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Ethical Considerations and Dilemmas: Implementing Welfare Technology Practice into Elderly Nursing Homes in Japan from the Perspective of Caregivers

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ABSTRACT

With the development of technology, human life expectancy has been increasing. Japan is the leader of this global trend, and its declining birthrate and aging population has become more and more serious every year, by which pressures the social security and welfare system and the shortage of caregivers. As a solution to this demographic challenge, the concept of welfare technology attracts attention. By implementing digital devices, it is considered to improve efficiency and creates more advanced services. However, it is demanding to install them because of financial and ethical barriers. In order to grasp the core essence of this issue, this study used qualitative research methods to interview caregivers of nursing homes where digitalization has been promoted. Based on the data, a comparative analysis with extant literatures and Bourdieu's theory of capital revealed that those who are at the forefront of the digitalization believe that the ethical concerns that are commonly raised can be overcome by digitalization. The data generated from the in-depth interviews also exposed the deep essence of the Japanese nursing care industry; namely, an urgent need for organizational reform within each facility and a review of human resource training of caregivers. This is because the cultural capital and habitus of each individual defines the code of behavior. Similarly, it stressed the importance of social capital, which euphemistically suggests the significance of cultivating interchangeable capital. Thus, the study unraveled the milestones that the nursing care industry could follow: first, human resource training and organizational reform, and later, digitalization.

Key words:

aging population, elderly care, welfare technology, ethical dilemmas, capital, habitus

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INTRODUCTION

1.1 Background to the Study

Population ageing is a global phenomenon, which has been recently going on in many regions on this planet. According to United Nations (2020), there were 703 million persons at the age of 65 years or over in 2019 and it will be projected to double in 2050. As a reaction to this global trend, the organization states that it is a human success of public health to achieve the longevity revolution (United Nations, 2020). However, at the same time, it can bring a lot of challenges in many industries. In response to this, European Paliramentary Technology Assessment (2019) reports as follows: since more and more older people reach retirement years, there will be generally less and less labor forces in employment. In addition, despite the decreasing number of those employed, the budget spent on pensions will no doubt rise; on the other hand, the share of taxes shrinks accordingly (European Paliramentary Technology Assessment, 2019). These implications triggered by ageing population finally come to face a demographic challenge: constraint on welfare service for the elderly. Older people are likely to have diseases or mental disability associated with ageing, such as dementia, which means that the cost on health and social care will swell up. Since senior citizens have no choice but to rely on social welfare, such as pension system and elderly caregiving, population ageing will pressure the fiscal sustainability of public transfer, especially in the region where its public sector plays an important role in social assistance and services (United Nations, 2020). The UN report (2020) implies that it is extremely important to establish

strong social protection programs so that older persons have enough social support. To react to this demographic challenge, especially in the context of Europe, Davoudi, Wishardt and Strange (2010) presented two scenarios: “silver century” and “open borders”. The former scenario, which limits migration flow, expects stabilizing social policy. In contrast, the open borders scenario tries to make up for the demographic deficit with welcoming potential caregivers and encouraging immigration (Davoudi, Wishardt and Strange, 2010).

While some of the European countries have actively encouraged immigration flow, some governments have strengthened the social services for older people. As one of the plausible methods, welfare technology has been promoted in the land of welfare, the Nordic region. The term “Welfare Technology” is normally used in the Scandinavian countries (Cozza *et al.*, 2018; Lee, 2018). However, at the same time, there seems to be no specific definition yet (Östlund *et al.*, 2015). A lot of academic discourses agree that the central idea of welfare technology is technological application used to achieve higher quality of welfare services as well as to increase safety and promote its effectiveness (Hofmann, 2013; Cozza *et al.*, 2018; Lee, 2018). According to Nordic Welfare Centre (2010), the idea of welfare technology has gained international attention and it aims for “sustainability of Nordic welfare model”. In fact, recently lots of scholars in different academic field from sociology to innovation studies have discussed the importance of relationship between aging and technology (Cozza, De Angeli and Tonolli, 2017). Welfare technology is understood as a technological application which clusters supportive, responsive, preventive functions (Beech and Roberts, 2008; Cozza *et al.*, 2018). Similarly, other terms “smart home” and “ambient assisted living” exist; “smart

home" is a residence equipped with sensors or other digital devices which make it possible for caregiver to monitor their service users and detect emergent accident such as fire and fall from the distance and help them promote independence (Demiris and Hensel, 2009); this can be also expressed as "*telecare*" (EPTA, 2019). They also argue that you can distinguish smart home applications from other stand-alone devices in that the former devices do not need to be operated by the end-user (Demiris and Hensel, 2009). "Ambient assisted living" is a similar term to welfare technology used in western Europe (Lee, 2018). Thus, welfare technology is considered to be important means to overcome the demographic challenges as well as promoting better social welfare, especially to senior citizens. But still, welfare technology is an emerging academic area which has room for development, improvement and ethical considerations to implement digital devices in elderly care.

