnets. Secondly, a stable supporting stand that matches users' eye level helps comfort while viewing and safety. The third underlines the design of sharing

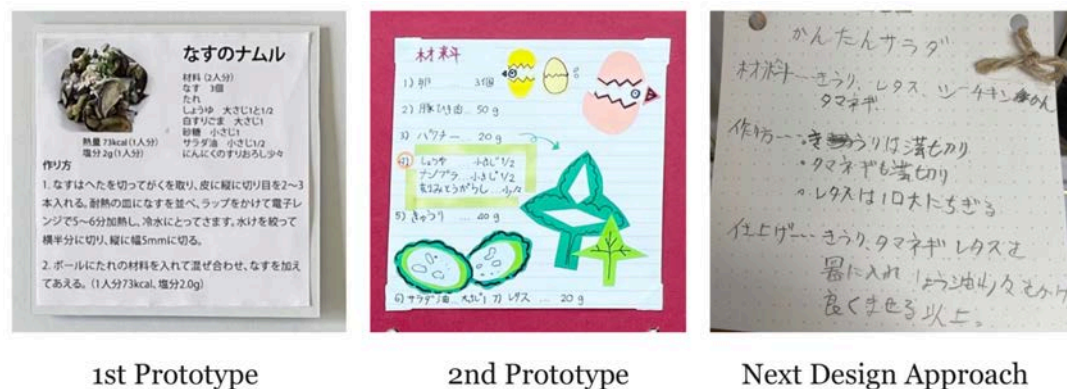


Figure 3.18 Design Development Progress of Recipe Sharing Templates

templates. Since writing often comes with a burden, the elderly have prioritized simplified cooking methods with less text than colorful template designs. Fewer steps with easy-to-follow cooking methods and approximate units for ingredients are more attractive to seniors. The uncomplicated design provides aging-friendly appearances which appear achievable to complete a task by sharing recipes.

3.4.6 Final Design

The crucial features are aging-friendly graphic representations to compare changes and add-ons made for the final design throughout the various prototypes. A large board is visible from the entrance door of the community center with a tripod supported hanging frames. The foldable tripod stand allows the recipe-sharing panel to be movable in different places. Moreover, the community center has limited spaces, thus quickly cleaning up areas after the end of the contest. Users can hang the recipes on the board with paper clips rather than adhere with magnets that do not have adhesive power. Combined components between a colorful roll of a recommended ingredient plate, a banner, and decorated items with cartoon encouragement quotes illustrate in Figure 3.19. Instead of having color templates for sharing, vivid subtopic templates are placed at the top of each roll for individuals to share recipes according to their preferences. It is notable from myriad fieldwork such as crafting and origami sessions that heterogeneous ages adore small endearing elements. Colorful decorations are everywhere inside the community

center with origami decorations. Furthermore, the comment from the community leader states that graphic elements add liveliness to the board. Therefore, having cartoon illustrations with cooking utensils attached with encouragement quotes to cheer people to keep healthy during the pandemic. Examples of quotes are “Stay active and eat healthily!” and “Vegetables with high vitamin C are recommended here by the nutritionist !”.



Figure 3.19 Design Development Progress of Recipe Sharing Templates

Other necessary supplements for sharing recipes are vital components to promote and drive the recipe contest. Firstly, the writing kit includes pens and a simplified version of recipe-sharing templates. The blank templates are a format of sharing for the recipe contest. Blank white spaces for the templates allow the elderly to use their creativity to fulfill the template. From observing their recipes for kid breakfast on a refrigerator at the community center, seniors tend to have bigger written fonts. Secondly, flyers help boost WOM about the recipe contest and food demonstration at the end of the recipe contest.

Lastly, another trigger to encourage observers to be a part of the recipe contest is to vote for their favorite rewards for the recipe contest. Although the prizes are not a real driven force for individuals to share recipes, they are a glimpse of motivation to share recipes and stimulate visitors to be part of the community activity.

Findings from the Final Design

The final design and cooperation with community members to help spread are crucial elements to drive the service flow of the recipe contest. Besides appealing visual graphics with colorful representations to create an impactful impression, an aging-friendly format for sharing is a key to gaining community engagement. With easy-to-understand instructions on flyers, templates with enough spaces to fill in their creativity, examples with easy-to-understand instructions, and a banner with large fonts, help ease visualization that represents a message of healthy eating to the residents. Another essence to complete the service flow of the recipe contest is cooperation from community volunteers that help co-create the board and gather people for the food demonstration through WOM. A solution to stimulate WOM is to gain trust from volunteers, and consistency in making visits is also vital for contributing to designing processes.

To conclude the design chapter, the goal is to deliver value propositions that tackle healthy eating to maintain food as a daily activity by re-experiencing recipes at home. During the pandemic, means of communication have shifted to online platforms, with no face-to-face interactions that bring about social isolation in heterogeneous generations, especially vulnerable groups. In this aging community, the elderly are aging in place, and most live alone. Their social environment is a key to helping overcome isolation interdependently. Due to their limited technological ability, slow technology plays a role in this sharing. With different levels of digital ability, people learn from one another by contributing to the board. Contents on the sharing board become a ticket to talk to spread and encourage each other to stay healthy during the pandemic. Besides rounds of adjustment for tangible artifacts that ease communication while expressing value propositions to stakeholders, communication strategies such as AIDAs Models help clarify the design purposes through comprehension of the involved actors' customer journey. Another factor that drives the service flow of the Yonamoto Recipe Sharing is gaining trust from community members. Constant visits and communication to integrate resources are also inevitable processes.

Chapter 4

Validation

The validation is conducted through experiments at Yonamoto Housing Complex in Chiba with focus groups who are vulnerable members and involved stakeholders. The results consist of two round experiments through a series of Yonamoto Recipe Sharing with sub-activities, including the recipe contests and food demonstrations. The rounds of tests intend to explore whether involved actors accept proposal value propositions. Validation includes three value verifications through collecting qualitative and quantitative data as pieces of evidence to prove hypotheses. Methodology ranges from records of observation, survey questions, and interviews. The experiments explore whether the design can trigger the importance of healthy eating in food preparation or grocery shopping for involved actors, including community visitors, volunteers, and nutritionists.

4.1. Methodology

Methodology for validation comes from two rounds of experiments with three sources of evidence to prove the above proposals:

1. Observation from experiments through rounds of recipe contests and food demonstrations uncovers a deep, rich understanding of individuals' thoughts and experiences through user interactions with the board or attending the food demonstration. Discovery through observation will be complied through the descriptions and graphic illustrations or photos to capture evidence scenes.
2. The interview to discuss potential future approaches of Yonamoto Sharing Recipe as a recreational activity for Yonamoto housing complex as one of the aging communities.

3. Feedback from survey questions that disclose insights from quantitative and qualitative data to be further analyzed through comparisons between from two rounds of experiments.

Overall details about the location, duration, and data collection methods display in the tables in Figure 4.1.

Regarding both round experiments that include the recipe contest and the food demonstration, the data collection starts from the recipe gathering procedure. The primary location for the first round of experimentation is the community center within the Yonamoto Housing Complex. The recipe collection lasts about six weeks, from 23 December 2021 to 15 February 2022. During this period, promotion of the recipe contest and food demonstration was at the community center along with activities such as a cafe session and regular opening hours to tackle time when there was an assembly of a group of residents. Following the food demonstration, the continuous course of Yonamoto Recipe Sharing recreational series activity on 11 April 2022. For the second round, the period of gathering recipes is five weeks which is a little bit shorter than before due to a limited time frame for the research. Advertisements for the contest and food demonstration were at various locations compared with the first round.

Participant observation is one of the methods used in an evaluation. According to the sociologist Goffman's study, participant observation is an effective way to learn about the community context and the locals' perspectives as advantages for a compatible design [103] [104]. Observed details include users' behaviors of users while interacting with the board and occurring conversations about the activity to learn about feedback from community visitors. Moreover, individuals' statements through on-the-spot observations and recordings reveal their mental models and insights about the design.

In the cases where observation is not possible, validations through questionnaires and interviews are applicable to yield results from the experiments, for the questionnaires and interviews as supporting evidence, following the structure of semi-structured interviews (SSI) by Adam and other scholars [105]. SSI style of questionnaires and interview questions blend closed- and open-ended questions accompanying follow-up feedback on why and how questions contribute to qualitative answers. Rather than a standardized survey or interview setting, SSI creates

casual conversations with a comfortable atmosphere to share thoughts or chance to discover breakdowns for design processes. From a foreigner's standpoint, SSI surveys and interviews allow meandering in dialogues when encountering indirect Japanese language.

Yonamoto Recipe Sharing 1

Experiment Round 1	Location	Collection Period	Collection Method
Recipe Contest	Promote at various places: Community center <ul style="list-style-type: none"> • Regular opening hours • Cafe session 	23 Dec - 15 Feb 2022	<ul style="list-style-type: none"> • Participants observation: Photos, Video taking • Interview
Food Demonstration	Promote at various places: Community center <ul style="list-style-type: none"> • Regular opening hours • Cafe session Demonstration location: Community center	11 Apr 2022	<ul style="list-style-type: none"> • Participants observation: Photos, Video taking • Survey • Interview

Yonamoto Recipe Sharing 2

Experiment Round 2	Location	Data Collection Period	Data Collection Method
Recipe Contest	Promote at various places: Community center <ul style="list-style-type: none"> • Regular opening hours • Cafe session • Community welfare committee meeting Land area support center <ul style="list-style-type: none"> • Dementia lecture Association office <ul style="list-style-type: none"> • Water bottle decoration Social welfare office: Poster& Flyers	11 Apr - 13 May 2022	<ul style="list-style-type: none"> • Participants observation: Photos, Video taking • Interview
Food Demonstration	Promote at various places: Community center <ul style="list-style-type: none"> • Regular opening hours • Cafe session Association office <ul style="list-style-type: none"> • Water bottle decoration Social welfare office: Flyers Demonstration location: Community center	6 Jun 2022	<ul style="list-style-type: none"> • Participants observation: Photos, Video taking • Survey • Interview

Figure 4.1 Lists of Locations and Data Collection Periods and Methods

4.2. Experiment Round 1: Recipe Contest

The following part is the thick description from an observation of the recipe contest from day one on 23 December 2021 to 15 February 2022 for the first round of the recipe contest. After brainstorming with other community leaders and nutritionists, all agreed on the title “Let us have balanced vegetables and protein to strengthen muscles.” On 23 December, an interpreter fellow and I went to the community center at 10:50 AM during a regular opening hour at the community center. I chose to arrive about an hour and a half before the closing time at noon. Thus we have enough time to communicate without interruption while delivering value proposition to listeners. We scheduled two main tasks today. The first was to set up the board, and the second was to explain the recipe contest’s purpose to other volunteers so they could help spread word-of-mouth about why sharing recipes is crucial. Diverse approaches from the observations portray that the design triggers Yonamoto dwellers to look, talk and learn from the recipe-sharing board.

4.2.1 Findings & Value in Context

Regular Opening Hours

The recipe-sharing board had an impactful first impression due to its size, visibility from the community center’s entrance, and vivid color decorations. It was a sunny day with good weather. The community leader and two volunteers helped serve drinks to four other regular visitors and students. When I fully assembled all components of the recipe sharing board, visitors started to take action by approaching in front of the board and starting a conversation about Yonamoto Recipe Sharing. Almost all of the people at the community center stopped their businesses and gathered in front of the board. From their reaction, I considered volunteers as stimulators to drive this recipe contest. The two volunteers approached us first and followed by three other visitors. From the observation, the board created appealing appearances that turned into a ticket to talk amongst the visitors, volunteers, and students, as illustrated in Figure 4.2. Audiences were curious about the activity. Thus we briefly explained a method of how people could participate by writing down the recipes on the recipe templates and at-

taching them to the board. The nutritionist would choose recipe winners on 1 February 2022. For today's visit, we aimed to achieve two goals were to deliver the purposes of the recipe sharing and the usage of templates along with recipe examples as guidelines.



Figure 4.2 Recipe Contest 1st Day on 23 December 2021

The impression did not last long until we mentioned writing as a method for sharing that the many perceived as a hurdle. From previous experiences, community activities such as diary writing workshops and community free paper content creators involving writing did not receive much attention from content creators. The same situation happened to the first introduction of the Yonamoto Recipe Sharing to the residents as well. Visitors' eagerness dropped when we mentioned writing as they walked back to their seats and left with volunteers who continued to listen for further details. From the community leader's comment, they revealed this unpopularity occurred as some senior visitors encountered a health decline in aging that caused them to have difficulties with writing. Moreover, the nutritionist stated that she met several aging dwellers who have hypertension from her past few years of working here and also in another aging community. From the nutritionist's explanation, hypertension symptoms bring about fatigue, confusion, and muscle tremors as challenges for writing.

Through design processes and this observation of individuals' behaviors, they reiterated that gaining trust from listeners who are community regular or irregular

visitors to obtain their engagement is a crucial factor. For rounds of fieldwork, we focused on communicating with the volunteers and the nutritionist. Therefore, we did not have a chance to complete delivering the value proposition of sharing recipes to co-create the board for healthy eating through health talk as a follow-up activity. Other audiences returned to their seats before we could talk more in detail. I discovered a breakdown of the experiment that needed a solution to solve while the recipe contest period lasted. Only left with two volunteer members were willing to spend more time and discovered something new to learn from the recipe-sharing board, as seen in Figure 4.2.

To tackle the breakdown, I utilized the AIDAs Model to communicate the value of sharing recipes with volunteer members. For this visit round, the targeted group was the volunteers as they could be better catalysts to spread WOM to visitors compared with students as newcomers to the community. The volunteers owned a vital benefit which is a trust with residents. Stronger bonds opened opportunities to transmit the purpose of sharing to vulnerable groups. Besides AIDAs communication strategy, I also had tangible artifacts, which are the recipe contest flyers, recipe sharing templates, and example recipes to help convey the value to volunteers who decided to spend a little more time listening about the contest, illustrated in Figure 4.3.

To tackle the breakdown, I utilized the AIDAs Model to communicate the value of sharing recipes with volunteer members. For this visit round, the targeted group was the volunteers as they could be better catalysts to spread WOM to visitors than students as newcomers to the community. The volunteers owned a vital benefit which is a trust with residents. Stronger bonds opened opportunities to transmit the purpose of sharing to vulnerable groups. Besides the AIDAs communication strategy, I also had tangible artifacts, including recipe contest flyers, recipe sharing templates, and example recipes, to help convey the value to volunteers who decided to spend a little more time listening about the contest.

Example recipes were ticket-to-talk that granted a chance for us to deliver the value of sharing to the volunteers. In Figure 4.3 on the right, the Job's tears drink (ハトムギジュース) attracted the crowd's attention as the Southeast Asian countries such as Singapore and Thailand referred to it as a sweet drink. Nonetheless, the volunteers revealed that Japanese people perceived Job's tears

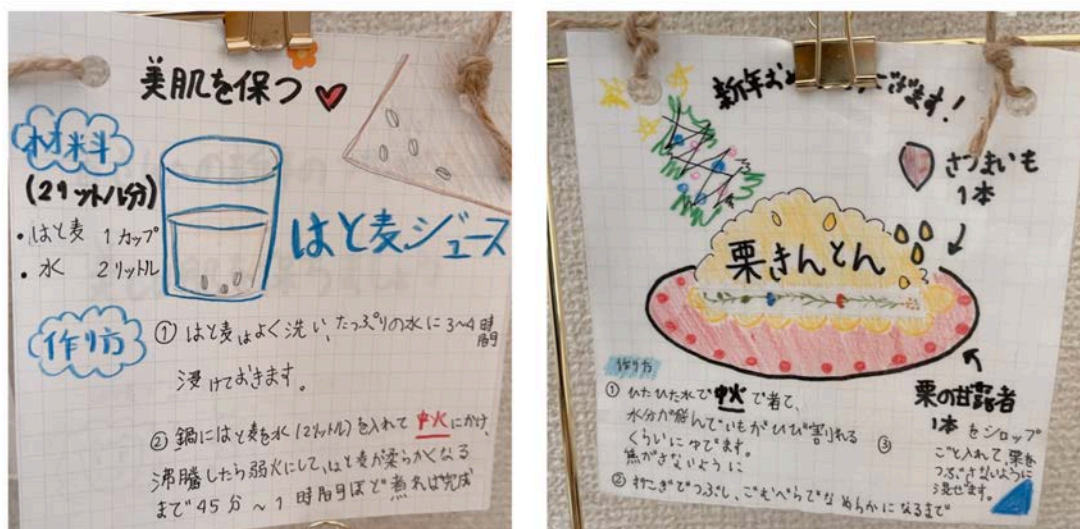


Figure 4.3 Example Recipes as Ticket-to-talk

as a tea rather than a sweet drink with ice added. They mentioned that this is a simple recipe and would love to try making this drink home. One of the volunteers took her smartphone and recorded the recipe to take a photo. She shared that she usually drinks Job's tears tea to keep her skin hydrated. Then, they moved on to talk about the candied chestnut with sweet potatoes (栗きんとん). It is one of the new year dishes that the Japanese eat during the new year as they believe it brings them luck. Both volunteers asked whether I knew the meaning behind the recipe as I am a foreigner, and they enjoyed sharing the Japanese culture through the dish's meaning. They told us there are seven new year recipes, but they did not fully remember all the meanings, even if they are Japanese. The volunteers could tell me five meanings, and the remaining two came from the help of visitors who eavesdropped on our conversation. The contest could turn into a cultural exchange through food. From the conversation with volunteers, I discovered that the timing to organize the recipe contest is also crucial. The seasonal greetings triggered an extended conversation amongst volunteers and visitors since the new year was approaching.

Through the talk, with the help of the ticket-to-talk and AIDAs Model, the volunteers perceived the value that the board is a source of exchanging cultural knowledge that can apply through their cooking as their daily life activity. They

then offered us help to hand out recipes to other visitors on days when we were not available at the community center. We distributed the flyers and recipe-sharing templates to explain the procedure of the contest that there would be a continuous chapter of the nutritional balance talk according to winning recipes as a course of activity after the recipe contest.