1.2 Position of "Welfare Technology" and "Caregiving" in the Study

Here, I would like to make my position clear in this study. The term I would like to define in this study is welfare technology. As stated above, welfare technology has no specific consensus on the definition. The core of welfare technology is digital implementation in welfare service in order to increase safety, promote high quality of the care and effectiveness (Hofmann, 2013; Cozza *et al.*, 2018; Lee, 2018). Similarly, Japanese ministries have reported on care robots, an equivalent term in Japanese to welfare technology. According to an official report announced by the Ministry of Health, Labour, and Welfare (MHLW) (2013), care robots are inclusively defined as: robotics device for caregiving with sensory, controllable, discernible and operative functions to promote independence of service users as well as alleviate burden on caregivers. I regard care

robots as welfare technology in this study because both have common in the central concept of improving caregiving in terms of efficiency and safety. Based on this, welfare technology used in this study is specified within technological application for nursery homes. Smart home which makes it possible for caregivers to look after senior citizens remotely is not a part of welfare technology in this research. As such, telecare and telehealth are excluded. Along with this definition, the expected welfare technology will be digital devices used in nursery home with supportive, responsive and preventive functions. These functions are equivalent to the ones the Japanese government has set as nursery robots (2013), which means these kinds of welfare technology might be further implemented in the near future. Following the categorization made by MHLW (2019), supportive technology includes, for example, transfer aid, walking assist, excretion assist, mobility assist; responsive technology contains predictive monitor system, remote night surveillance, communication robotics; and preventive technology involve the ability to predict excretion moment and remotely monitor the elderly and prevent fall or such things.

In terms of position of "caregiving", it needs to be theoretically addressed here. Within the social work discipline announced by International Association of Schools of Social Work (IASSW) and International Federation of Social Workers (IFSW) (*Global social work statement of ethical principles*, 2014), the discipline clarifies:

> *"Social work is a practical-based profession and an academic discipline that facilitates social change and development, social cohesion, and the empowerment and liberation of people." (IASSW and IFSW, 2014)*

Following this discipline, caregiving in this study is positioned as a means of social integration while empowering and enhancing the wellbeing of service users, i.e., the

elderly who receive care. They should be treated as individuals without neglecting them. Besides, professional integrity is emphasized in social work as it is counted as one of the most vital aspects of the discipline. Therefore, caregiving in this study refers to the act and process of arranging the welfare of senior citizens by those who have professional skills and knowledge.

1.3 Japanese Elderly Care System

In this section, I will describe the current Japanese elderly care system and the industry. Within European countries, their attitude towards social welfare and insurance varies. For example, Oftedal (2019) presented that most of the Scandinavian countries apply the Beveridge model whose healthcare is provided and financed by the government through the tax; on the other hand, Japan applies the Bismarck model (Figure 1) which is also governmental-power driven but the healthcare provider can be private.

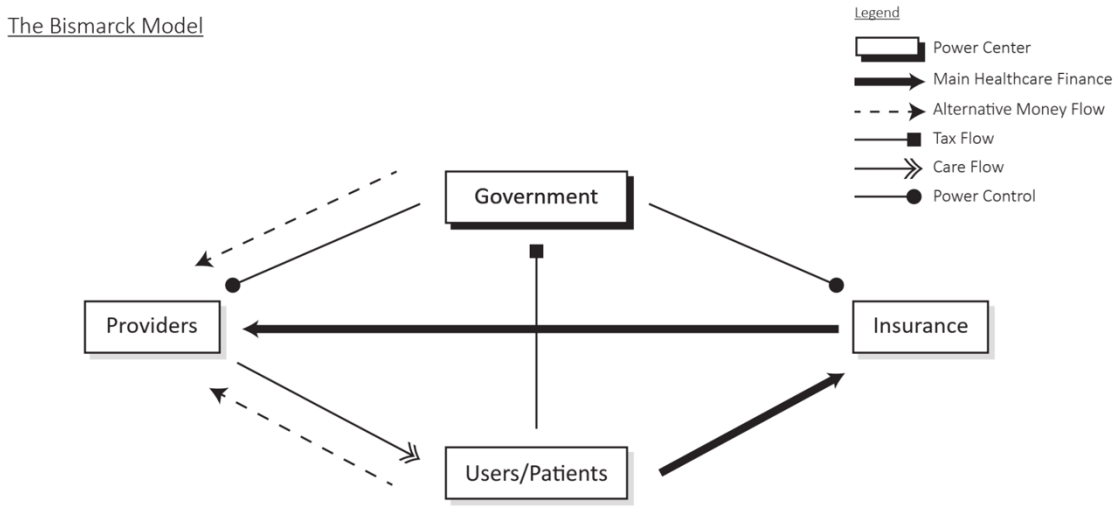

Figure 1: The Bismarck Model (Oftedal, 2019)