Cafe Session - Day1 (4 Jan 2022)

The cafe session at the community center is an advantage in promoting the recipe sharing as it is the session that includes various types of visitors such as regular, irregular visitors, and newcomers. The session opens every Tuesday from 1:30 to 3:30 PM. It was the second day of the re-opening day of the community center after a new year-long break from 27 December 2021. From what we had a chat with the community leader before the new year break, during the cafe session, there would usually be about 15 customers as the minimum number and 35 and above for the maximum number of visitors. Thus, the community leader recommended that we come to advertise the recipe contest during the cafe period. On 4 January 2022, during the cafe session, my interpreter and I went to check up on the progress on the recipe sharing board. For this round of observation, I planned to follow up on the number of recipes on the recipe-sharing board and also advertise the recipe contest to the community dwellers during the cafe session when heterogeneous dwellers came to enjoy spending their leisure time together at the community center.

The minor task was to seek an update on the recipe-sharing board. My interpreter and I arrived early, around 1:00 PM, when volunteers were about to get ready with their cafe uniforms. After greeting the staff, as usual, we checked the board immediately and saw three templates on the recipe sharing board, as depicted in Figure 4.4. Two of the recipes were in a side dish category, and another was on a recommended ingredient roll. The first recipe was pickled, and the second one was cucumber lettuce salad. Both had a similar level of easiness, even for those who thought they were incapable of cooking. They were a manageable level to follow from the recipe sharing. Another template on the board was the two recommended ingredients: Chinese cabbage ingredients for hotpot and Japanese leek for a stir-fried menu. The writer also noted that ingredients

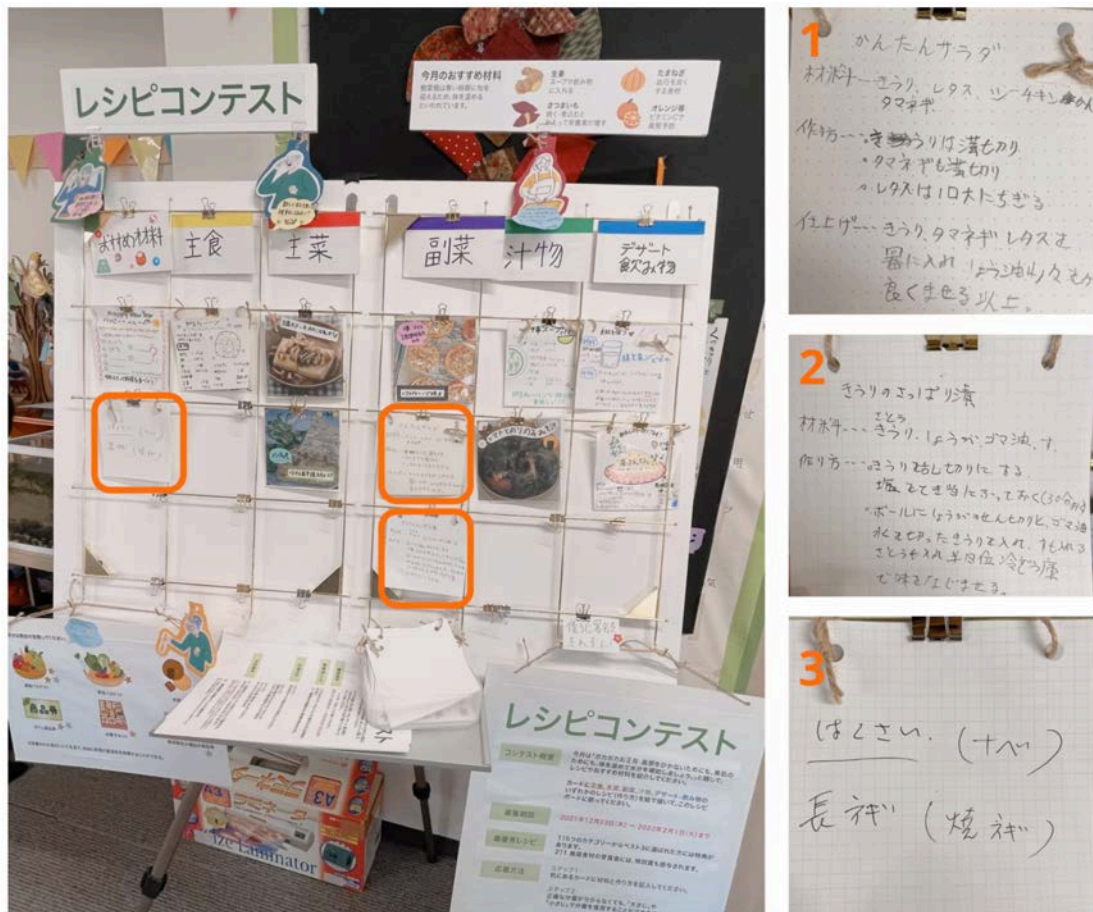


Figure 4.4 Progress of the Recipe Contest up until 4 January 2022

and cooking methods were compatible for winter. I added a roll of recommended components because individuals who were not so confident in their cooking could also share. These ingredients could also trigger other recipe board observers to think about new recipes, including Chinese cabbage or Japanese leek, to continue sharing recipes. Before the cafe session, we had a chance to chat with a community leader. She commented that the word “contest” in Japanese was a challenge that made individuals feel reluctant to share recipes as they thought their recipe quality might not qualify for standard contest quality. Thus, she suggested that we emphasize easiness while promoting the recipe contest to make people feel comfortable sharing. I learned that a keywording is vital to trigger or stimulate hesitance to engage in a community activity.



Figure 4.5 Recipe Sharing Template Update with Blanks for Name Filling

Another secondary task is to update a recipe-sharing template with spaces for names written. A volunteer in Figure 4.5 was curious about how to seek an owner of a sharing recipe. Hence, she suggested blanks for contestants to write their names or initials. She felt responsible for the task and didn't want to

miss anyone who contributed to the board. She was a volunteer, and we did not directly explain the Yonamoto Recipe Sharing activity using AIDAs Model. Other volunteers probably helped spread word-of-mouth about the recipe contest. She embraced the value of sharing. From her perspective, the processes of delivering value proposition to live interdependently through healthy eating.

Discovery from the cafe session, there were two types of customers an individual and another was a collective group, as illustrated in Figure 4.6. Both categories had different interactions with the one individual board. Individual visitors tended to look and turn their gestures toward the recipe-sharing board while waiting for someone to trigger the conversation. For gathering groups, members within the group influenced each other when making a decision. Discussion about differences in types of visitors will be further explained in detail later in chapter four.



Figure 4.6 Two Types of Visitors during Cafe Session

The primary schedule to achieve today was introducing the recipe contest to more residents who came to the cafe session. When we arrived, there were two irregular visitors, including a male and a female. Another person was a regular visitor to whom we introduced the recipe contest to her last year. We started by recommending a potential recipe provider by approaching the female senior as a potential contestant compared with a male visitor who relies on convenience stores

as their daily meals. In Figure 4.7, utilizing a set of AIDAs Model questions helped convey the importance of sharing that her recipe could benefit others. However, she was reluctant to share because she was concerned about drawings and photo printing. From this interaction, the design encountered another breakdown to find a resolution for this. An expectation for the cafe session visit was to gain more recipes. Since individuals are concerned about drawings and illustrations, example recipes should include ones with effortless designs to set an achievable task for potential participants. Instead of having vivid color example templates attached with photos, I should also have a mixture of the ones with basic designs. Hopefully, I could learn more from today's gathered recipes about how participants fill recipe templates. Gained recipes today would turn into references for others to share.

From a short fifteen minutes of observation, I learned from communicating with the visitors and volunteers that it takes some time to think about recipes for the contest. Sharing recipes by writing on the spot to share could be a challenge. Individuals would want to contribute their best when they knew that their recipes might get a chance to be published publicly on community free paper. In the second frame in Figure 4.7, the community leader cooperated with us by joining in the conversation and handing in a recipe flyer and a recipe-sharing template for potential contestants to bring back home and write a formula. From this experience, I learned a lot from her perspective as writing a recipe takes time for the elderly.



Figure 4.7 Promoting the Recipe Contest with AIDAs Model Question Set

During the cafe session from 1:30 PM onwards, individual customers who were irregular visitors interacted with the recipe sharing board as a ticket-to-talk. In Figure 4.8, a male and female elderly sat at the same table and kept staring at the board while waiting for the coffee. A volunteer came to confirm whether both did not need any sugar or cream. The female elderly replied by nodding her head while the male elderly emphasized by saying that “sugar was not good for health, I did not want any.” The female senior agreed by nodding her head. Although there was no verbal conversation between them, non-verbal language such as eye gaze and body gestures were an alternative representation of Japanese indirect language [106]. Judging from uttering words from the male elderly, I realized that he was aware of harmful intakes that could accelerate health declines.



Figure 4.8 Individual Visitors Looking at the Recipe Sharing Board

From an international students perspective, a limited ability to converse in the Japanese language was an obstacle that I stumbled over during a course of experiment exploration. From the above scenes, the recipe-sharing board offered an opportunity to communicate with the locals. Due to my inability to speak Japanese fluently, I missed chances to converse with residents to learn more about them, just as in the above scenes, to know more about their interest in the design. Since an interpreter could not accompany me to the Yonomato Housing Complex every time, I learned to analyze many individuals’ body language through observation.

Although I could not converse in Japanese well, the bonds with volunteers I have built since my first visit in March 2021 encouraged me to be more confident in my Japanese ability. The volunteer grannies always cheered me up every round of fieldwork I went. I felt as if I was a part of the community, even if I did not live in this community. From my experiences, my contribution to the community created a sense of community where community members accepted me. Examples of contributions were cleaning up the community center with volunteers or organizing the recipe contest for the residents. Giving hands for help could be anything, regardless of the little task of wiping desks and tables at the center with sanitizer to facilitate a food demonstration for individuals to learn about nutritional balance.

Another type of customer was a collective group with bonds between members who often gathered in a group when they visited the community center. An assembly of people at the community center turned the cafe session into an event for socialization amongst individuals and within collective groups. In Figure 4.9, the scenario scenes illustrated a series of interactions with the board of how a creative group encouraged each other to participate in the recipe contest. In scene 1, a member in the group looked at the board and was triggered by healthy recipe examples on the recipe sharing board. In Scene 2, she returned to her seat and desired to share her healthy recipe. She was trying to recall her memory to write down a recipe. However, she could not and started to search on the internet using her smartphone, as displayed in scene 3. The first simulator in the group then wrote her recipe and hung her recipe on the board. Her action triggered her peer, who sat beside her, and it granted an opportunity for my interpreter to introduce a recipe contest as depicted in scene 4. While enjoying their conversation, the lady in a brown jacket discovered we had something in common as her nephews were also from Keio University. She was glad to meet us and cheer us up with studying. Then, she decided to share a recipe and wrote down one for us in scene 5. Peer influence was a powerful impact as the lady circled with an orange circle and was curious about the deadline. She told us she would go back home and think about a recipe to share.

The second type of collective group was those with familiar faces who happened to sit together at the same table. The gathering of this group has a loose connection compared with the former group. In Figure 4.10, the table of this collective

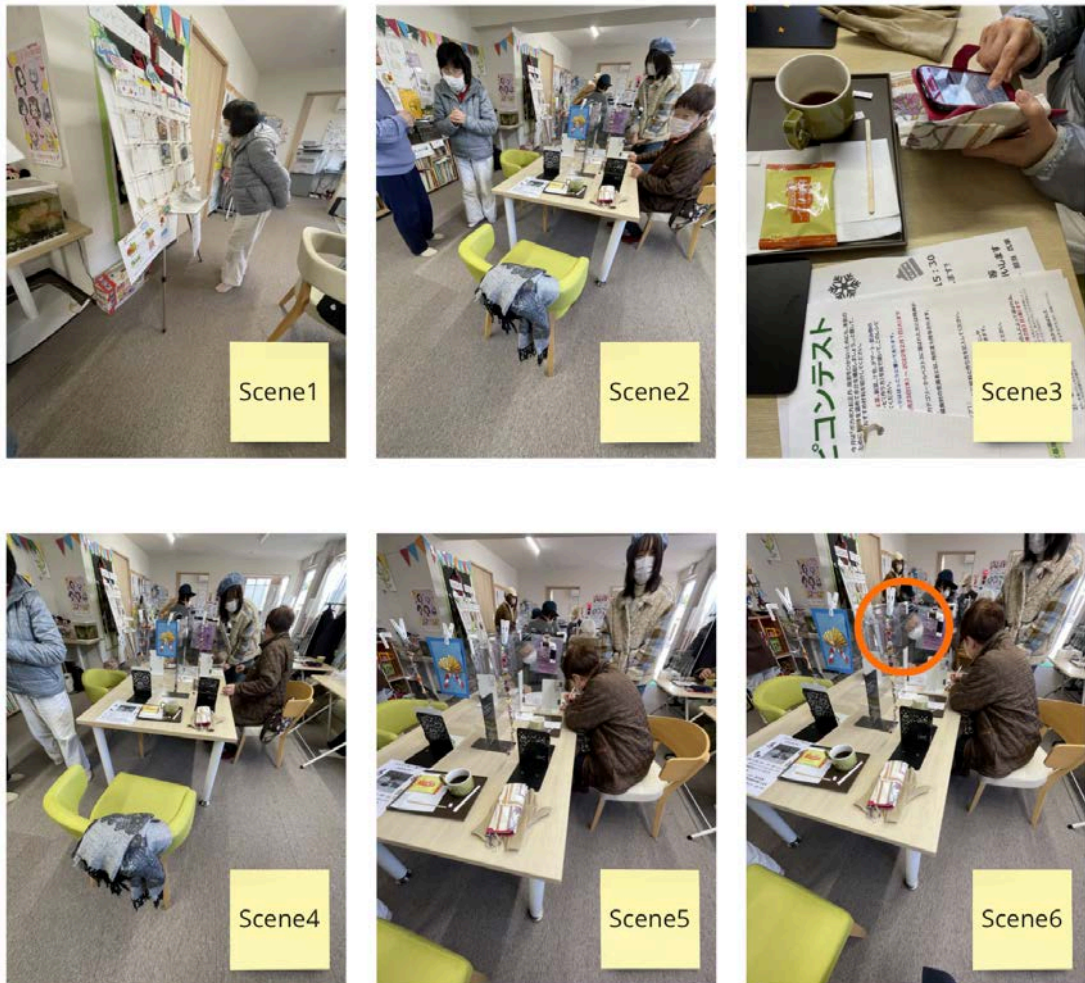


Figure 4.9 Peer Influence in Collective Group

group is confronted directly with the recipe-sharing board. Individuals in this table shared the table. Thus it offered a chance to introduce the recipe-sharing board to the group. The recipe provider shared her meatball recipe learned while working at a restaurant long ago. Since she struggled with writing, we helped her write a recipe template. While waiting for writing, speaker 1 revealed that she would want to try to cook at home. She told us that the elderly are vegetable-centric. However, the young are not as they prefer to eat meat or some fried food. Therefore, she had to make meals for herself and the young separately while preparing a meal for family members. It is also time-consuming to make different kinds of dishes. As the recipe from a recipe provider is easy to make and meat concentrated, she would like to try it. Speaker 2 also praised the easiness of this recipe that she tried to remember through a conversation. She repeated for clarification of cooking methods from the recipe provider and reiterated to ensure she got the right ingredients and amount of mixture. Speaker 3 stated that without the recipe contest, they would not know that her counterpart worked at a restaurant and learned a lot of recipes. The recipe contest triggered casual chat within a group of loose bonds by appreciating the recipe provider's contribution to their recipe lists and the community.

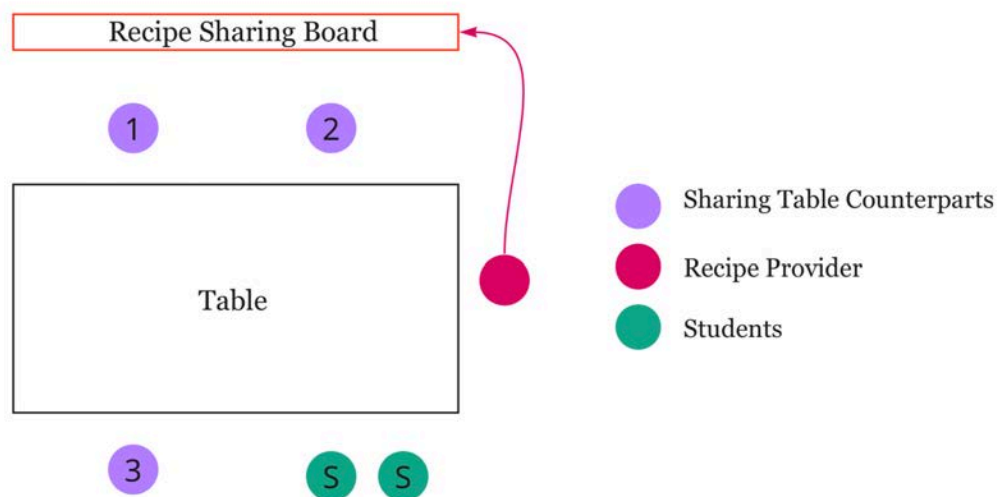


Figure 4.10 Interaction within Loose Bonding Group

For male visitors, I would label them as less potential parties for the recipe

contest. Through experiences of intersecting with male participants, many rely on convenience stores rather than cooking for themselves. Thus, my interpreter and I focused more on females with higher potential in sharing recipes, as many of them tended to cook every day. In Figure 4.11, we encountered male visitors in individual or collective group categories. To summarize their feedback, some did not cook as they did not have cooking utensils at home or more convenient to buy food or half-cooked food. Although they did not cook, it reminded them of those old days when they cooked for themselves during university days in a dormitory. A male senior shared that he used to cook spaghetti almost daily during his college days. After interacting with them, I learned that the recipe contest had a different value proposition than their female counterparts. The recipe contest could help reminisce about old memories as brain training.