Here, I will present the Japanese elderly care and how it has developed so far, based on official reports by the government and statistical data, including utility of and attitude towards welfare technology, like robotics devices.

1.3.1 Overview of the Elderly Care System in Japan

The current nursing care insurance has been in force since the year of 2000 (*Current Public Nursing Care Insurance and its role*, 2018). Under this insurance system, people aged 40 years and above are supposed to join the insurance and pay a certain amount of insurance fee every month. The insured are categorized into 2 groups, based on their age: People aged 40 to 64, and 65 years and above. The service for young adults is limited only for those who have critical illness such as terminal cancer or those who are diagnosed as nursery care in need or daily support in need. As for older adults, the care service is open for people who are diagnosed as being bedridden or who need nursery care or support due to dementia or something. To receive the care, senior citizen has to be admitted to deserve the service by the public sector or a medical doctor. The number of insured people aged 65 and above increased by 1.6 times from 2.2 million people in 2000 to 3.5 million people in 2018. In terms of people who receive any nursery care, the number has sharply increased by more than 3 times since 2000, from approximately 1.5 million in 2000 to 4.7 million in 2018. The core concepts of the insurance have three pillars: support for senior citizens to live independently, service user's freedom to choose services, and applying social insurance policy that the relation between benefits and burden is clear. The nursery insurance system was created for supporting senior citizens by the whole society.

1.3.2 Monetary Flow of the Care System

I will present what is the financial resource and how it functions (Figure 2), following the report of the current care system announced by MHLW (*Current Public Nursing Care Insurance and its role*, 2018). There are three stakeholders: public sector, nursing home and the insured. Firstly, the elderly care consists of two financial resources: tax and insurance fee, and each ratio is 50% respectively. The tax can be more divided into three. A municipality and a prefecture cover 12.5% respectively and the government covers 25%. Regarding the insurance fee, the insured aged between 40 and 64 covers 27% and the insured aged 65 and above 23%, although this ratio can change depending on the number of its population. Secondly, the insured. The care is normally open for those who are admitted to receive care service because of mental and physical disorder such as dementia. They are supposed to pay 10% of the charges and the rest of the 90% fee is covered by the tax and the insurance fee. However, for those who receive a certain amount of income, the fee will be risen to 20% and 30% at the maximum. Thirdly, most of the senior citizens are expected to pay 10% of the charges and additional fee as well if they receive any services such as accommodation and food expense in a nursery home.

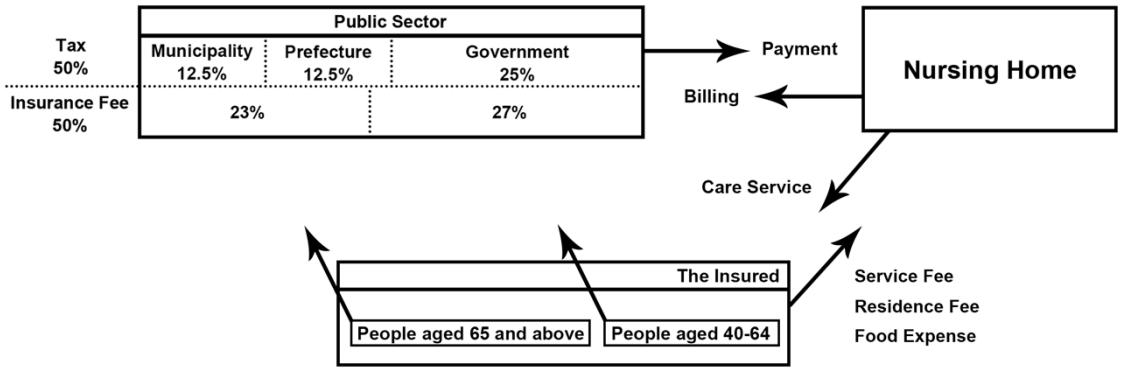

Figure 2: System of Nursing Insurance (MHLW, 2018)