Figure 4.11 Less Potential Parties for the Recipe Contest

Cafe Session - Day2 (18 Jan 2022)

Another round of follow-up to update the number of recipes on the board and monitor the recipe contest. In Figure 4.12, there were eight recipes in total on the board up until today, on 18 January 2022. Today was a sunny day again. I noticed from rounds of visits that weather is a significant factor affecting the number of visitors to the community center. My interpreter and I arrived around 1:00 PM, and there were already some individual visitors and collective groups who came early before the cafe session.



Figure 4.12 Progress of the Recipe Contest up until 18 January 2022

With experiences and comments from audiences almost a month since the first date of the recipe contest, volunteers promoted the activity to visitors that came to the community center. The first scene we saw after arriving at the community center was where the community leader recruited a potential contestant to participate by handing a recipe-sharing template along with a recipe contest flyer to a lady with a crimson red hat, depicted in Figure 4.13 on the right. In the middle of the figure, another volunteer recommended her friend participate by filling out the recipe card. Her friend sat down with the recipe-sharing template in her hands and another hand with a pen. She took a break for a while and thought about recipes for a few minutes before writing them down. The last image on the right of Figure 4.13 illustrated that volunteers also approached a collective group to advertise the contest that recipes can come from daily life or hometown dishes in case participants would want to share something unique. Over time, the volunteers gained more experience and could help spread word-of-mouth (WOM) about the essence of healthy eating as a part of daily life through food or food preparation.



Figure 4.13 Volunteers Promote Recipe Contest to the Visitors

From the volunteers' perspective, there were three core takeaways to underline through experiences of promoting for the past few weeks:

1. Reiterate that the name “contest” could be challenging as visitors thought shared recipes were at a high standard. Therefore, the community leader

suggested that shared recipes could be in a wide range from nostalgic dishes to daily meals with easy cooking methods.

2. People have various ways of searching for recipes such as magazines, online inheritances from families, or friends. Hence, the recipe context promotion should also include sources to guide individuals in recalling recipes.
3. Introducing the recipe contest to other places, not only the community center, could gain more potential contestants because different seniors had diverse preferences in joining activities at the Yonamoto Housing Complex. Thus, advertising in various locations might enhance opportunities to confront potential recipe providers.

Experiences of promoting the recipe contest increased over time, and community volunteers became experts with guidance to improve for the next round of the recipe contest. From overall observation from regular opening hours and cafe sessions, I saw a mechanism of how a cycle of volunteers organized amongst themselves with creativity in adding daily nostalgic recipes to gather recipes from heterogenous visitors. Furthermore, clarification ensured participants that the purpose of sharing did not emphasize high-quality recipes with complicated cooking methods but instead recipes that applied to daily life.

4.2.2 Value Validation

In total, for about seven weeks, all seventeen gathered recipes were collected from 23 December 2021 to 15 February 2022, shown in Figure 4.14. Contestants filled the recipe sharing board with a mixture of recipes with vivid photo printings and also ones without showing various abilities in technological skills. The nutritionist chose three recipes from seventeen recipes gathered during the recipe contest period. After brainstorming and discussing with the community leader and the nutritionist, they suggested holding a food demonstration (お披露目会) to alleviate the value of winning recipes to spread healthy recipes to more people. Consequently, interviews with the nutritionist, the community leader, and recipe winners were crucial to discuss the subsequent approach to food demonstration and the future direction of the Yonamoto Recipe Sharing as a series of

recreational activities to trigger healthy eating. From the discussion, the food demonstration consisted of a nutritional balance session and a food sampling of winning recipes explained in detail in later sections. Since more involved actors were recipe winners from the recipe contest, more rounds of communication about flyers and nutritional balance lecture contents were necessary to facilitate the food demonstration as a continuous series of Yonamoto Recipe Sharing.



Figure 4.14 All Gathered Recipes After the End of the Recipe Contest Round 1

Interview the Nutritionist (15 Feb 2022)

The nutritionist explains the coming up nutritional talk with food demonstration, which is a part of Yonamoto Recipe Sharing as a recreational activity to trigger healthy eating through food or food preparation. Moreover, her thoughts for the second round of Yonamoto Recipe Sharing are essential for design improvement.

Food demonstration as a continuous series from the recipe contest yields a more impactful value proposition to audiences because of an add-on of nutritional balance talk. In Figure 4.15, the nutritionist's selection of winning recipe criteria divided the winning recipes into three categories: uniqueness, variety with nutritional balance, and easy-to-find ingredients. The first recipe is stir-fried carrot with salted cod from a local dish from Aomori prefecture and stands out from the

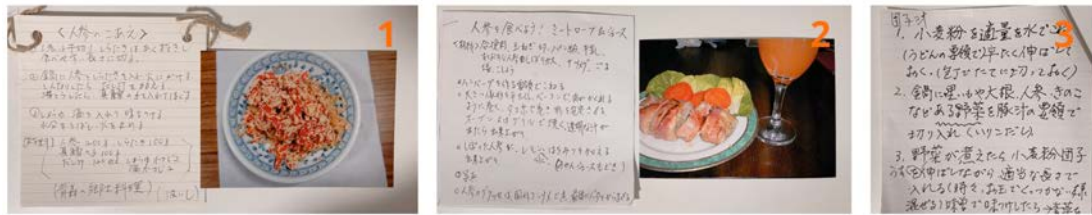


Figure 4.15 Winning Recipes from Recipe Contest Round 1

rest of the recipes. The second is Dagojiru (Dumpling soup), a local dish from Oita prefecture. Usage of ingredients is easy to find or adapt with other types of soup-based menus. Lastly, meatloaf with carrot juice is a dish that the younger and older generations could enjoy as it has a friendly appearance for kids who do not prefer to eat vegetables. The recipe has a well-balanced nutritional composition. Highlighting all three categories, she emphasized practicality the most for individuals to try to cook at home due to social distancing from the pandemic and the risk of dining outside, especially for vulnerable groups. She further explained that it would deliver more value to the contest by organizing a nutritional talk and recipe-winning food demonstrations to practice eating healthy at home.

During the pandemic, the nutritionist held an online cooking demonstration to offer during the lockdown period in June 2021 via zoom with a link on House Food Corporation's social media channels. The session sequence was irregular as there was no fixed schedule for the next round. About 8 to 9 participants joined the session for each round. She shared some insights that most participants were females aged 50 to 60 years old who spent their free time during social distancing to learn something new. A few males joined occasionally. Also, she heard from participants that more people, such as the living alone elderly in their 70s to 80s, desired to join the session but did not have internet access. Otherwise, they own no technological devices and could not enter the online event. Thus, audiences requested that joining offline would be more memorable as they could fully experience physically through smelling, observing, tasting, and more.

Since the current situation of the COVID 19 in Japan has gradually in a better condition compared with the spread in 2020 to 2021, she commented that the Food demonstration (お披露目会) would benefit many seniors at Yonanomo Housing Complex as the majority of the elderly are single dwellers. Moreover,

there are a limited number of people with the capability to connect to the internet or use technological devices at this aging complex. The current stage of the recipe contest was still not clear to her. Nevertheless, the recipe contest and the food demonstration would enable us to provide concrete value propositions to the residents. Food demonstration does not only embrace healthy eating but also socializing opportunities after a long term of strict social distancing.

Interview the Community Leader and Volunteers (15 Feb 2022)

Borrowing lenses of facilitators of Yonamoto Recipe Sharing broadened my horizons to explore and re-design more suitable for the elderly approaches at Yonamoto Housing Complex. The following part describes the interview with the community leader and her thoughts about the recipe contest and the subsequent course of the food demonstration. She revealed breakdowns and a lot of beneficial advice to improve for the next round of the recipe contest.

The community leader had a similar comment as the nutritionist that the purpose of the recipe contest was not so clear. Thus, the community leader acquired to reiterate the goal of the recipe contest. I explained that it was healthy eating communication enhancement through recipe sharing. Then, she expressed that visitors usually talked about food-related contents such as “I eat this vegetable this way” or “this is delicious when eaten this way.” During the current season, people sometimes mentioned, “I made fried rice with garlic leaves the other day, and it was delicious,” and others stated, “what did you put in it?” Or “well, I’ll try making it next time.” Such food-related communication happened naturally, but when it came to writing it down, the hurdle was relatively high.

From the community leader’s point of view, she did perceive the contest as a cultural exchange amongst heterogeneous residents in the community as dwellers come from various prefectures. Hence, she encouraged others to participate by promoting the recipe contest as an opportunity to represent individual identities to express their specialty. She also agreed with the nutritionist’s idea about the food demonstration to enhance community engagement. Since Yonamoto Recipe Sharing aims to trigger and spread healthy eating, the demonstration and a nutritional lecture would be a significant and beneficial event for the residents. Even before Corona, seniors enjoyed bringing their dishes and chatting about their

recipes.

If there was an announcement about a nutritional lecture along with the contest, the community ensured that it would trigger many people as Yonamoto senior dwellers very much pay attention to health concerns. As there were multiple activities to trigger healthy lifestyles with wide ranges, people joined based on their preferences regardless of physical or mental events. In her opinion, she thought that it was a challenge to get everyone interested in just displaying recipes. With the food demonstration, it was more explicit about representing a healthy eating approach to audiences, and people would help spread word-of-mouth (WOM). She added that such an event would provide many advantages to the elderly as they have difficulty searching for health content online to take care of themselves during the pandemic. She would love to continue to hold regularly with different themes. A quarter interval would be perfect and compatible with a community free paper issue quarterly.

The community leader advised that four weeks was the peak time for the recipe contest if there was another round. Nevertheless, after a certain period, the tension of the recipe-sharing board tended to drop as time passed after about a month. Viewers would no longer look at it if the contest duration were too long. If it was too long, visitors tended to forget and lose focus on the continuing part which was the nutritional talk over time. Hence, they did not see the value of sharing recipes. Besides recipe flyers for the next round, it would be better to include a nutritional talk and promote

Most of the recipe providers were usually regular visitors. On the one hand, some wrote down recipes as they were interested in cooking. Some participants felt they needed to take responsibility, knowing it was a student's project. Otherwise, some had alternative ways to interact with the recipe-sharing board. Even if people did not share, she revealed that they spent some time standing in front of the board and trying to read and memorize recipes in case they wanted to try cooking at home. Otherwise, the elderly came to take photos of the recipes using cellphones, or some took short notes to remind them when they wanted to prepare their meal. Thus, she suggested that people would love it if flyers were available to take back home. Also, students should promote to other places rather than just at the community center for the next round.

4.3. Experiment Round 1: Food Demonstration

Food demonstration (お披露目会) is a continuous series from the recipe contest through Yonamoto Sharing Recipe. On the demonstration day, participants have a chance to listen to a nutritional balance lecture, observe healthy winning recipes guaranteed by the nutritionist and try food sampling. The activity intends to scaffold learning new skills through observing the event day that helps trigger the desire to apply healthy eating through food or food preparation as one of the daily activities.

4.3.1 Findings & Value in Context

Recipe Day: Recipe Award Ceremony (15 Feb 2022)

The nutritionist led the award ceremony portrayed in Figure 4.16 for the recipe winners and reiterated the reasons for each winner. Thus, winners and also surrounding audiences also could learn from winning recipes. Surrounding people were very respectful by stopping whatever they were dealing with and giving the winner applause. A visitor gave a new name for the award ceremony as “Recipe Day,” and others started adopting the name too. Recipe Day became a day everyone at the community center appreciated for contributing to the community through public eyes. Since the demonstration day was approaching on 11 April 2022, the community leader asked for cooperation from the recipe winners to help demonstrate their dishes. The food demonstration would be a co-creation event. Thus, there would be recipe winners and volunteers side by side. Even if recipe winners were shy about public speaking, volunteers would help facilitate on their behalf.

Through the interview and her self-experience of sharing recipes, the community leader could fully perceive the recipe contest’s value and sought a resolution to help promote the second round of the recipe contest. She was willing to publish on the community free paper to advertise without any request made. Since she comprehended that there was a need to amplify the voices of more recipe providers, she kept handwritten winning recipes for the next issue of the community free paper content for the following publication. The recipe contest page was on the February issue in Figure 4.17 to advertise to more residents. Also, the notice



Figure 4.16 Overall Atmosphere of Recipe Day

board nearby the bus stop in front of Yonamoto Housing Complex has a free paper displayed to invite more visitors to join various activities, including the recipe contest.

Preparation for the Food Demonstration Day

Another task to complete on the Recipe Day was to discuss with the nutritionist the theme for the food demonstration and set a new theme for the recipe contest. Since it would be the first round of the food demonstration, she suggested that having a general topic that is necessary for vulnerable groups would be helpful to many as an introduction for more people to get to know about Yonamoto Recipe Sharing. Her recommendation for the nutritional talk theme was “What is the nutritional balance?” along with a subtopic “Let us have enough protein and vegetables!”. An emphasis is on protein intake as it is challenging to maintain muscle conditions amongst the elderly. Since protein is a source to help build or strengthen muscle, seniors need enough protein to maintain physical health. From her comments, an insufficient amount of protein intake affects balance and also loss of the ability to walk. Muscles decline due to aging, and healthy eating is a solution that helps muscle reinforcement for walking or any physical movement. The fundamental theme allows all to relate to the given lecture easily. Besides, they could learn, appreciate, and be inspired by winning contestants who



Figure 4.17 Recipe Contest Round 1 on February Issue of Community Free Paper

contributed to the demonstration.

Since food demonstration is a co-creation activity involving multiple actors, several discussions for flyers as a crucial artifact to invite visitors to food demonstration were necessary.

Preparation for three types of flyers for this round of food demonstration:

- Food Demonstration
- Recipe Contest Round 2
- Winning Recipes

My interpreter and I went to discuss flyers with the nutritionist, recipe winners, and volunteers about details of flyers for further improvement, as shown in Figure 4.18 on the left. Figure 4.18 displays the developed flyers for the food demonstration and the recipe contest. Usage of images rather than illustrations on flyers help the elderly understand easily. Moreover, vivid colors help differentiate details and make them easy to read for seniors.



Figure 4.18 Recipe Flyers for Food Demonstration & Recipe Contest Round 2



Figure 4.19 Recipe Flyers for Food Demonstration Round 1

There would be three winning recipes on the demonstration day through the co-creation of volunteers and recipe winners shown in Figure 4.19. Before the demonstration day, one of the recipe winners said she could not guarantee whether she could find salted cod on demonstration day and decided not to demonstrate. Nonetheless, with encouragement from volunteers and students to assist, she decided to change her decision and present the dishes. Cooperation in the team helped overcome challenges.

Beginning with the nutritionist's lecture slide, the nutritionist cooperated by sending her lecture slides to print out before the demonstration day. Other documents besides flyers included the nutritionist's lecture slides, facilitator scripts, and updated recipe-sharing templates shown in Figure 4.20. Since I am an international student who could not speak Japanese fluently, I needed a script that I brainstormed with my interpreter. Lastly, the new recipe sharing templates with blanks at the back for healthy eating recommendations or cooking tips unless people for recipe providers of the next round in case they want to share.

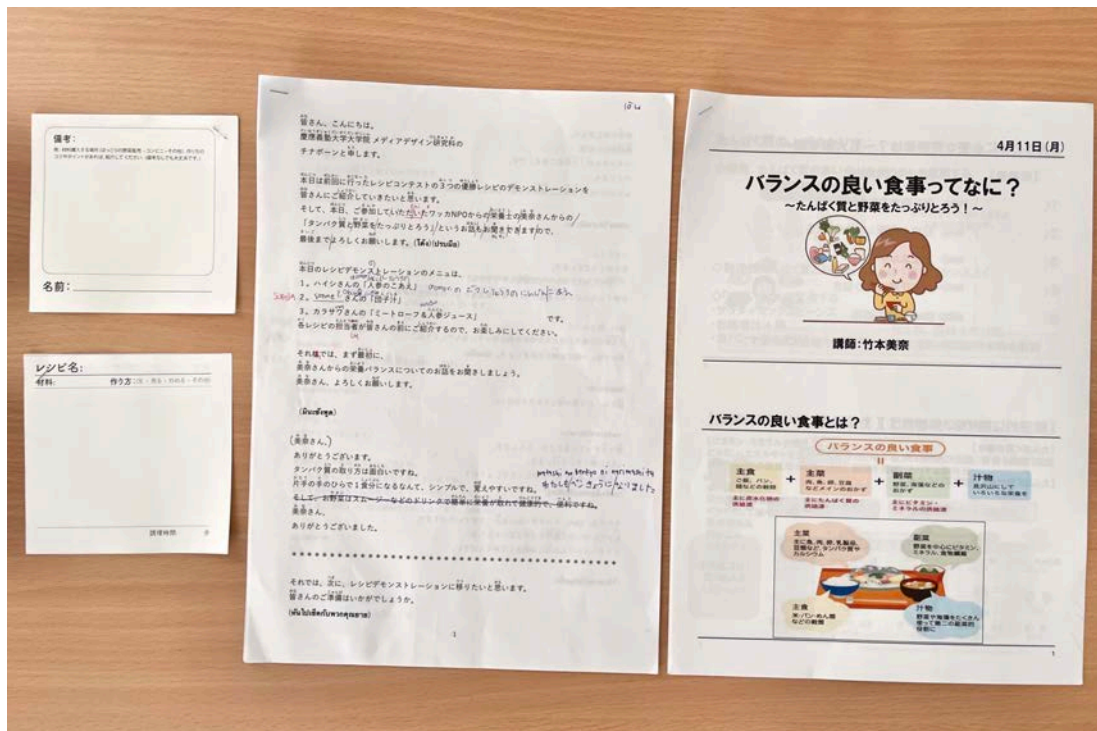


Figure 4.20 Additional Documents for Food Demonstration

Through observation during displaying invitation food demonstration flyers to the community visitors on 28 March 2022, they quickly gathered around the table, as seen in Figure 4.21. They promptly reacted by signing their names on a signup sheet after hearing that a limited number of participants was allowed. Seniors were curious about who would host the nutritionist talk. After they heard that the nutritionist from the House Food Corporation would be a speaker for the talk that day, they spread WOM by calling their peers to sign up too. In my opinion, they have scaffolded bonds for about two years with the nutritionist and trusted her. It could create a casual atmosphere as the community market where they could freely ask without hesitation. Nevertheless, the difference was that they could have food sampling and a more formal lecture with slides rather than just conversational about health. Yonamoto dwellers felt comfortable and entrusted to communicate with her, bringing about a lot of participants that exceeded the limit number.