1.3.3 Statistical Data on Elderly Care

In this section, I will present the current elderly care industry based on statistical data from critical issues they face to the prevalence rate of welfare technology as of today. The official report on nursery industry conducted by a public interest incorporated association (2020) revealed that the average age of caregivers is 48.8 years old. Among them, the number of elderly caregivers aged 60 and above accounts for 22.4% of all. Additionally, the proportion of elderly caregivers has increased from 18.9% in 2015 to 22.4% in 2020. This illustrates aging among caregivers. In response to the aging workforce, nursery homes claimed chronic shortage of caregivers, especially recruiting new caregivers. In fact, the report on nursing (2020) confessed that 56.7% of elderly care homes answered they had difficulty in recruiting new staffs, which was the biggest issue they had faced. At the same time, as the second critical issue (47.5%), they claimed deficiency in financial resource to employ new caregivers. A different report on elderly care, statistical report on elderly care industry (2017), also revealed that 55.2% of elderly homes acknowledged lack of human resource.

When it comes to welfare technology, the report on nursery industry (2017) illustrated the prevalence rate. At the moment, 8.3% of the elderly homes implemented any kind of digital devices to their care. As the reasons and challenges they faced, 59.3% answered financial scarcity to introduce digital devices. Fear to improper technical operation came to the second (30.2%). Besides, as the third challenge, 29.9% of them had negative impression on cleaning and maintenance of the devices. Thus, the prevalence rate remains low standard. Therefore, a number of nursery homes have negative attitude towards implementing digital tools into practical caregiving or cannot implement them because

of financial aspect. From the perspective of senior citizens, generally speaking majority of Tokyo citizens aged 20 to 64 answered positively to implementing welfare technology, including supportive, preventive and communicative devices (Tokyo Metropolitan Government, 2016). In terms of sensory monitor, nearly 80% of them stated that they preferred application when they receive nursery care. On the other hand, some of them answered negatively. The reasons were as follows: fear against privacy violation, concerns on safety and technical defection and so on.

1.3.4 Governmental Attitude towards Welfare Technology

Although the previous section revealed the low figure of the diffusion rate of welfare technology, it does not mean that the public sector has not taken any actions at all. Rather, the public sector has positive attitude to welfare technology in that it expects welfare technology to promote independence of senior citizens as well as work as a plausible methods against drastic ageing population in Japan and improving productivity of the care (*Introduction to Welfare Equipment and Care Robots,* 2013). An official report on care robots (2019) indicated that MHLW announced that it would accelerate development of digitalization of elderly care, collaborating with research facilities and nursery homes. Financially speaking, MHLW (2019) also announced that it would prepare 30% more investment budget than in 2018 and extensive subsidy to elderly homes so that they can afford digital devices. Likewise, the ministry (2019) has also provided selected nursing facilities with financial support to do modelling research on welfare technology. In municipality level, for example, the Tokyo metropolitan government (2018) has discussed application of robotics in elderly care and acknowledged that the implementation has still been immature and under development in that there are digital

devices which do not suit specific cases and meet practical demands. In response to this, the Tokyo metropolitan government (2018) has collaborated with nursery homes to find out possible solutions to deal with this dilemma. As mentioned so far, the government and municipalities have worked on further promoting welfare technology to cope with challenges in elderly care industry and also improve the quality of care, even though it has still been on the process and trying to find out a proper way to go. Overall, these reports indicate that the public sector has relatively positive attitude to welfare technology.

1.4 Personal Inspiration for This Study

Located in far east from Europe, Japan is a country of senior citizens. Once you wander around the metropolitan city, Tokyo, or perhaps any other cities like Osaka, you soon see elderly people walking on a crossing with a stick in front of and behind you. In a calm suburb or countryside, you will see a lot more. As a matter of fact, people aged 65 and above account for 28.8% of the whole Japanese population (*Statistics Population*, 2021). This figure will be estimated to increase in between 35.6% and 41.2% in 2065 (*Population Projections for Japan: 2016-2065*, 2017). Known as the most advanced aged country on this planet, Japan has a critical and ongoing problem in the national level, which is elderly care. The shortage of caregivers is an issue which should be addressed as soon as possible. The Japanese government took Economic Partnership Agreement (EPA) with some Southeast Asian countries in order to welcome potential caregivers, which can be interpreted as open borders scenario Davoudi, Wishardt and Strange (2010) elaborated. However, only 5.4% of the nursey homes has accepted caregivers outside of Japan (*Statistical report on elderly care industry*, 2017). Moreover, the official statistical report on elderly care industry (2017) revealed that 80.1% of the nursery homes were not

planning to welcome potential caregivers from outside of Japan. I, personally, one of the Japanese citizens, believe, to some extent, that digitalization of welfare contributes to a functional and sustainable measure to solve the problem. Thus, I would like to explore the possibility of welfare technology practice in elderly care in the context of Japan, by having interviews with those who are involved in that field and likewise present welfare technology in elderly care as a plausible solution to achieve sustainable caregiving for senior citizens.

1.5 Problem Statement

Looking at the Japanese society, there is a twisted relation between technological development and its implementation. According to Global Innovation Index (2020), Japan was placed on 16th out of 131 in the rankings. In addition, in every sector, such as business sophistication and human capital & research, Japan has been admitted as one of the best performers. This objectively illustrates that Japan is a land of technology and innovation. However, in reality, technologies Japan has developed so far do not work out good enough yet in everyday life. Taking cashlessness for an example, payment by non-cash methods accounted for approximately 20% in 2016 (*Current Status and Significance of Cashlessness*, 2020). This figure is relatively low, compared to other innovative countries such as Denmark. This might also be referred to in elderly care industry. According to the statistical report on elderly care industry (2017), nearly 28% of the nursery houses pointed out that they had so much paperwork of documents to report to municipality. Though I cannot fully be optimistic towards welfare technology, it implies that there is still a room for improvement for the industry, especially by accelerating

digitalization. Thus, Japan has ability to develop technology, but at the same time lacks ability to implement it well. There is a twisted relation between practice and research.

1.6 Research Questions

The main objective of this study is to find out caregivers' perspective on elderly care and how it can be improved by promoting digitalization. Specific research questions include the followings:

- How do caregivers in elderly nursery homes in Japan ethically reflect upon the application of welfare technology?
- What dilemmas do they faces in implementing welfare technology?

1.7 Significance of the Study

Significance of this study lies in the first strategic move in Japanese care industry. Welfare technology still remains new to Japan. The official report regarding the current elderly care revealed that 75.4% of the nursery houses do not implement any kinds of advanced digital devices for elderly care (*Statistical report on elderly care industry*, 2017). Of course, the attitude towards technology in general depends on person to person. Moreover, it is critical to consider how welfare technology should be utilized into practice after deliberate consideration. Likewise, the same statistical report (2017) uncovered that approximately 25% of the caregivers are unaware of what kind of welfare technology exist. In other words, there is a room for consideration on their knowledge and how the elderly care system institutionally functions before moving on practical issues when implementing advanced robotics. Therefore, in this research, I place the central focus on the voice of caregivers, along with possible problems of welfare technology such as

ethical dilemmas. To sum up, the study is significant in that it will potentially exploit welfare technology as an emerging industry in the context of Japan and bring further implementation in the future.

1.8 Outline of the Study

Following this chapter, the thesis will continue with six chapters. In the next chapter, it will provide literature review and theoretical framework as the glass of analysis tools to answer the research questions. In terms of literature review, I especially emphasized ethical considerations. As for theoretical framework, the concept of capital and habitus by (Bourdieu, 1986, 1990) was used in this study. Chapter three focused on methodology. In this chapter, I will present scientific position in this research and research process, including interview methods and data handling. Afterwards, the fourth chapter of findings will come. In this chapter, the data generated in the in-depth interviews conducted will be presented. Chapter five will involve a discussion of the findings within extant literatures and the theoretical framework. Lastly, in chapter six, the thesis will close with answers to the research questions and conclusion of the whole study.

CHAPTER

- 2 -

LITERATURE REVIEW & THEORETICAL FRAMEWORK

2.1 Introduction

This chapter opens with literatures review on ethical considerations regarding welfare technology. Particularly, I will focus on how ethical dilemmas have been interpreted and discussed in extant literatures. As the second part, I will present theoretical framework by Pierre Bourdieu. Both literature review and theoretical framework will be used as the analytical glass to discuss findings from the interviews.

2.2 Ethical Issues Regarding Welfare Technology

It is uneasy to implement digital welfare. There are many kinds of ethical and technological barriers in multidimensions raised by welfare technology. Here, I present four different types of ethical and technological dilemmas which are highly necessary to be considered beforehand, based on previous academic discourses. The first dilemma is "violation of privacy and confidentiality". There is a concern related to privacy of service user. As welfare technology goes, more dataset of patient is stored. Some people are afraid of violation of privacy and leaking the vast amount of personal information to the third party. Besides, even though monitor for surveillance might strengthen the safety for patient because it can notify caregiver with alarm under emergency, it might violate private life of patient (Nilsen *et al.*, 2016). It is important to be thoroughly discussed among all the stakeholder, based on the condition that patient has the legal right to control its own privacy and information (Demiris and Hensel, 2009). Secondly, technical accident