Figure 4.21 Sign Up for the Food Demonstration

4.3.2 Value Validation

To investigate how the food demonstration can trigger healthy eating among both regular and irregular visitors, an observation through behaviors and responses to the nutritionist lecture, the food demonstration, and promotion of the recipe contest round 2 towards the ending of the event reveals how individuals react to the

overall Yonamoto Recipe Sharing. Survey questions at the end of the food demonstration expressed people's satisfaction with today's activities and their desire to experience recipes at home. Furthermore, the survey measures the potential in applying or adapting learned skills from the nutritionist and volunteers in daily life tasks such as food preparation or selected choices of ingredients while grocery shopping. Besides, interviews with involved stakeholders reiterate thoughts and feedback for the activity for future approaches in the next round.

Observation through the Food Demonstration Day (11 April 2022)

From the outline schedule of the food demonstration, the event flow would follow from the list below. Overall the food demonstration took 1 hour 30 mins and will cover contents intended to trigger healthy eating in audiences.

- Nutritional Balance Talk (20 mins)
- Food Demonstration for 3 Recipes (60 mins)
- Food Sampling & Recipe Contest Round 2 Announcement (10 mins)

Observations uncover responses through individuals' behaviors to validate whether the nutritionist talk is an influential factor in triggering a desire to eat healthily. The following section is the descriptive investigation of the interaction between the nutritionist and the audience during the food demonstration on 11 April 2022 at 2 PM.

On the food demonstration day, my research teammates and I arrived about 1 hour and 30 minutes before the starting time. The first scene in front of the community center was where people gathered in front of the entrance, waiting to get inside as we had to check their temperature and sanitize hands with disinfecting alcohol. While waiting, a visitor introduced her friend as a passerby at the community center about the food demonstration. Her friend changed her approach out of the blue and wanted to join the food demonstration. Since it was a sunny day, many people arrived early to avoid hot temperatures. Volunteers readily dressed up with green aprons. Today was a special occasion as they had a dress code with matching vivid headbands to illustrate their teamwork, each with bandana headwear portrayed in Figure 4.22.



Figure 4.22 Matching Dress Code to Represent Teamwork

The event flow began with the greeting for the food demonstration opening, and I was in charge of this. Although I am an international student and cannot speak Japanese fluently, the elderly tentatively listened. Volunteers also cheered me up by telling me to read the script slowly and not have to worry about making mistakes. Encountering the first scene highlighted cooperation to facilitate the demonstration with the locals. From past experiences, the community volunteers have strong bonds with visitors. They often encourage each other to join various activities in the community through word-of-mouth (WOM) which is a crucial factor for a healthy aging environment and living interdependently. Hence, there were more people than I expected.


Consequently, the nutritional balance talk included two-way communication as the nutritionist designed her lecture to be an interactive lesson. Rather than a regular one-way lecture, as usual, the nutritionist preferred to have interactive responses with listeners during the study to ensure that they perceived her talk. From her working experiences with the elderly, a two-way communication strategy was a practical approach to keep the listener's attention [107]. Thus, she left blank her slides for participants to fill in so they could recollect their memory as mental training for vulnerable groups prone to temporary memory loss as they age. The blanks in Figure 4.23 were an indirect way to communicate with audiences. When

seniors could not remember, they tended to ask their peers around to help each other. Otherwise, they raised their hand and asked the nutritionist a question. On the right of Figure 4.23, it displayed that audiences were trying their best to fill in the blanks.

みんなの体に必要な栄養素は？～五大栄養素～

【栄養素】	【体の中での働き】
①()	→ 体を動かすエネルギー源
②()	→ 筋肉や内臓など体をつくる
③()	→ 高エネルギー源
④()	→ 体を正常に保つ働き
⑤()	→ 体の機能の維持

健康な体を作るためには、これらの栄養素が必要になります。



(Source: 美奈竹本, “ほっこりレシピお披露目会,” ほっこりレシピお披露目会 (April 11, 2022).)

Figure 4.23 Recollecting Memory by Filling in the Blanks

Another interactive section used palm-size to estimate the amount of protein intake. Eavesdropping from the elderly, participants mentioned that the nutritional palm trick was practical in daily life as individuals usually cook with an approximate sense without measuring tools while cooking meals. Audiences focused on printouts and followed gestures on the printout. People who sat near the nutritionist could look at her as a reference. In Figure 4.24, her slide also included examples of food such as bread, chicken salad, and mixed beans, which were common ingredients often used for simple recipes. Moreover, such estimation is compatible with seniors' nature of cooking with senses and long-term experiences in cooking.

During the nutritional talk, the nutritionist corrected Yonamoto dwellers' misunderstandings about a healthy balance. Listeners raised two crucial remarks. Since some audiences relied on simple recipes with eggs as ingredients, a participant said she ate three eggs daily. Nonetheless, it provided a chance for the nutritionist to clarify the correct way to consume eggs for vulnerable members

たんぱく質の上手なとり方

◇毎食、たんぱく質の多い食材を使うことを意識する

魚・肉・卵・大豆製品



片手の手のひらの大きさが
1食分の目安です。

◇動物性たんぱく質と植物性のたんぱく質をバランスよく

◇「ちよいたし」で工夫する

- ・サラダ+ミックスビーンズ
- ・お味噌汁+卵
- ・食パン+サラダチキン

- ・豆乳+きな粉
- ・和え物、煮物+サバ缶
- ・間食でチーズやヨーグルト



(Source: 美奈竹本, “ほっこりレシピお披露目会,” ほっこりレシピお披露目会 (April 11, 2022).)

Figure 4.24 Palm-size to Estimate the Amount of Protein Intake

that one per day is ideal. Another misunderstanding was the amount of vegetable intake per day. As the locals here already have basic comprehension to maintain a healthy lifestyle, some tend to overtake about 500 g daily. However, the nutritionist suggested that 350g per day is a suitable amount. Balanced consumption of vegetables and also protein is still essential. Over-consumption of eggs or vegetables could also yield some drawbacks. Proceeding to the second phase, recipe winners and volunteers facilitated the food demonstration. Before the food demonstration, both cooperated to purchase necessary ingredients from a supermarket in the morning together and prepare the essential cooking tools. Most ingredients came from donations such as rice, unsold vegetables from the community market, condiments, and seasonings from the community center. All cutlery sets, plates, and cups are already available at the community center. Some visitors and recipe winners also helped drought ingredients from their farms, as some are agriculturists. When they heard that there would be a food demonstration, some of them brought surplus vegetables or kitchenware to give hands for help. Volunteers and community members prepared some parts of the cooking, so the food demonstration a half-cooked for effective time management. The food demonstration was a co-contributed activity with corporations amongst commu-

nity people.

Three recipes for the food demonstration opened a stage for the locals to present their specialty and identity through food. Starting with the first dish was the stir-fried carrot with salted cod, a local dish from Aomori. The nutritionist recommended a recipe as its uniqueness also its easiness in preparing with fewer ingredients. The recipe winner almost gave up on her presentation for the demonstration as she was worried about difficulty in finding special salted cod from Aomori as she desired for people to taste the original dish from her prefecture. Therefore, the first version of the flyer only promoted two recipes without this recipe, shown in Figure 4.25 on the left. Encouragement from visitors, volunteers, and students drove her desire to participate in the food demonstration by adapting to available salted cod that she could find. The dish was effortless to cook with a few steps. The smell of the ingredients was very mouth-watering, as mentioned by some audiences. Many people praised her recipe and would want to try to cook this recipe to get a glimpse of Aomori taste at home with available salted cod within the area rather than the original ingredients from Aomori.



Figure 4.25 1st Recipe: Stir-fried Carrot with Salted Cod

The second is Dagojiru (Dumpling soup), a local dish from Oita prefecture. The nutritionist rewarded this menu as its ingredients are easy to find. Although it is a local dish from Oita, individuals could also cook and have Oita taste at home by adapting to other preferences of soup-based menus. In Figure 4.26, the speaker presented how to make Dagojiru dough with help from volunteers and also an audience who offered help to clean up surrounding areas of the demonstration spaces. During the food demonstration, a person mentioned that it could be

challenging if she had to make a dough by herself. Then, another audience shared that she saw Dagojiru set at the supermarket this morning, and intrusions were simple to follow as inside a package included premade dough. From this scene, I could see an exchange in resources of locations where the locals purchase food weather rather than just food preparation or the recipe itself. Interaction through interchanging necessities in life was a stimulating social environment for the aging community that Yonamoto residents live independently by sharing.



Figure 4.26 2nd Recipe: Dagojiru (Dumpling soup)

During the demonstration, individuals had myriad ways to keep a record of the food demonstration. A person walked closer to have a better view and returned to share what she saw with her friend and wrote a note. The recipe winners also recommended those who sat far away to approach closer if they wanted close-up views, illustrated in Figure 4.27. Another person felt hesitant to walk as she might block others' views, so she used her cellphone to record the food demonstration depicted in Figure 4.28. Besides taking videos, audiences had alternatives such as taking notes and photos to recall tips and cooking methods from the recipe winners.

Lastly, the meatloaf with carrot juice has a well-balanced nutritional composition of protein and vegetables. The main ingredient for this menu is carrots that came from a donation from visitors who are agriculturists fresh from her farm. They had some agricultural produce surplus, so they shared carrots at the com-



Figure 4.27 Approached Closer for Better Views



Figure 4.28 Various Ways to Keep Records of the Food Demonstration

munity center. The recipe winner of meatloaf with carrot juice was selective about her food choice. She enjoyed cooking and knew a lot of tips for cooking and preserving vegetables in a fridge to lengthen a period of its shelf life. Since her carrot juice recipe was pure handmade juice without adding water except for a little bit of honey, it took some time to complete. Thus, she entertained audiences with her tips for cooking cabbage in numerous ways depicted in Figure 4.29. When purchasing a cabbage, the size could be too big for single dwellers, and sometimes individuals could not finish and needed to throw it away. She shared a day with cabbage with different methods for cooking cabbage to reduce the chances of food waste. Listeners were clapping for her for useful tips and in-between time talk. Thus, they did not feel bored while waiting for carrot juice.



Figure 4.29 3rd Recipe: Meatloaf with Carrot juice & Cabbage Cooking Tips by a Recipe Winner

In another repeating scene, the same audience as a helper during Dagojiru readily also gave hands to help volunteers during the meatloaf demonstration and also distributed samplings into portions for other participants. While other volunteers were organizing paper bowls, the participant who sat near the food demonstration desk again helped volunteers. She turned into one of the volunteers shown in Figure 4.30.

The food sampling and the announcement to promote the recipe contest round two were the last activities of today's food demonstration. While waiting for food sampling, audiences started to communicate with one another. The first



Figure 4.30 Participant Joined Volunteers for Help



Nutritionist & audience



Audience & audience



Volunteer & audience



Volunteer, audience & students

Figure 4.31 Different Cases of Interactions During Food Demonstration Day

case was when the nutritionist interacted with participants. The second case was a conversation amongst participants. The third was that both a volunteer and an audience enjoyed talking with each other. Lastly, the food demonstration triggered a conversation between newcomers as students to interact with the locals. In Figure 4.31, the volunteer and Yonamoto resident asked which country we came from, and we continued to talk while waiting for food sampling.

After the food sampling ended, we introduced the second round of the recipe contest for people to participate. In case they could think of any recipes after today's activity that might trigger their interest in joining the next round of the recipe contest. From a recommendation of the community leader, I attached the recipe-sharing templates with today's flyers for participants to bring back home, displayed in Figure 4.32. Also, the recipe sharing board with some recipe examples to show as references for observers.



Figure 4.32 Artifacts to Promote the Recipe Contest Round 2

To summarize, food is a center of social gatherings that brings individuals together to learn about healthy eating with corrected nutritional balanced values and scaffolding community networks to stay interdependently in this aging community. Other similar scenes mentioned earlier with more audiences gave hands for help by distributing food samples and chopsticks, collecting surveys, and cleaning up tables. Cooperation amongst audiences occurred without any requests.

Throughout the whole series of observations, I learned that Yonamoto Recipe Sharing helped scaffold loose interaction amongst heterogeneous audiences such as volunteers, the nutritionist, Yonamoto residents, and newcomers as students through food.

Interview: Nutritionist

On 28 April 2022, we had an online interview for the nutritionist's thoughts about Yonamoto Recipe Sharing for both parts: the recipe contest and food demonstration. The discussion focused on discovered breakdowns and improved approaches for the coming up round of an experiment for Yonamoto Recipe Sharing. Furthermore, the nutritionist suggested a direction of how to run this service into a sustainable approach by highlighting healthy eating in daily life. Practicality in daily activity is the key to proposing value to Yonamoto residents to carry on Yonamoto Recipe Sharing.

To begin, we discussed the criteria for selecting the recipe winners for each round. Regarding this, the nutritionist would emphasize whether the contestant's recipes incorporate creativity following each theme. Since she also helped me develop the theme for the second round of the recipe contest, the criterion for the next round would be the creativity to make it easy to cook. For example, a device to shorten the cooking time and recipes with a few ingredients are possible recipes that would appear on the board for the coming round.

The nutritionist chose the theme of speedy and easy meals for the second round of the recipe contest to emphasize practicality in daily life as many seniors live alone. They either rely on convenience store food or easy recipes to dwell. Thus this would benefit a lot of people's lives to attract the attention of single dwellers as a target group. Moreover, she has heard from various elderlies that it is a challenge to cook only for oneself as they have to encounter a lot of leftover ingredients, limited capability in cooking levels, and thus no desire to cook. The nutritionist commented that the residents would appreciate something simple and quick that could turn into a catalyst to trigger Yonamoto residents to join the recipe contest and food demonstration.

Following the second round of the recipe contest, it will also be the second round for food demonstration. Since the first round of the recipe contest, the nutritionist



Figure 4.33 Participants Facilitated the Food Demonstration in Different Tasks

encountered schedule conflicts while preparing slides for the food demonstration. Hence, she suggested that we could discuss it ahead of time for preparation processes. The next topic we discussed is a possible theme for the food demonstration in that people are interested. The nutritionist revealed from her working experiences with various aging communities that an aging population has similarities in health declines. The popular deteriorations that aging people often confront are osteoporosis and hypertension. She explained osteoporosis as a decline that causes weakness and easily brittle bones. Hypertension is a common condition for those with high blood pressure that cause symptoms such as fatigue, blurry vision, and dizziness. From these common points, the nutritionist commented that there is a possible opportunity to apply the design of Yonamoto Recipe Sharing in other communities by taking Yonamoto as a role model to launch the activity.

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From her standpoint about the nutritional balance talk, she would prefer if she could interact with listeners, especially after the critical stages of the pandemic have lifted. Long-term social distances cause social isolation for some sin-

gle dwellers. Rather than speaking one-sidedly, it is better to give participants a chance to think. She then added blank spaces for audiences to fill in so they could also recall contents learned during today's talk. Similarly, the palm-size estimation is an interactive way that individuals could easily follow her gestures and practice by applying them to their food preparation processes. She occupied those slides as she intended people to listen to her lecture carefully and increase their sense of participation.

Interview: Recipe Winner

On 17 May 2022, my interpreter and I had an interview with recipe winners to receive their feedback about the overall activities of Yonamoto Recipe Sharing, including the recipe contest and food demonstration. Both are the first-round recipe winners and participate in the second round of the recipe contest. The winner of stir-fried carrot with salted cod stated that she learned from her mom when she was young, back when she still lived in Aomori. Another winner from meatloaf with carrot juice created recipes based on her experiences as a long-term housewife. She explained that she enjoyed being creative and explored her dishes at home. For the first contest, she added carrot juice to her recipe-sharing template because there might be some people who also encountered family members who did not like carrots. She knew carrots have high nutritional values as she attended a similar health talk before and wished her household counterparts to enjoy eating carrots with less hesitance. Thus, she made carrot juice and meatloaf for everyone in the family to enjoy.

One of the crucial factors was that the winners felt pleasure from the food demonstration. As of now, many enjoyed their recipes and said they were delicious. Their recipes benefit the health of others, not just their family members. They were glad that they could help others. However, the winner of the meatloaf recipe did not know how many people would attend in advance, so she could not prepare enough. She felt pity for those who did not have a chance to try food sampling. Hence, she preferred to know the number of participants in advance for the next round. She wanted to prepare for all.

Since we are currently recruiting people to participate in the second round of the recipe contest, we want to hear more about their suggestions. First of all, they

think that a limitation in places to promote was a challenge. For the community center, most visitors were regular visitors with familiar faces. Thus, the number of potential recipe providers was also restricted. Moreover, one of the recipe winners added that word-of-mouth (WOM) was more impactful than printed materials.

Regarding the frequency of the meetings, they commented that maybe once a season could be appropriate to match with an issue of community free paper. Since there are already many events, the welfare committee members would have a heavy workload if Yonamoto Recipe Sharing occurred monthly. Even once every two months is too much because they already have a lot of various events.

Food Demonstration's Audience

Another interview was on 19 May 2022, my interpreter and I had an interview with a food demonstration audience. She enjoyed everything about the food demonstration and desired to have such activity regularly as she tended to forget easily. Flyers could somehow help recall memories. Despite looking at them again, she forgot quickly. Thus, a repetitive session of food demonstration with health talk benefits her, many elderly, and other generations.