and its responsibility have strong attention from its stakeholders, such as caregiver and service user and its family members. Welfare technology aims for improving the quality of care and its safety. However, people cannot always rely on technology because it might have some defects, which eventually causes adverse influence on service users (Nilsen *et al.*, 2016). Hofmann (2013) points out the responsibility for implementing welfare technology and those who have it. It is quite important to make this point clear beforehand. Who should take the responsibility in case of unexpected accidents should carefully and thoroughly be considered and both caregiver and service user should agree on where the responsibility lies. Thirdly, equality of distribution can make things complicated. Not everybody can have access to welfare technology in terms of financial inequality. The initial purpose of welfare technology is distribution to all (Hofmann, 2013; Nilsen *et al.*, 2016). But in reality, it is not easy to be accessible in a large scale. This brings inequality of welfare and also will not be delivered to people in desperate need. Thus, welfare technology might bring more unequal world of welfare, although every single senior citizen who need support should equally have access to welfare service. Lastly, people are worried about dehumanization caused by digitalization. In some aspects, welfare technology promotes dehumanization. The more digital devices people use in service, the more patient rely on them. Since welfare technology has possibility to change the way of communication from face-to-face direct conversation to chatting via laptop screen (Demiris and Hensel, 2009). This means welfare technology interferes the pure communication between caregiver and user. In addition, Huryk (2010) finds out that workers in healthcare feel the implementation of technology leads to dehumanization of care.

2.3 Theoretical Approach

In this section, I will present a theoretical framework I used to analyze my empirical data. In this study, I employed theoretical frameworks advocated by Pierre Bourdieu to understand and interpret dilemmas eldercare industry faces.

2.3.1 Capital

The theory of capital has been applied to this study to understand the context of how much capitals affect the current elderly care in Japan and also how capitals influence the implementation of welfare technology in order to accelerate and improve the care. Theory of capital has been propounded by Bourdieu (1986). Bourdieu (1986) defined capitals as three types: economic capital, social capital and cultural capital. As he states, economic capital is a materially tangible capital people normally associate with when they think of capital, such as monetary assets. He added that economic capital is the basis of the other types of capital in that it can be convertible to the others. Social capital, as he claims, is a collection of durable or institutionalized networks and relationships which can make credentials by belonging to them. These can be exemplified by social class, family, tribe, school, and party (Bourdieu, 1986). Such belongness more or less entitles people to hold credit. Finally, cultural capital is both a tangible and intangible capital. Bourdieu (1986) categorized it further into three forms: embodied state, objectified state, and institutionalized state. The embodied cultural capital exists in an intangible form. It can be rephrased as an integral part of a person, such as knowledge, experience and cultivation (Dalal, 2016). Although this embodied capital itself cannot benefit, it makes profit when, for example, converted into the objectified cultural capital. Bourdieu (1986) claims that the embodied state can be transmitted innately from people to people because if people

are raised, surrounded by objectified cultural capital, then they embody their cultural capital without knowing. On the other hand, it can be acquired property, meaning that people can cultivate it with effort. The objectified state is a tangible capital. For example, people who have famous paintings at home may be regards as those who has embodied state cultural capital so that they are familiar with objectified cultural capitals, especially arts. Paintings, books, musical instruments are objectified cultural capitals and they function as symbolic capitals. The institutionalized state is in the form of academic certifications. With institutionalized cultural capital, the certificate of academic or cultural competence guarantee its value (Bourdieu, 1986).

Social capital can be useful to analyze benefit of social connection and relationship among different stakeholders in nursing care industry. The theoretical glass of social capital is a critically analytical tool to scrutinize how hidden and invisible power relationship works. Cultural capital focuses in more individual level. Categorized into three forms, they are interrelated to one another. In particular, decision making process regarding whether welfare technology should be implemented or how it can be successfully employed might depend on users' cultural capital. An official report clarifies that 24.9% of the nursery houses answered they do not know what care robots exist (*Statistical report on elderly care industry*, 2017). This can be examined with the glass of cultural capital. That is because if they are unaware of welfare technology as an option which might make the care effective and efficient, namely embodied cultural capital, they cannot choose the objectified capital.