For her background, she is a single dweller who emphasizes her health maintenance more on physical exercise. She plays Kendo once a week to stay active. She mentioned that she enjoyed Kendo because she had a chance to meet with heterogeneous generations. Kendo allows her to interact with the young as she can teach them to be better at Kendo. A benefit of being surrounded by the young is that they stay active all time, which encourages her to be enthusiastic in doing Kendo too.

From her mental model in Figure 4.34, she comprehended that exercise without healthy eating means nothing. She believed in maintaining health inside out regularly along with healthy eating. The nutrition session was practical and benefited many aging people. She revealed that people in her age 80s, there are those types of people who do not enjoy going to health checks regularly as it is a time-consuming process. She does not have a fixed schedule for a health check and gave an estimation about every six months or maybe yearly. From her perspective, there are some elderly who have a similar way of thinking as her that they are strong enough not to need a health check. Nonetheless, she understands

that a health check is inevitable. From her perception, she perceived it as a mini session of health check that the nutritionist comes to give a talk, which benefits individuals with the same mental model as her.

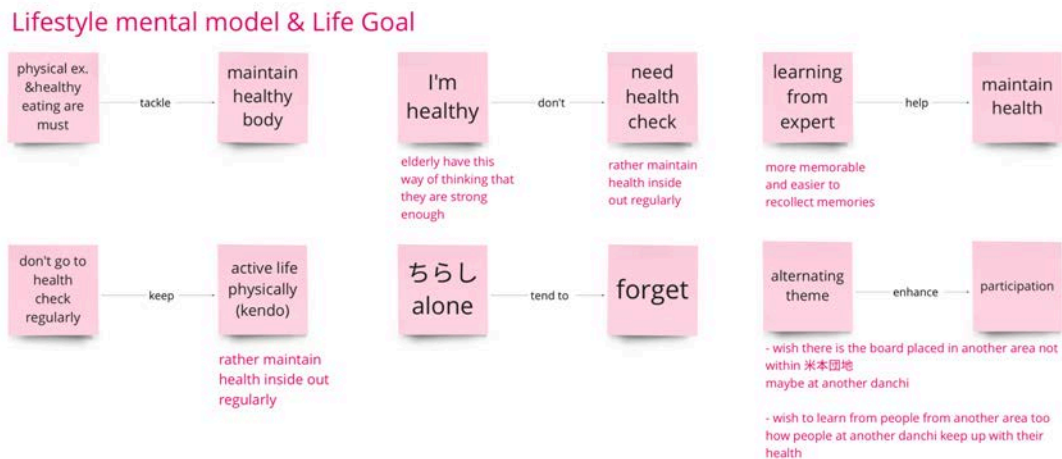


Figure 4.34 An Audience's Lifestyle Mental Model & Life Goal

An alternative way for her health check is to interact with the nutritionist every Tuesday during the community market. She enjoyed communicating with the nutritionist and asked for healthy recipes to maintain Calcium for people her age. When she asked, others also enjoyed listening. Unfortunately, the nutritionist from House Food Corporation would not appear at the community market anymore as she resigned from her job in April to work with Wakka NPO. From her perspective, a nutritionist's presence in the aging community is significant. She told us that this is why the nutritional balance talk during the food demonstration is crucial. To compare with another nutritional balance talk, she attended a walking session and nutritional talk from Yakuju Corporation. Yakuju Corporation operates a drug store that occasionally offers a walking session for Yonamoto Housing Complex. Nevertheless, their nutritional talk contents were repetitive and the same for each round. Thus, she did not attend anymore. She wished they had rotating basis themes so that more people would want to attend.

For comments to improve the second round of Yonamoto Recipe Sharing, she suggested having kids join the session. It could be a recreational activity for kids and their parents to attend during summer break. She mentioned that it

would benefit parents with those with picky eater children. She would apply the knowledge she obtained from the previous round of the demonstration to her food preparation processes. Palm-size estimation is a very useful skill. The talk helped raise awareness of her daily meals about nutritional balance. She stated that she tended to be more careful about food choices when going to the grocery or convenience store.

4.4. Experiment Round 2: Recipe Contest

The following part is the thick description from an observation of Yonamoto Recipe Sharing for the second round. The experiment duration for this round is shorter than the first round of two weeks. The promotion period for the recipe contest round two takes four weeks, from 11 April 2022 to 13 May 2022, for advertising due to a limited research timeline and the long-term public holidays of the Golden Week in Japan. For this round, a promotion strategy was different from the previous approach because of time constraints. Therefore, a careful plan to promote was crucial to attract potential recipe providers within a limited period. After discussing with volunteers and social welfare staff, they prefer to have newcomers who are irregular visitors explore the community center and interact with volunteers scaffolding new social circles.

A new challenge for the second round is to find a new nutritionist to take part in the nutritional balance talk. The House Food Cooperation nutritionist is about to resign and work with Wakka NPO. Thus there is a need to look for a new nutritionist. It is relatively time-consuming to discover a new nutritionist from Yakuju Pharmacy who is already doing similar work by giving a nutritional talk during the medical walking session hosted by Yakuju Pharmacy at Yonamoto Housing Complex. Moreover, communication with the new nutritionist was challenging. However, it grants many more future approaches to Yonamoto Recipe Sharing as an add-on to the medical walking session.

Before the resignation of the House Food Cooperation nutritionist, an interpreter fellow and I went to the community center on 22 March 2022 to discuss with her about the theme for the second round ahead of time as I have a plan to promote the recipe contest round two right after the demonstration round

one for former participants to spread word-of-mouth (WOM) about benefits of engaging in Yonamoto Recipe Sharing series with the contest and the demonstration. To reiterate, the nutritionist chose the theme of speedy and easy meals for the second round of the recipe contest to emphasize practicality in daily life as many seniors live alone. Since the first round of Yonamoto Recipe Sharing series shows that the first experiment grabs more attention from females, we do not want to miss out on advantages that males also benefit from the contest and the demonstration. For this second experiment, we desire to expand to irregular visitors as well as males who may overlook the importance of healthy eating. Since males are more physical activities oriented groups, the second test aims to trigger healthy eating that can also contribute to physical health. Regular physical exercises mean nothing, if individuals consume inadequate nutritional balance.

Below are lists of activities accompanying with promotion for the second round of the contest:

- Community Center (11 April to 13 May 2022)
- Community Committee Meeting (9 April 2022)
- Dementia Lecture (18 & 22 April 2022)
- Water Bottle Decoration (28 April 2022)
- Social Welfare Office (28 April to 13 May 2022)

4.4.1 Findings & Value in Context

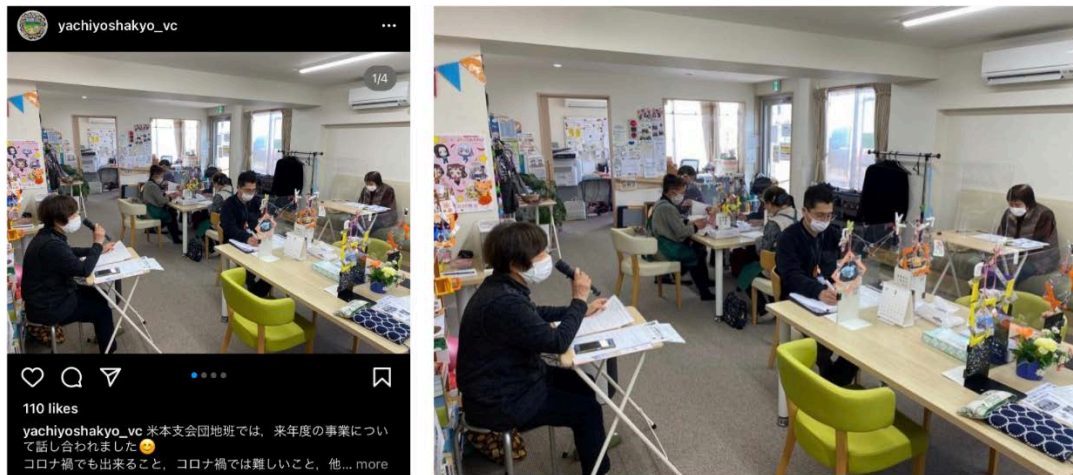
Community Center (11 April to 13 May 2022)

Shifting in focal point from only promoting at the community center, advertising in other places brings more heterogeneous participants to engage by exchanging healthy eating through food. From interview feedback of involved actors earlier, the second round will focus on advertising in various locations and means to recruit more potential recipe providers through WOM. Rather than just flyers and community volunteers helping to amplify WOM about the Yonamoto Recipe Sharing, the experiences of previous round participants in Yonamoto Recipe Sharing

are an influential force to help spread WOM and the desire to engage in community activities. To gain newcomer engagement, the community leader and other volunteers decide to be in charge of promoting the recipe contest at the community center. For the experiment round two of the recipe contest, it underlines the WOM spread through experiences of former participants who also actively join other activities in the Yonamoto Housing Complex out of the circles of the community center. The recipe contest promotion aims to gain enough recipes for the food demonstration by borrowing the perspectives of previous round participants. Advertising at the community center continues to operate by volunteers when students are away.

Community Committee Meeting (9 April 2022)

On 9 April 2022, an aging community research team went together to promote individual research activities. The goal for today's promotion was to trigger these stimulators to help amplify the necessity of healthy eating that accompanies physical exercise. Artifacts for presenting the recipe contest round two consist of the recipe sharing board, the recipe contest poster, and flyers. The community leader and volunteers brought up the topic of the recipe contest that they preferred to have newcomers participate in for the second round and asked other members for help with the recipe contest advertisement. The leader also attached the recipe contest poster on the wall for regular and irregular visitors who may be interested in engaging in community activities. Community Committee Meeting offered opportunities to encounter community stimulators such as social welfare staff, Wakka NPO representatives, and Land area support center members that can alleviate community engagement from Yonamoto residents. We also handed flyers to those who attended the meeting to help spread WOM about healthy eating. Images in Figures 4.35 and 4.36 illustrate the atmosphere of the meeting and involved staff who helped post on Yachiyo City Council of Social Welfare social media accounts to help promote the recipe contest. Various online and offline channels help spread the essence of healthy eating to more people, including those outside Yonamoto Housing Complex.



(Source: 八千代市ボランティアセンター社協 (@yachiyoshakyo_vc), April 9, 2022, https://www.instagram.com/yachiyoshakyo_vc/.)

Figure 4.35 Community Committee Meeting Atmosphere with Involved Actors



(Source: “八千代市社会福祉協議会,” Twitter (Twitter, June 8, 2022), <https://twitter.com/yachiyoshakyoVC>.)

Figure 4.36 Recipe Contest Promotion for Community Committee Meeting

Dementia Lecture (18 & 22 April 2022)

Two rounds of dementia lectures were held on 18 and 22 April 2022 portrayed at Land Area Support Center. My interpreter and I attended both rounds to promote the recipe contest on both days. On 18 April 2022, we encountered a rainy day as a challenge that caused a few people to attend the lecture. The staff cooperated with us by putting the recipe contest slide in his presentation illustrated in Figure 4.37 and giving us some time to introduce the recipe contest to audiences who come to the dementia lecture during its halftime session break. From his long-term work with the elderly, he made the promotion more interactive by asking former participants from the recipe contest or food demonstration to share their experiences that may trigger others' desire to join the contest. The slide turned into a ticket-to-talk that recalled memories of experienced Yonamoto Recipe Sharing series audiences and stimulated the conversation amongst dementia participants. By expressing their thoughts about Yonamoto Recipe Sharing series, they became catalysts that spread WOM about healthy eating. During the break time of about 15 minutes, people shared nutritional tips and recipes learned from experiment round one. Previous round audiences also cheered us that they would participate in the contest this round and gave us good luck wishes for thesis writing. Dementia break time became a meaningful session in that people expanded social circles through communicating with one another. We also saw a male who is a target participant for the experiment round two who may be a potential member in the future. Hence, we also handed him and others flyers to engage in community activities by promoting the Yonamoto Recipe Sharing series.

On 22 April 2022, it was a sunny day when many people were attending the lecture, both male and female seniors portrayed in Figure 4.37. The repeating scenes on the first dementia day occurred. The staff gave us time to promote during their short break. Since there were several male participants compared with the previous dementia lecture, we did not want to miss this opportunity by emphasizing the words speedy and easy cooking recipes to trigger the interest of male participants. Furthermore, we also insisted that the recipe can be very simple by incorporating recommended food or healthy ingredients from convenience stores from the nutritionist. As males rely more on convenience store food for



Dementia Lecture (18 April 2022)



Dementia Lecture (22 April 2022)

Figure 4.37 Recipe Contest Promotion for Dementia Lecture Day 1 & Day 2

daily meals, they can utilize obtained nutritional knowledge even if they do not cook. Selective choices of food and easy recipes provide practicality that can apply to grocery shopping at convenience stores. Although some seniors do not engage in the recipe contest, we hope their attendance during the food demonstration can be useful for their daily lives.

Water Bottle Decoration (28 April 2022)

Water bottle decoration is another design research activity from Keio Media Design student for Yonamoto dwellers held on 28 April 2022 at Association Office. Research teammates who organized today's event helped promote the recipe contest by distributing flyers and briefly explaining how and where to participate at the end of their experiment session shown in Figure 4.38. Since the majority of the participants were female seniors whose faces are unfamiliar to the community center, it granted an opportunity to encounter and trigger newcomers to join the recipe contest at the community center. For this round of promotion, we also had a chance to create and expand a connection with Land Area Support staff as community supporters to ensure the well-being of Yonamoto residents.



Figure 4.38 Recipe Contest Promotion for Water Bottle Decoration

Social Welfare Office (28 April to 13 May 2022)

After the water bottle decoration activity, the social welfare staff gave an idea about attaching a poster at the front door of the social welfare office shown in Figure 4.39. The poster helps promote the recipe contest. Since the office is also where Yonamoto residents get to know about a community activity schedule, visitors sometimes come to the office to get flyers for new notices at Yonamoto Housing Complex. I left some flyers at the front desk for references at the office in case some people have an interest in joining. Flyers are one of the media that community supporters communicate with the locals as a certain number of vulnerable residents do not have access to the internet or smart devices. Thus, social welfare staff still utilize an analog way to transmit desired messages. For this research, healthy eating is a core value to stimulate the locals to recognize the importance of food and the practicality of nutritional knowledge.



Figure 4.39 Recipe Contest at the Front Door of Social Welfare Office

4.4.2 Value Validation

Contestants filled the recipe-sharing board with a mixture of handwritten recipes and printed-out versions showing various abilities in technological skills. For about four weeks, the total recipe collection was thirteen, beginning from 11 April 2022 to 13 May 2022, as shown in Figure 4.40. Gathered recipes for this round were slightly fewer than in the first experiment due to time limitations and raining season when people tended to stay home. The nutritionist chose two recipes from these thirteen recipes gathered during the recipe contest period. For this round, no photos are attached to the recipes, as portrayed in Figure 4.40. The figure is evidence that participants became more used to simple methods of participation in the recipe contest. Although there were no attached images, some contestants still represent their technological skills through printed documents, not just handwritten recipes.

After food demonstration 1 (お披露目会 1), to underline the importance of practicality in daily life, we decided to include recipes from the nutritionist during the food demonstration. After brainstorming and discussing with the community leader, she recommended that there were suggestions from former round participants that they desired to learn a recipe from the new nutritionist. The recipe from an expert adds value to the Yonamoto Recipe Sharing series to spread healthy recipes with certified nutritional balance and easy-to-make steps to more vulnerable seniors.

Interview the Nutritionist (13 May 2022)

While we were still looking for a nutritionist to host the nutritional balance talk for the second round of the food demonstration, the former nutritionist from the House Food Cooperation was willing to help choose two winning recipes. The first recipe is Chinese cabbage with meatballs soup, and the second is stewed udon noodles. In Figure 4.41, the nutritionist's selection of winning recipes focused on creativity and practicality in daily life.

For the first dish, the nutritionist commented that she prefers the creativity of applying available vegetables from the community market with frozen ingredients. The recipe winner turns frozen ingredients into a healthier menu with few cooking steps and does not require much kitchenware. Meatballs were also available in both

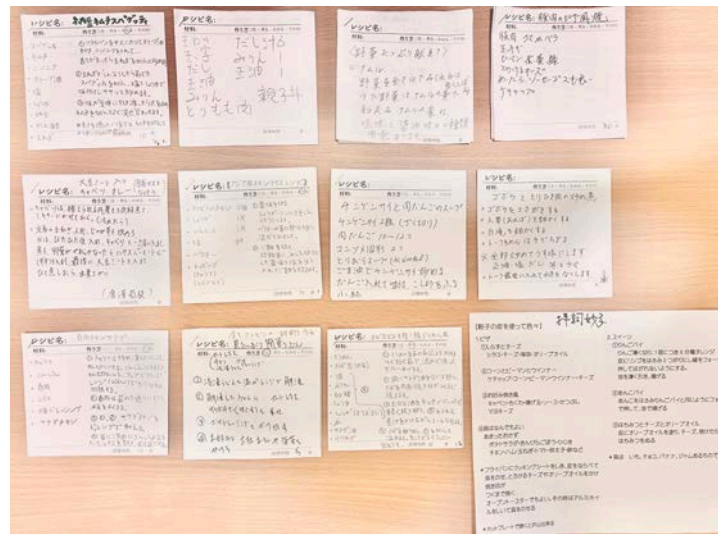


Figure 4.40 All Gathered Recipes After the End of the Recipe Contest Round 2

supermarkets and convenience stores. Moreover, people of all generations can enjoy the soup even if they do not enjoy eating vegetables. Drinking soup was an alternative way to have kids consume enough vitamins, similar to how the former winner turned carrots into juice. Such dishes also benefit those who have difficulty chewing, especially the elderly, who are often confronted with periodontal disease. The nutritionist states it is a cause of suffocation from food choking in the elderly due to receding gum and wobbly teeth causing tooth loss.

Proceeding to the second recipe, the nutritionist remarked on the practicality of the recipe that the winner utilized the recommended ingredients on a flyer. The utilization of udon noodles and packaged cut vegetables into a recipe by the contestant is the nutritionist's intention. The nutritionist added recommended ingredients on flyers, and she felt glad when people applied them to their food preparation. Udon and packaged cut vegetables are easy to find in the community markets and convenience stores. Such a level of easiness triggers the desire for healthy cooking and eating. To reiterate, those recommended ingredients by the expert can also benefit those living alone, males or widowers who mainly rely on their meals from convenience stores to be more selective about their food choices.

Since the nutritionist from the House Food Cooperation will be working with Wakka NPO from now on, she recommended considering a theme for the second

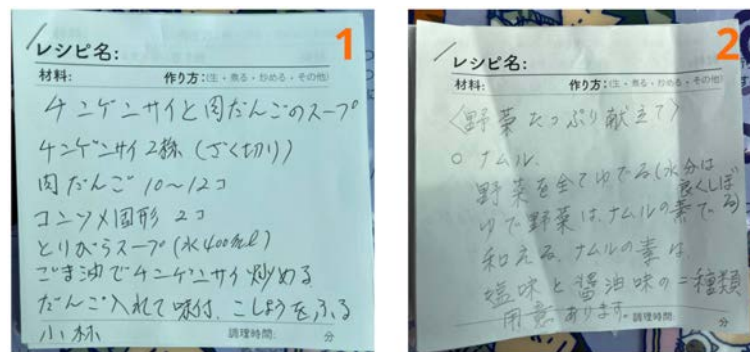


Figure 4.41 Winning Recipes from Recipe Contest Round 2

round earlier as preparation for presentation material for the nutrition balance talk is relatively time-consuming. The nutritionist suggests increasing calcium to prevent osteoporosis for weakened bones and cutting back on salt to reduce the chances of easy fatigue from hypertension. The themes uncover many values for vulnerable counterparts as the nutritionist reveals that a lot of them are facing similar challenges of health decline due to aging. For the part of a reduction in sodium intake, she commented that it would benefit many, especially those who rely on convenience store food. Even if they do not cook, the lecture about reducing sodium intake could still benefit food choices. Thus, individuals could be more careful about healthy eating while balancing routine physical exercise.

The nutritionist's final comments about the recipe contest were that the recipe contest enhances competitiveness to trigger the elderly to stay active for those interested in maintaining health through food. Therefore, the second round of food demonstration should include a quiz session in-between times to recall a memory about information from the nutritional balance talk and decrease participants' boredom during a food demonstration to the next as it is time-consuming. Audiences who answer all correct quizzes would receive a cafe gift card sponsored by the fund from the weekly cafe session shown in Figure 4.42. Sharing knowledge amongst the aging community is an interdependent connection through food as a bridge to expand community networks amongst those facing similar aging conditions. A sense of competence offers single dwellers to strive for their life goal of longevity with well-being to age healthily.




Figure 4.42 Cafe Gift Card as Rewards for the Quiz Session

Interview the Community Leader and Volunteers (13 May 2022)

After a discussion with the community leader and volunteers about including a quiz session with gift cards as rewards, they suggested that they also prefer and enjoy listening to feedback from others. They plan to have comments about participants' feedback on the following publication of the community free paper to capture a memorable and co-creation moment of Yonamoto Recipe Sharing series. They wish to have a comment section as a part of a survey as they value all audiences' voices illustrated in Figure 4.43. Furthermore, participants' responses also help them improve for future rounds of Yonamoto Recipe Sharing series. They would like to communicate with newcomers to feel included by engaging as a part of community activity. If there is a part in the food demonstration where facilitators could hear audiences' responses, they would appreciate all needs, concerns, or supports from those comments.

4.5. Experiment Round 2: Food Demonstration

For this round of food demonstration, participants enable to learn through observation and taste with food sampling from the nutritionist from Yakuju Pharmacy. Besides a quiz and a comment section in a survey, the nutritionist's recipe is another addition to the food demonstration. The nutritionist will be a facilitator to demonstrate the special dish with a few steps of cooking methods that are easy to try at home with qualified nutritional values from the expertise. Experiences through senses aim to trigger a desire to apply healthy eating through cooking and choices of ingredients. The nutritionist wants to underline that nourishing

 **本日の活動に関するご意見・ご感想があればお聞かせください。今後のイベントに役立てます！**



アンケートにご協力ありがとうございました。

Figure 4.43 Comment Section for Feedbacks

dishes do not have to be complicated to emphasize practicality by experiencing her recipe at home.

4.5.1 Findings & Value in Context

Recipe Day: Recipe Award Ceremony (17 May 2022)

Due to the schedule conflict of the nutritionist from Yakuju Pharmacy, she did not have time to join the recipe day for the rewarding ceremony on 17 May 2022. Thus, my interpreter and I are representatives to present the reward on her behalf to both recipe winners in portrayed Figure 4.44. Since the demonstration day was approaching on 6 June 2022, the community leader asked for cooperation from the recipe winners to help demonstrate their dishes. The interpreter helped by giving comments from the nutritionist about why their recipes won awards. Surrounding people were very respectful and supportive by stopping whatever they were dealing with and giving the winner applause. Moreover, they also helped take photos of their friends as memories. Another Recipe Day became a day everyone at the community center appreciated for contributing to the community through public eyes.



Figure 4.44 Overall Atmosphere of Recipe Day for Recipe Contest Round 2

Preparation for the Second Food Demonstration Day

Since both of them were inexperienced in being facilitators for the food demonstration, they were worried about what they should be doing on the demonstration day. Two main challenges were making flyers and being too shy to be in front of public eyes. Since both were not so used to technology, they were worried about making flyers themselves. I eased their feelings by informing them that the community leader and I would be in charge of the flyers. However, I needed their help to comment on flyer appearances, including images, ingredient information, and cooking methods. I desired to ensure their satisfaction with flyers representing their hard work by contributing recipes to the community. Thus, we communicated to make some corrections, as shown in Figure 4.45. I made changes according to the recipe winners' requests and established the new flyers on 24 May 2022 for the recipe winners. Both were very satisfied to see their works published by other Yonamoto residents. After seeing colorful recipe flyers, the community visitors requested the flyers and asked whether how they could sign up for the food demonstration. Another challenge was public speaking, as one recipe winner was too shy. Thus volunteers ensured that they would accompany her and demonstrate cooking methods together as a theme.



Figure 4.45 Communication with Recipe Winners for Flyer Preparation

Cooperation between the professor, nutritionist from Yakuju Pharmacy, community volunteers, recipe winners, and students led to the second round of the food demonstration. The new nutritionist from Yakuju Pharmacy will host a nutritional balance talk for the second round of the food demonstration. Since the food demonstration is a co-creation activity involving multiple actors, several actors communicate for flyers and other documents as crucial artifacts to invite visitors to the food demonstration.

Preparation for three types of flyers for this round of food demonstration:

- Food Demonstration Round 2
- Winning Recipes from the Locals & the Nutritionist's Recipe
- Quizzes Nutritional Talk Documents

The preparation for the food demonstration round two artifacts divided into two sets. Firstly, the winning recipe flyers for the demonstration day through the co-creation of volunteers, recipe winners, and students, as portrayed in Figure 4.46. Another set of document preparation is cooperation with the help of the nutritionist depicted in Figure 4.47, including the nutritionist's recipe flyer, quizzes, and nutritional balance talk flyer.

On 24 May 2022, community volunteers distributed food demonstration flyers to recruit audiences to engage in the event. Flyers stimulated conversation between Yonamoto dwellers. They triggered conversations between community visitors and a community leader over healthy eating topics. Figure 4.48 illustrates how regular and irregular visitors communicated with one another with help from a flyer as a ticket-to-talk. The male visitor mentioned that he had just returned from the convenience store and would also like to join the food demonstration on 6 June 2022 after the community leader recommended the activity. Females on the right also stated that they often relied on their meals at convenience stores. Considering one another's need cut down an amount of sodium that can cause several health issues, both volunteers and visitors encouraged and aware of their aging needs by inviting and encouraging their counterparts to join the food demonstration and eat more healthily. On that day, they even shared how to cook recipes on

ほっこりレシピお披露目会 2
 コンテストに入賞したレシピのデモンストレーション（実演）と、栄養士による健康な食事についてお話をいたします！
 【日時】6月8日（月）14:30~16:00（受付 14:00）
 【会場】【定員】【お申し込み】
 ほっこり 15~20名 (1)東海薬局/管理栄養士 田嶋さん (2)レシビ入賞者とボランティアの皆さん (3)東海薬科大学大学院 専任講師 & 学生

チンゲンサイと肉だんごのスープ
 小林さん
 (第2回レシピコンテスト入賞者)
 冷凍ストックで簡単中華スープ
 量が少ない時、あと一品欲しい時にぜひ！
材料 (2人分)
 チンゲンサイ 2株 ヒリがらスープ大1
 肉だんご 2個(10g) ギョウザ大1
 (できあいの物) 10個 しょう油 大1
 固形コンソメ 2個 水 600ml
作り方
 ① チンゲンサイはざく切りにする。
 ② ギョウザでチンゲンサイを炒めて調味料、水、肉だんごを入れて肉だんごに火が通ったらしょう油をふる。
備考:
 調味料: オイスターソース 大1
 しょう油 大1 でもおいしいです！

煮込みうどん & ナムル
 鈴木恵美子さん
 (第2回レシピコンテスト入賞者)
 「野菜たっぷり献立」おかずにもおつまみにも合います
 スープの味がしっかりしみ込んだ、煮込みうどんへ。
材料
 ナムル 煮込みうどん
 ナムル野菜: せりし、人参、ピーマン、玉ねぎ、きざみ海苔、
 ナムルの具: 水、塩味、醤油、わかめ、等
作り方
 ナムル
 ① 野菜を全てでゆで(水分は軽く絞る)ゆで野菜は、ナムルの具で和える。
 ② ナムルの具は、塩味と醤油味の二種類用意があります。
 煮込みうどん
 ① 煮込みうどんのつゆを作る。こちらで野菜たっぷり用です。野菜の具は先に軽く煮る。その時玉ねぎも入れ煮る。うどんをゆでながら煮込む。
 ② 茹けたら、うどんにきざみ海苔やわかめ、お好みの具をよそせる。

Figure 4.46 Winning Recipes From the Locals

こまつなチーズのマヨネーズ和え
 管理栄養士さんのレシピ
 (薬剤師/管理栄養士)
材料 (2人分)
 小松菜 2/3束 (14g)
 マヨネーズ (水素) 1/2缶 (40g)
 チーズ 2個 (30g)
 マヨネーズ 大さじ1/2 (14g)
 しょう油 (白黒混合) 少々 (4.2g)
作り方
 ① 小松菜は水洗いし、3cmほどに切ります。
 ② 耐熱容器に①を入れ電子レンジ(600w)で2分加熱し、粗熱をとり、水気を絞ります。
 ③ マヨネーズは②の油をとり、マヨネーズは混ぜておろす。
 ④ ボウルに②、③を入れ、マヨネーズを加えてよく和える。
 ⑤ 最後はしょう油を加え、味を調えます。
1人当たり
 エネルギー たんぱく質 脂質 炭水化物 カルシウム 食塩
 127kcal 3.2g 16.3g 2.9g 257mg 0.7g
 ※1人当たりの栄養価は2人分を2で割って算出しています。

栄養のクイズ
 1. 塩分の多くは何から摂取している?
 A. 食品 B. 調味料
 2. どちらの塩分が多いと思いますか?
 A. うどん B. そば
 3. 厚生労働省が女性に呼びかけている1日あたりの食塩摂取量の目標値はどの程度なのか?
 A. 7.5g B. 10.5g C. 6.5g
 4. 厚生労働省が男性に呼びかけている1日あたりの食塩摂取量の目標値はどの程度なのか?
 A. 5.5g B. 7.5g C. 10.5g
 5. ほうれん草、小松菜、ピーマン、玉ねぎの中で100g中のカルシウムが多いのは何でしょうか?
 A. ほうれん草 B. 小松菜 C. ピーマン D. 玉ねぎ
 6. カルシウムはあるビタミンと一緒に食べると吸収がよくなります。どんなビタミンでしょうか?
 A. ビタミンA B. ビタミンD C. ビタミンC

骨強度を保つためのカルシウムアップ&減塩
 ●薬樹
 2022年04月04日
 藤原麻由 八木代
 管理栄養士
 講師 薬樹
目次
 1. 骨粗しょう症とは
 2. 骨のために必要な栄養素
 3. 過剰摂取を避けたいもの
 4. 減塩
 5. 食べ方のコツ
 6. 調味のコツ
 7. コンビニ・スーパーでの食べ物の選び方
 8. 本日のまとめ
 ●薬樹 ©2022 Tokyo Corporation All Right Reserved.

Figure 4.47 Nutritionist recipe & Nutritional Talk Documents

flyers using different ingredients from a convenience store. Reducing sodium and increasing calcium from convenience store ingredients would benefit their daily lives.



Figure 4.48 Flyer as a Ticket-to-Talk to Trigger Conversation

4.5.2 Value Validation

To investigate how the food demonstration can trigger healthy eating among regular and irregular visitors, I collected data by observing participants' behaviors and responses to the nutritionist lecture, the food demonstration, and nutritional quizzes. Furthermore, I kept records of the food demonstration through videos from various angles as references to examine in more detail. Besides, a comparison of surveys between both rounds will be discussed later. Furthermore, interviews with involved stakeholders reiterate thoughts and feedback for the activity for future approaches. The event flow follows the list below from the outline schedule of the food demonstration on 6 June 2022. Overall the food demonstration took 1 hour 30 minutes and covered contents intended to trigger healthy eating amongst audiences through observation and taste.

Observation through the Food Demonstration Day (6 June 2022)

The theme for food demonstration round two emphasizes practicality and at-home experience to explore obtained skills from vulnerable counterparts and the nutritionist. Following the demonstration timeline below, the validation undergoes observation through individuals' behaviors to examine whether the nutritionist talk and food demonstration are influential factors for healthy eating. The following section is the descriptive investigation of the utilization of communication tools that are ticket-to-talk and word-of-mouth (WOM). Discovery from interactions amongst involved actors during the food demonstration, such as the nutritionist, volunteers, and the audience, will be further elaborated in more detail.

- Nutritional Balance Talk (20 mins)
- Food Demonstration for 3 recipes & Quizzes in-between-time (60 mins)
- Food Sampling & Photo Time (10 mins)

The first impression that Yakuju Pharmacy has for the Yonamoto people is an active and well-connected bond between volunteers and community visitors. On the food demonstration day, the Yakuju Pharmacy staff, my research teammates, and I arrived about 1 hour and 30 minutes before the starting time. The food demonstration started from 2:30 to 4:00 PM. The nutritionists, volunteers, and participants had little interaction before the food demonstration began. Yakuju Pharmacy staff includes their public relations team (PR team) and also nutritionists. Our team consists of professors and students. Although we had been communicating online for about a month, this was the first time we met and greeted each other in person. While waiting for people to pour into the community center around 2:00 PM, the first comment that the nutritionist noticed and commented about Yonamoto dwellers was that they are very active vulnerable seniors. From their conversation, the nutritionists realized that Yonamoto residents are well aware of healthy eating. Communicating with the locals triggered the nutritionists' desire to learn about how seniors maintain their health through food. Interaction amongst involved actors illustrates below in Figure 4.49 through the atmosphere before the demonstration.



Figure 4.49 Atmosphere Before the Food Demonstration

From my experiences, the weather is a factor affecting the community engagement of people at the Yonamoto Housing Complex. On sunny days, passersby often go out for groceries or exercises and drop by the community center to enjoy chatting and socializing. The community center was not as crowded as in the first round of the experiment due to raining season. The demonstration day's weather kept on raining since the morning. Hence, some audiences in a name list did not appear on the demonstration day. Although there were three males on the name list, I noticed that there were only two males who put in their effort to come and attend today's event. In the earlier section, community volunteers and I promoted the Yonamoto Recipe Sharing series at various locations. Therefore, some community supporters, such as social welfare staff and association office staff from the water bottle decoration session, dedicated their time engaging in the activity even if it was raining.

The event flow began with greeting the audience before the food demonstration began. Students were in charge of this opening. An interpreter spoke on my behalf to minimize language barriers as much as possible. Before our greeting to the audience, we distributed documents such as nutritional balance lecture handouts,

recipe sheets, and surveys shown in Figure 4.50, along with writing tools for participants to take some notes. After finishing the greeting and introduction for the overall schedule of the food demonstration, the interpreter passed a microphone to the nutritionist to host her nutritional balance talk.



Figure 4.50 Artifacts and Documents for Food Demonstration Round 2

Since the new nutritionist was relatively new to the field, her lecture inclined towards one-sided communication with less interactive communication between the nutritionist and listeners. She tried her best to give as much as possible within 20 minutes of her talk. Although the talk was not as interactive as the experiment round one, her contents highlighted the practicality that audiences could apply daily activities. Examples are changes in food consumption methods to reduce sodium levels extracted from the talk slide in Figure 4.51. Besides healthy cooking methods for food preparation, the nutritionist has never failed to make those who do not usually cook included. The left image is a tip for refraining from drinking soup from ramen could help lessen sodium levels. Another tip on the right depicted recommended ingredients such as canned tuna or frozen vegetables from the convenience store food that can enhance the nutritional values of an instant corn soup. Rather than just drinking pure instant soup from the package, adding spinach could turn a standard instant soup into a healthy one as spinach is high in calcium.

Audiences' responses to the nutritional balance talk triggered their desire to apply skills obtained as a part of daily life activities. Some people made notes to

5. 食べ方のコツ



7. コンビニ・スーパーでの食べ物の選び方



(Source: 田畑瑛里, “ほっこりレシピお披露目会2,” ほっこりレシピお披露目会2 (June 6, 2022).)