2.3.2 Habitus

Habitus is one of Bourdieu's primary theoretical frameworks to overcome dichotomies, such as micro/macro, empirical/theoretical, in social life (Power, 1999). Habitus, as Bourdieu put it, is a way of describing embodied social structures and dispositions (Power, 1999; Dalal, 2016; Nairn and Pinnock, 2017). The concept of habitus is employed in this study to understand practices and behavior of caregivers, resulting from social structure around them and their way of thinking. As Bourdieu claimed, habitus is durable disposition "of standing, speaking, walking, and thereby of feeling and thinking" (Bourdieu, 1990). Exploring history in individual and academic background, it will reveal how they have shaped their attitude, thought processes and emotional deportment (Dalal, 2016). The reason why welfare technology has not been drastically implemented in the industry yet in Japan can lie in their habitus by a complex internalized core. Thus, directly or indirectly, their attitude to digital devices can possibly be traced back to their everyday life. By more extension, habitus more or less affects organizational structure and its management. Here, Bourdieu pointed out habitus can be reproduced within the system (Dalal, 2016). Thereby, perhaps the metabolism in elderly care has been less efficient because of habitus embodied in the industry or caregivers.

To make it clearer to understand the logic of practice, Bourdieu interrelated habitus with cultural capital (Reay, 2004). He explicitly clarified the interrelation between the two concepts with a formula, "[Habitus] [Capital] + Field = Practice" (Bourdieu, 1984). Along with the formula, human behavior and practice can be elaborated within the interrelation in that cultural capital can influence habitus.

Thus, Bourdieu's theoretical frameworks are used to understand how social capital affects institutional dilemmas as well as how much cultural capital is important when considering its implementation. In understanding phenomenon with use of capital and habitus, the study will be able to assess how much it is possible to apply welfare technology into practice as a good alternative to improve the current elderly care in Japan.

CHAPTER

- 3 -

METHODOLOGY

3.1 Introduction

In this chapter, I will present methodological procedures used in collecting data for this research and also how I interpreted and analyzed the data. According to Creswell (2014), methodology is defined as an operational framework for collected data so that it can be understood more precisely. In addition, I understand that presenting methodology ensures how I carried out studying phenomenon in nursery houses in Japan. As such, I will outline the process I took during the course of my research. The main source of data for the study was based on online interviews with caregivers in nursery houses in Japan.

3.2 Choice of Research Design

This study employed a qualitative research as the most appropriate measure. Qualitative research explores and produces descriptive data, deriving from participants' lived experiences (Taylor and Bogdan and DeVault, 2010). Likewise, Rutberg and Bouikidis (2018) also elaborated that qualitative research includes human perception and lived experiences as its core concept. They further argued that the purpose of the research is to generate "a rich narrative from participant interview". Starks and Brown Trinidad (2007) suggested that researchers can analyze institutional and social process and practice. As previous academic discourses which were presented in the chapter two imply, research on welfare technology should stick to those who are directly involved in the front line, much more than numeric data. That is because major issues people are significantly

concerned about are ethical dilemmas, such as privacy matter, indeterminate responsibility to technical accidents, equal distribution to senior citizens and risk of dehumanization. To find out the validity of welfare technology into practical setting and how much the implementation can be promoted in the future, critical data should be derived from people who have more or less experienced welfare technology. Therefore, standing a position of qualitative research, this study focused more on and reflected on the experiences of caregivers in nursery houses.

3.3 Philosophy of Science

I situated myself in interpretative phenomenology as scientific position. Interpretative phenomenology, also known as hermeneutical phenomenology, is advocated by Heidegger. Phenomenology, as Roberts (2013) put it, is particularly useful in terms of detailing participants' lived experiences. Van Manen (2017) repeatedly claimed the importance of lived experience in phenomenology. In this sense, as Given (2008) claims, phenomenology is supposed to focus on studying the phenomenon as the way we experience it, not on conceptualizing or theorizing it. In order to more precisely clarify my standpoint within phenomenology, how interpretative phenomenology is important and related to this research should be addressed. Lopez and Willis (2004) stressed its freedom of interpretation, which encouraged me to go beyond informants' sheer description and inductively reveal "core concepts and essences" embodied in narrative. Interpretative phenomenology argues that it does not involve "bracket out", which is necessary in descriptive phenomenology. Unlike interpretative phenomenology, the central feature of descriptive phenomenology, brought by Husserl, is to have no bias when researchers explore the data (Moran, 2004). In this sense, "bracketing out" is crucial and