Figure 4.51 Tips for Eating & Cooking for Healthy Eating



Figure 4.52 Audiences’ Responses to the Nutritional Balance Talk

recall their memories, as shown in Figure 4.52. Participants put in a lot of effort to write detailed notes as they value these practical tips from the nutritionist. Another type of seniors' response was that if they were curious about something, they asked by raising their hands. The audience asked questions such as "I did not drink milk, what could be an alternative" or "I did not eat cheese, what would you recommend" were questions that participants were curious about. However, I noticed that some were also shy. When the nutritionist answered, they also wrote down notes. In addition, they also shared amongst themselves what they often eat to maintain their calcium levels. The two-way communication between the nutritionist and Yonamoto residents allowed the expert better to comprehend seniors' eating habits from their perspectives.

The next session was the food demonstration hosted by recipe winners and volunteers. On that day, facilitators also wore headbands symbolizing their teamwork same as in the first round of the experiment shown in Figure 4.53. The first recipe was Chinese cabbage and meatball soup. The volunteers and winners divided tasks to host the demonstrations. They cooperated by taking turns to explain cooking steps and also recommend a place where they bought ingredients to audiences. The community leader was in charge of public speaking for both recipe winners today. While volunteers distributed the soup into bowls equally, the recipe winners prepared the following recipes.



Figure 4.53 Volunteers and Recipe Winners Cooperated as Teamwork

Before moving to the next recipe, the nutritionist and I prepared quizzes in-between times to reiterate what people had learned during the lecture by raising

their hands to answers seen in Figure 4.54. The interpreter helped host the quiz session. From their reaction, some could answer the quizzes immediately, while some still needed to look through lecture sheets.



Figure 4.54 Quiz Session and Audiences' Reactions

The following food demonstration was stewed udon noodles soup and seasoned vegetable side dish. Since the second recipe winner was very shy, her teammates boosted her confidence to speak as her contribution was very useful to other Yonamoto dwellers who could learn from her recipe. Some audiences desire to know more about other soup-based recipes. Thus, she recommended some to those who were eager to learn. At the end of her demonstration, the audience applauded her. Atmospheres of the second recipe illustrated in Figure 4.55 showing how a facilitator and participants interacted.

Before the next food demonstration, the next quiz session is held. Females were active compared with two men. A man sat in front and tried to answer without looking at the nutritional sheet, while a female tended to refer to ensure they got a correct answer. At the end of the demonstration, four females who got all six answer corrections received a community cafe gift card. Surrounding participants appreciated others' success by applauding their counterparts shown in Figure 4.56. From my standpoint, if the contents were two-way communications, it could help reminisce their memories.

The last was the recipe demonstration from the nutritionist. The demonstration began with a recipe introduction. Since her recipe was very simple and did not require heat for cooking, it triggered individuals' desire to give it a try to cook



Figure 4.55 Atmospheres of the Second Recipe



Figure 4.56 Another Quiz Session & Rewards for Quiz Winners

at home. Audiences were more eager to ask questions and learn more details than in the first experiment. It enhanced interaction between the nutritionist and the locals. The elderly also wrote down notes given by the nutritionist. The nutritionist allowed volunteers to experience healthy cooking with certified nutritional values. Moreover, the nutritionist also had an opportunity to observe seniors' cooking and help guide them with healthy cooking methods depicted in Figure 4.57.

Through both rounds of experiments, participants were gradually interested and paid more attention to their eating routines. Individuals became more confident in their abilities to pursue healthy eating habits and asked more questions during the nutritional talk session and a demonstration for both rounds of experiments. They also made notes to recall what they had learned throughout the day. I noticed that both the recipe contest and the food demonstration helped trigger interaction between involved actors amongst community volunteers, nutritionists, newcomers, and more. Communication between the actors allows community supporters to comprehend vulnerable seniors better and enhance Yonamoto well-being through healthy eating for their future plan.

Surveys

Audiences and nutritionists had different sets of questions for surveys. Questions are open-ended surveys to fully express their thoughts on their contribution to Yonamoto Housing Complex. The goal of the participants' survey aimed to clarify whether the Yonamoto Recipe Sharing series could trigger the importance of healthy eating. The set of surveys for the Yakuju nutritionists and their public relations team (PR team) was to explore further their perspectives about the Yonamoto Recipe Sharing series and possible future approaches for this design research. Another survey set for participants explored whether they could apply learned techniques for food preparation or grocery shopping. The collection of questions included those with multiple choices and level ranges to reduce hurdles from writing for the convenience of vulnerable seniors. The following section will compare the later survey for audiences with the first experiment survey.

Voices from Yakuju Pharmacy from the nutritionists' perspective and their PR team were that they also learned a lot from the Yonamoto residents' bonds

Introduce recipe



Ask question



Write down notes



Figure 4.57 Atmospheres of the Nutritionist's Recipe Demonstration

and their high awareness of health issues through food. Beginning with comments from the nutritionists, they stated that cohesive bonds between community dwellers helped enhance and activate community engagement. Also, the community volunteers scaffold connections with students expanding the networks with Yakuju staff. Co-creation between residents and students contributed to the interdependent environment that individuals rely on one another. With recipe sharing and food demonstration, they trigger a desire to learn through social activities. Rather than the traditional learning approach, both activities turned into socializing events where people could interact through food. They revitalized learning sessions for vulnerable seniors through interactive experiences such as observing the demonstration, the contest, and the quizzes to trigger a sense of competition. From questions received by the nutritionists, they also learned about concerns for seniors who would want to enhance their calcium level but do not consume dairy products. Thus, they wanted to add more examples of plant-based high calcium ingredients such as Broccoli and Okra for future talks.

For the next round of the nutritional balance talk, one of the nutritionists also suggested a more playful interaction with participants with a health check sheet. She stated that nutritional balance self-checked sheets to let participants know more about their health conditions. Filling their health information with final results with ratings could trigger conversation amongst audiences and raise awareness on which points they should make changes or set new life goals through food to better their well-being.

One concern from the nutritionists' standpoint was the crisis of pandemic increasing cases. COVID 19 causes social distancing, increasing isolation for individuals to stay at home. The numbers of participants need to be limited due to the spread of coronavirus. However, the nutritionists commented that the Yonamoto Recipe Sharing series helped incorporate various actors such as community volunteers, community visitors, and supporters to co-create such activities even in such a situation to alleviate communication amongst Yonamoto dwellers. The nutritionists wished they could host such activities with more people after the termination of the pandemic.

For the future approach, the nutritionists commented on the possible directions for the Yonamoto Recipe Sharing series applied to current Yakuju Pharmacy activ-

ities. An example idea from the nutritionists was the food demonstration with the medical walking or muscle training activity already hosted by Yakuju Pharmacy occasionally at various aging communities. Another ideation that the nutritionists provided was a strolling grocery shopping tour with nutritional balance guidance from nutritionists. Both nutritionists aim that such activities can boost physical and biological values through food for participants to stay actively aging.

Another perspective from the Yakuju PR team realized that such cohesive community members were benefits that contribute to the Yonamoto Recipe Sharing series. Close bonds between people raise awareness amongst one another towards healthy eating. It was an opportunity that Yakuju Pharmacy could tighten closer bonds with the locals and key persons in the community. Residents became the main roles in leading the activities. For future approaches from the PR team, she gave ideation to host a cooking class facilitated by community people underlining the essence of protein for vulnerable seniors and an existing protein talk from Yakuju nutritionists.

4.5.3 Comparison Between Two Rounds of Experiments

Comparison between two rounds of the food demonstrations with survey questions that participants completed. Besides demographic measures, the surveys reveal what people enjoy the most through their experiences, which could be memorable moments to share with others. Also, an approach that individuals could utilize skills or knowledge from food demonstration to apply afterward into their a part of life such as food preparation or grocery.

Numbers of audiences

- The first round there were 25 audiences.
- The second round there were 22 audiences.

The number of participants dropped slightly from the first to the second round due to the uncontrollable weather. Some people who signed up did not show up. Despite the rain, 22 people still managed to come and enjoy the moment together.

Demographic Information

In Figure 4.58, most females occupy spaces for both rounds as food or food preparation often refers to women's tasks. In the first round, there was one male and an increasing number of males in the second round. The chart illustrated that females tend to have a healthy eating lifestyle with more selective and careful food choices than males. From the figure, ages varied from the 30s to 80s. I categorized them as the younger elderly in their 60s to 70s and the older elderly in their 80s and above. Participants are heterogeneous in terms of age and physical conditions. There is a possibility that one could seek the needs of others and help with recipes or give hands for help with serving food, distributing surveys, and chopsticks during the demonstration.

Satisfaction Feedback & Feeling After Food Demonstration

The satisfaction rate for both round experiments is similar in terms of satisfaction and practicality in daily life. Heterogeneous participants enjoy learning about healthy eating to maintain their well-being for healthy longevity. Besides, scaffolding social networks are also crucial to reducing social isolation, especially during this pandemic. Individuals perceive such recreational activities as socialization. Audiences' responses are compatible with Yakuju's vision of Yonamoto Recipe Sharing as an exchange regarding the post-workout nutrients and socializing with the facilitators and other participants.

Since Yonamoto Recipe Sharing is a new proposal, I have learned that vulnerable seniors are unfamiliar, and they need more time to absorb new skills compared to the young. The elderly tended to be slower learners as aging progressed. The contents appeared as if they were easy for the young but can be difficult for seniors. Overall, the elderly were relatively satisfied with the demonstration but still lacked the confidence to apply it to their daily lifestyle. Compared with the 2nd round, participants become more confident in utilizing obtained skills and more satisfied as they become familiar with the demonstration portrayed in Figure 4.60.

For the first round, most means fall below 4.5 from Figure 4.59 as some attendees did not know much about the recipe contest or were unaware of the food demonstration. Thus, the recommendation means was the lowest for round one. Furthermore, satisfaction for round one is 4.12, whereas round two is 4.9, which

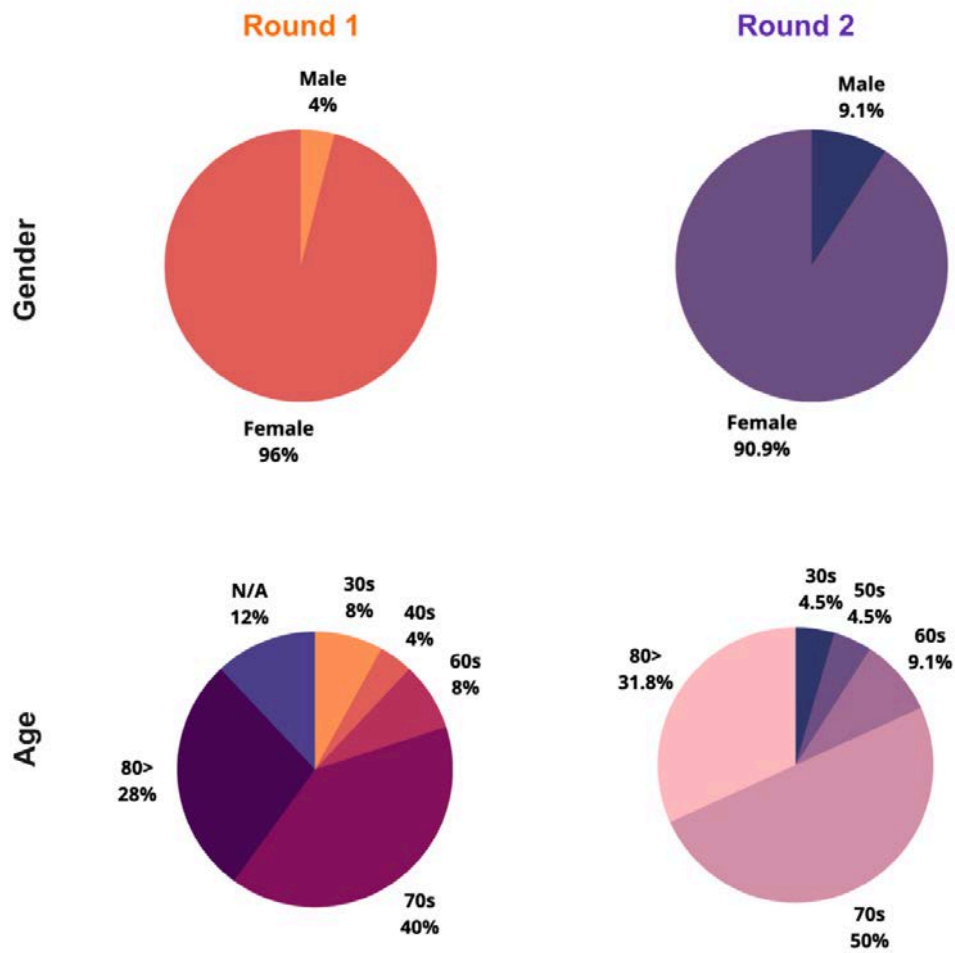


Figure 4.58 Demographic Information

indicates a change in the perception of Yamamoto Recipe Sharing. In round 2, I added a question about the level of current health satisfaction that shows 4.5 to explore what people think of their health by rating themselves. Such action led them to reflect upon their eating habits and strive for better scores after engaging in Yonamoto Recipe Sharing activities.

To summarize from experiments, Yonamoto Recipe Sharing helps scaffold an interdependent environment by bridging regular and irregular visitors to the community center. Participants play two roles as recipe providers or receivers, contributing to learning cultural values through new recipes and food preparation. The design scaffolds loose bonds through cultural experiences with various recipes and food preparation for a heterogeneous community where residents come from diverse backgrounds such as age, gender, and hometown. The Yonamoto Recipe Sharing includes a recipe contest and a food demonstration intended to bridge and create opportunities for residents with similar interests in food or cooking to bond and interact.

Experiment Round 1

Feedback Survey						
After participated in the food demonstration What is your opinion towards following statements?	1 = strongly not adopted, 5 = Strongly adopted 1 = strongly dissatisfied, 5 = Strongly Satisfied					Mean
	1	2	3	4	5	
Apply learned nutritional balance in a part of life activity	0	0	0	4	20	4.6
Apply learned recipes or cooking tips in a part of his/her food consumption or food preparation	0	0	1	5	17	4.32
Recommend the food demonstration to others	0	0	2	6	14	4
<u>Satisfaction</u> level with the food demonstration	0	0	3	6	14	<u>4.12</u>

Experiment Round 2

Feedback Survey						
After participated in the food demonstration What is your opinion towards following statements?	1 = strongly not adopted, 5 = Strongly adopted 1 = strongly dissatisfied, 5 = Strongly Satisfied					Mean
	1	2	3	4	5	
Apply learned nutritional balance in a part of life activity	0	0	0	3	19	4.8
Apply learned recipes or cooking tips in a part of his/her food consumption or food preparation	0	0	0	2	19	4.6
Satisfaction with your current health condition	0	0	2	7	13	4.5
<u>Satisfaction</u> level with the food demonstration	0	0	0	2	20	<u>4.9</u>

Figure 4.59 Perception Towards Yonamoto Recipe Sharing for Both Experiments

Chapter 5

Conclusion

5.1. Scaffold Loose Connections

The conclusion from experiences through experiments scaffold social circles in the aging community. As social contacts are credible resources with scaffolded connections, an interdependent environment helps trigger healthy eating amongst Yonamoto dwellers. Connections amongst actors play a crucial role as “crowd-sourcing” catalysts in influencing a spread of a ticket-to-talk and decision-making through word-of-mouth (WOM).

Findings and values from the Yonamoto Recipe Sharing series, the design scaffolds two loose connections between:

- Key actors include regular and irregular visitors
- Key actors and allies

Case 1 in Figure 5.1, the design scaffolds loose connection between key actors through communication and engagement between regular and irregular visitors. For example, visitors talk about food from a convenience store that they refrain from for better health conditions, or some donate agricultural produce from their farm for food demonstration. Another example is an interaction between community visitors and volunteers who donate ingredients for the food demonstration.

Case 2 in Figure 5.2 is another loose connection between key actors and allies. The demonstration offers nutritionists opportunities to guide and correct often mistaken nutritional diets by audiences. For example, community visitors learn about healthy eating through observation and tastes that better imprint in seniors’ memories. Allies amplify this by highlighting practicality with nutritional

CASE 1 Scaffold loose Connection between **key actors**



Loose connection through communication and engagement amongst actors in various cases :

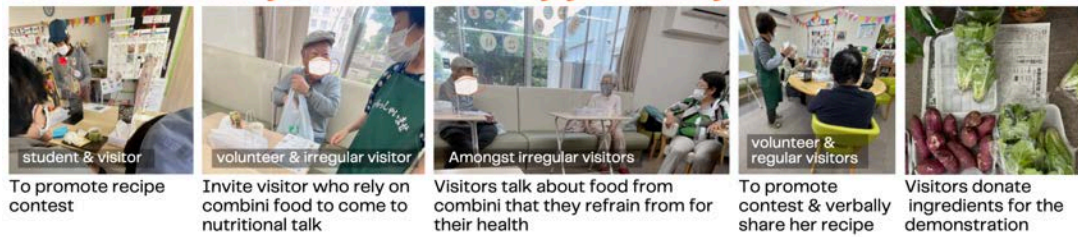
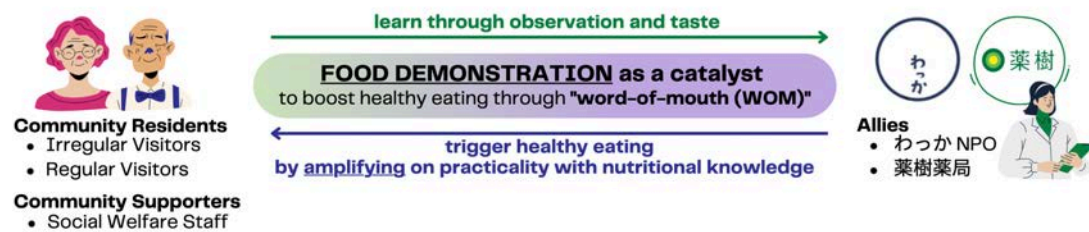


Figure 5.1 Case 1

CASE 2 Scaffold loose Connection between **key actors & allies**



Loose connection through communication and cooperation between actors in various cases :

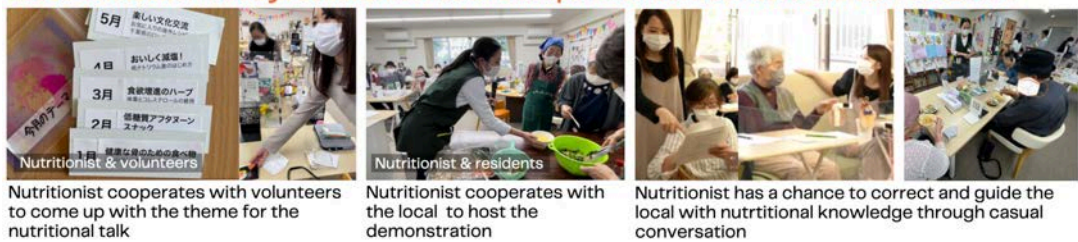


Figure 5.2 Case 2

knowledge with food as the topic for the center of communication. Furthermore, allies such as Wakka NPO and Yakuju Pharmacy also cooperate in a demonstration to be a part of the Yonamoto community with better understanding through seniors' perspective.

5.2. Future Work

5.2.1 Community Volunteers' Perspective

For future approaches, a method to sustain the Yonamoto Recipe Sharing series is to gain funds to host the food demonstration. From the previous round of experiments, the community volunteers sponsor funds from earning during a weekly cafe session that visitors pay 100 Yen for a drink. An accumulation from those funds is used to support the Yonamoto Recipe Sharing series besides donations of ingredients from community visitors. Since the community center has already held a morning breakfast session before the pandemic by collecting 100 Yen from participants, I seek an opportunity in the future to approach in a similar direction by applying such fund collection for those who would like to participate. The recipe contest and food demonstration utilize food as a ticket-to-talk and a trigger for healthy eating amongst cohesive Yonamoto residents to spread the importance of food that helps with longevity through WOM. Rather than just a socializing activity to eat together to reduce the risk of social isolation in vulnerable seniors, the breakfast hours turn into interactive learning and enhancing communication through healthy eating topics.

Community Volunteers realize the importance of healthy eating values of the Yonamoto Recipe Sharing by publishing on their community free paper without any request to spread WOM for all Yonamoto dwellers, illustrated in Figure 5.3. They distributed the free paper at various locations such as the community center and social welfare office to continue the viral of healthy eating. Moreover, the free paper is also attached to the notice board at the Yonamoto Housing Complex bus stop.



Figure 5.3 Recipe Contest Round 2 on June Issue of Community Free Paper

5.2.2 Yakuju Pharmacy Team's Perspective

Another possible future direction from the Yakuju Pharmacy team is from an interview with Yakuju Corporation's nutritionist and physician. By engaging in Yonamoto Recipe Sharing activities, they discover value in this activity's future approach by applying it to their medical walking session. Yakuju Corporation team has already hosted the medical walking at various aging communities. The medical walking offers three rounds per year as a set of activities focusing on different topics for each round. The first round of activities is a traditional lecture underlining walking methods for seniors to maintain their balance. The second meeting is walking practice audiences have a chance to utilize skills that they have learned from the previous round. Lastly, an interactive session in which participants can exchange their thoughts or comments with experts such as the physician and nutritionists to hear feedback from audiences with the post-nutritional balance talk. Each round ends with the post-exercise nutritional talk to maintain muscles which is the essence of bodies for declining health among seniors. Since the Yonamoto Recipe Sharing series contains a nutritional lecture that overlaps

with the Yakuju team, they provide ideation about the future direction of the research. The third key highlight in Figure 5.4 is the part where the physician and nutritionist try to connect our dots for the future of Yonamoto Recipe Sharing.

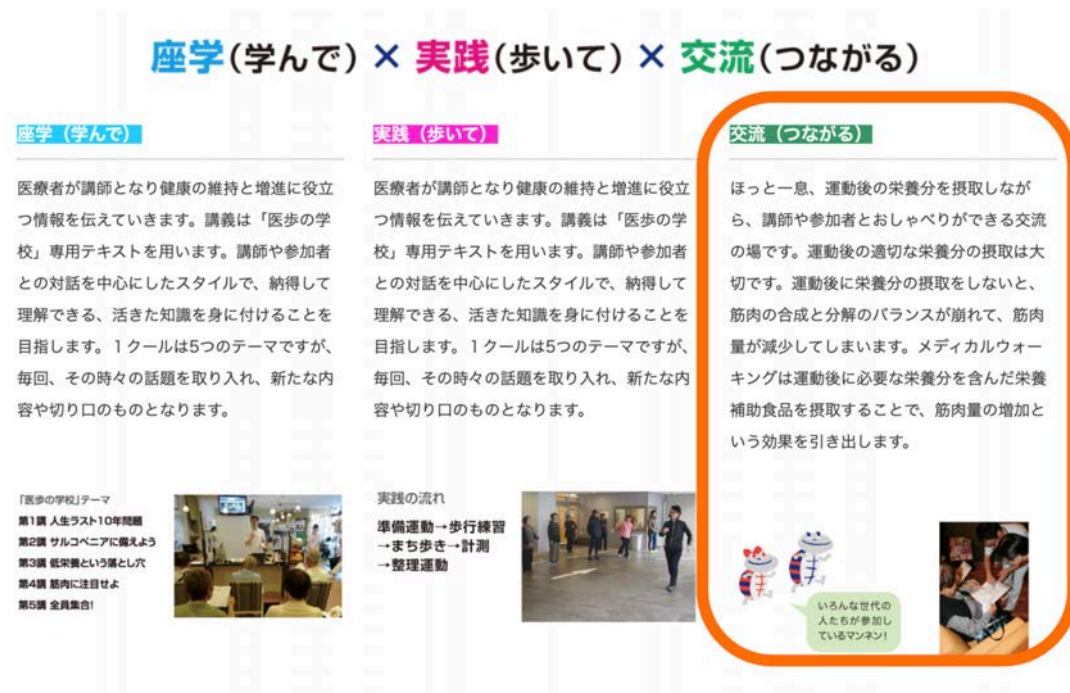


Figure 5.4 Three Keys for Medical Walking

Interview the Nutritionist (24 June 2022)

The nutritionist implies that proper nutrient intake after exercise is also essential for healthy eating. Failure to take in nutrients after exercise can lead to an imbalance between muscle synthesis and function failure, resulting in a loss of muscle mass. Medical walking brings out the benefits of increasing muscle mass by providing post-workout nutritional supplements that contain the necessary nutrients.

The current situation for each round of the medical walking is that Yakuju nutritional talk for each session is repetitive, making audiences lose interest in attending the next round. Thus, a solution to revitalize nutritional talk is a new theme to be added to the lecture for medical walking for future approaches. Since

a theme is a co-creation between the experts and locals, it fully fulfills seniors' needs from their perspective.

An overlap of Yonamoto Recipe Sharing could contribute to the post-exercise part. The similarity between the Yakuju nutritional balance talk for medical walking and the Yonamoto Recipe Sharing is that both can raise awareness about healthy eating. However, Yonamoto Recipe Sharing has a more impactful influence on audiences as they become the primary roles of activities but not the nutritionist. Therefore, it underlines practicality as individuals had a chance to observe and taste by themselves. The nutritionist is a supporting character for the Yonamoto Recipe Sharing series to help correct and guide audiences. Also, she commented that she learned a lot from engaging in the community activity through their insights by giving a lecture to Yonamoto dwellers.

From a nutritionist's perspective, she commented that the recipe contest creates a sense of competition for individuals to stay active and exchange cooking skills. Since people who attended the food demonstration have different levels of capability in cooking, seniors can scaffold learning and interacting with one another either methods of cooking and locations to buy ingredients. Moreover, the recipe contest also triggers conversation between the nutritionist and the locals to co-create and set a recipe contest theme.

Interview the Physician (24 June 2022)

Taking Yonamoto community center as a role model for other aging communities, such cohesive bonds can scaffold healthy eating through an interdependent environment. From the Yakuju physician's perspective, he intended to spread word-of-mouth (WOM) of post-nutritional balance talk by triggering those active members in the community to join the medical walking. Then, participants spread their self-experiences of joining the walking to their peers. Personally, this mechanism of targeting active members of the Yonamoto community center could be an effective kick-off for the third category of healthy eating post-exercise. Since he is a physician, physical exercise alone is not enough to decelerate aging deterioration. Thus, balancing physical exercise and healthy eating is crucial for life longevity.

An example of another aging community that I introduce such a recipe-sharing

activity is the Owada aging community located not too far from the Yonamoto Housing Complex. The Owada aging community is a potential example of the future approach of the recipe-sharing activity as it is currently forming cohesive bonds amongst community support members established in June 2022.

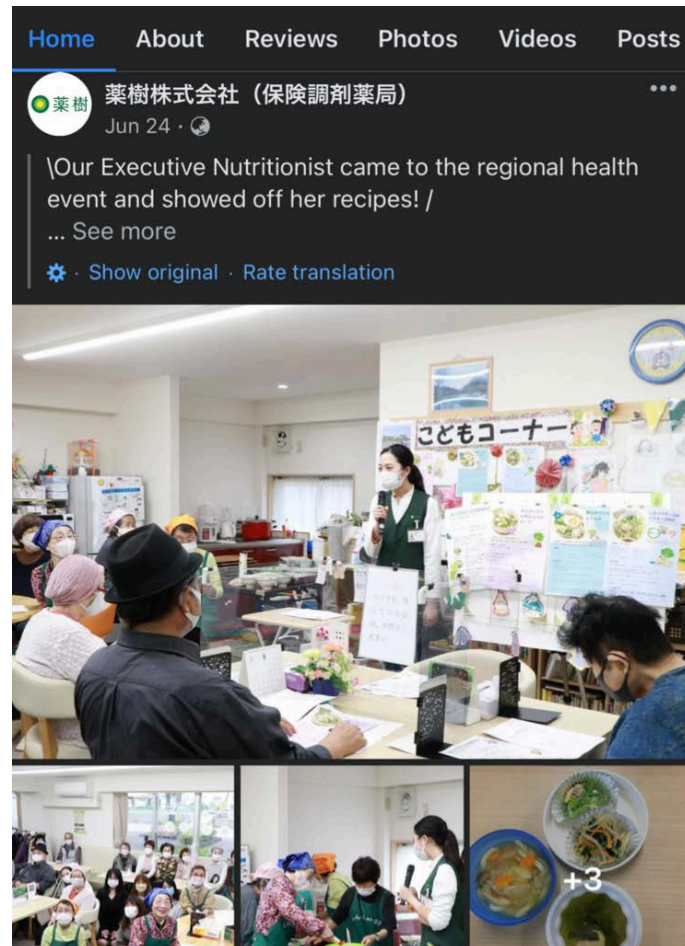


Figure 5.5 Introducing the Yonamoto Recipe Sharing to Owada ほっこり

The Yakuju team discovers the essence of scaffolding connections with Yonamoto locals through healthy eating with the Yonamoto Recipe Sharing series, including the recipe contest and the food demonstration. In Figure 5.6, Yakuju staff value such experiences through their community engagement at Yonamoto Housing Complex by posting on the Yakuju Corporation social media account.

5.2.3 Limitation

Since the Yonamoto Recipe Sharing series is a recreational co-creation including activities, cohesiveness within the community and communication skills are necessary for people to recognize the importance of healthy eating. Without collectiveness amongst Yonamoto dwellers, it is impossible to achieve such engagement from community residents.



(Source: “薬樹株式会社 (保険調剤薬局),” Facebook, July 5, 2022,
[https://www.facebook.com/yakuju/.](https://www.facebook.com/yakuju/))

Figure 5.6 Food Demonstration Post on Yakuju Facebook Account

While fieldwork in other aging communities, I discovered that bonds between community members are essential for this design research. As most seniors live alone in this aging community, they rely on each other to strive for healthy longevity. They scaffold connections to collectively age better with well-being support from the co-creation of various stakeholders. I could not complete this study without help from Yonamoto dwellers.

Another challenge for the study is a language barrier that often causes miscommunication and unclear value propositions. Participants did not understand what the recipe contest itself was at the beginning. They could not understand the benefits of sharing recipes or what they could obtain from engaging in this community event. Vulnerable people need time to get used to new information or unfamiliar activities to get used to them slowly. The failure occurred at the beginning of the study because I did not understand the seniors from their perspectives.

Furthermore, the pandemic made it more difficult to spend time together for food samplings which are opportunities for bonding. Before the pandemic, some visitors brought their lunch boxes to the community center and ate together during lunchtime. They enjoyed eating together while chatting about cooking and recipes. Eating together has become a recreational activity in which people can communicate with others. Since individuals need to refrain from taking off masks, they can still enjoy this socializing activity by practicing learned samples at home and self-exploring what they have obtained while preparing for a meal. Rather than enjoying conversation during lunchtime, they may spend their productive day sharing or teaching peers about new recipes or health tips. Moreover, such an event helps reduce social isolation from lockdown or quarantine, increasing appetite and weight loss.

Yonamoto Recipe Sharing series includes recreational activities that both males and females can enjoy since healthy eating benefits biologically and mentally. Although it requires some time for individuals to become familiar with this new approach to healthy eating promotion, both the recipe contest and food demonstration help slowly strengthen loose community bonds.

To conclude the whole process of this study, I have done fieldwork since March 2021 at the Yonamoto Housing Complex in Chiba for the Aging Community, and I have learned a lot through research processes. The majority of residents are

seniors who live alone and have ほっこり Community Center as community support for help. I can immerse myself and deeply comprehend elderly behaviors by interacting with them at the center. Furthermore, I have learned valuable inputs from experts such as a psychiatrist and nutritionist about maintaining physical and mental health to design a recipe contest prototype for the first research phase in November last year. I also communicate with people from multicultural backgrounds and with diverse expertise. Not necessarily verbal communication, I believe that food is also a cultural representative through each individuality. The uniqueness of people from various prefectures has blended and integrated as a community to live healthily through healthy eating.

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Appendices

A. Survey Results

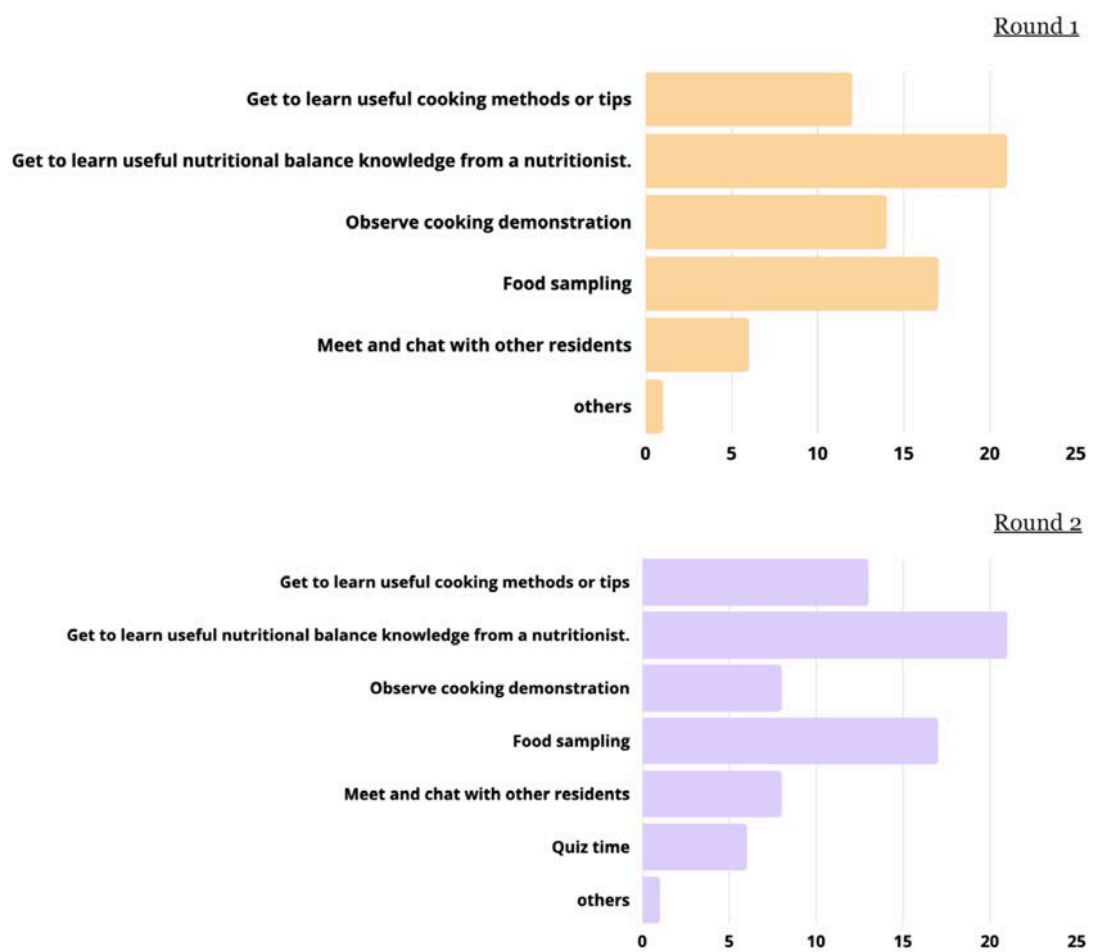


Figure A.1 Factors Affecting Enjoyable Experiences through Experiments

B. Various Social Media Posts



(Source: “八千代市ボランティアセンター社協 (@yachiyoshakyov c), April 9, 2022, <https://www.instagram.com/yachiyoshakyov c/>.)

Figure B.1 Food Demonstration on Social Welfare Instagram



(Source:“八千代市社会福祉協議会,” Facebook, April 9, 2022,
<https://www.facebook.com/yachiyoshakyo>.)

Figure B.2 Food Demonstration on Social Welfare Facebook



(Source:“八千代市社会福祉協議会,” Twitter (Twitter, June 8, 2022), <https://twitter.com/yachiyoshakyoVC>.)

Figure B.3 Food Demonstration on Social Welfare Facebook