the researchers must exclude their biased and colored view and personal belief. Along with Husserl, the significance of descriptive phenomenology lies in raw data and unbiased reality. It discourages us to refer to prior knowledge and assumptions. Both phenomenological positions share the same entrance of analysis because description is the first step to go for both, but some processes of data analysis conducted such as decontextualizing and interpreting, they head to different exits. Therefore, I adopted interpretative phenomenology because it is more welcome in this study in that I have prior expectations which might be likely to influence my interpretation of the data. In addition, the source of data comes in Japanese. Data collecting, handling and coding were all conducted in Japanese but later on it was translated into English to interpret the data. Regarding the process of translation, its validity was carefully considered. Translation in cross-language should be conducted by those who are fluent in both the original language and target language, such as a professional translator or a co-researcher (Chen and Boore, 2010; van Nes *et al.*, 2010). However, since this study is my individual research and I have a good command of both English and Japanese and also have understanding to both, I understood it was rational that I translated the original data in Japanese into English. Besides, to ensure the validity of my translation, I did back-translation to correct possible misunderstanding and mistranslation if necessary (Chen and Boore, 2010; van Nes *et al.*, 2010). In terms of the timing of translation, I did it in the early phase when I completed coding the data because it allowed me to analyze the entire dataset more interactively (Santos, Black and Sandelowski, 2015). As such, these reasons made me choose interpretative phenomenology as the most suitable scientific position in this research.

3.4 Research Design

This study focused on ethical considerations and dilemmas regarding implementing welfare technology from the viewpoint of caregivers' perspective. To conduct this research more meaningfully, I designed the research including practice research perspective. Practice research is often referred to as an immature discipline in social work (Uggerhøj, Henriksen and Andersen, 2018). Collaborated with different stakeholders, such as researchers and practitioners and service users, the research can go in depth and it will possibly develop and create change in the researched field. Practice research is not simply a research method but is regarded as a meeting point between practice and research (Uggerhøj, 2014; 'Helsinki statement on social work practice research', 2014). Although practice research has not had consensus on its definition, the core discipline of practice research lies in "science of the concrete" and "mode 2 knowledge production". "Science of the concrete" is a scientific approach seeking for "pragmatic, variable and context-dependent" science ('Helsinki statement on social work practice research', 2014). It consists of dialogue in order to get closer to reality by looking at practical activities as well as notice little things from practitioners' or service users' perspective. Mode 2 knowledge production, on the other hand, is collaborating many actors with different interests. It emphasizes that each of them contributes a variety of competences and attitudes ('Helsinki statement on social work practice research', 2014), being bottom-up in orientation (Nowotny, Scott and Gibbons, 2001; Uggerhøj, 2011, 2014). Among the three different types of practice research, I employed participatory practice research (PPR), which is mainly carried out between research and practice (Uggerhøj, Henriksen and Andersen, 2018). This approach focuses on a close collaboration between different stakeholders (Austin, Fisher and Uggerhøj, 2014; Uggerhøj, Henriksen and Andersen,

2018). Uggerhøj, Henriksen and Andersen (2018) further claimed that the "PPR approach validates different kinds of expertise within the partnership". I, as a researcher who tries to analyze digitalization of welfare from ethical perspective, collaborated with caregivers in elderly homes who have got firsthand experience of welfare technology. Each stakeholder in this study has different expertise and knowledge, which made the research process more valid. Starting with researcher's perspective, the research will explore in depth by collaborating with practitioners' lived experience. Participatory practice research gave me insightful perspective to explore and analyze the data this study generated and brought new questions.

3.5 Interview

In this study, I collected data from interview. Among several qualitative research methods, interview is widely employed by many researchers and is one of the most common methods in qualitative research (Gill *et al.*, 2008; Stuckey, 2013). Research interview is more suitable when you explore social phenomenon where little is known (Gill *et al.*, 2008). Since welfare technology has not well been implemented into Japanese elderly care industry, as I demonstrated the prevalence rate, I understand that interview is suitable in this study.

3.5.1 In Semi–Structured Interview

Among different types of interviews, I applied semi-structured interview. As one of the advantages of semi-structured interview, its flexibility allows researchers to gain "the discovery or elaboration of information (Gill *et al.*, 2008)" that will not only be expected before the interview but also give them important insights on the research question(s).

Researchers might attain intriguing findings that cannot be attained with the initial questions, by encouraging diverging from the interview guide (Stuckey, 2013).

In-depth and semi-structured interviews were conducted online on April 2021 with five participants who are involved with welfare technology in elderly care. The interview ranged 64 and 89 minutes. Before interview, I shared an interview guide that includes the purpose of the research, ethical principles, such as anonymity, and interview questions so that they can have enough time to elaborate on the answers if necessary. Besides, in doing so, I expected that it would increase and assure the likelihood that they honestly elaborated (Gill *et al.*, 2008). The interview questions consist of three categories and questions are open-ended. To let them feel comfortable with answering, I followed Gill's (2008) statement that best interview starts with questions participants can easily answer and later on proceed to more sensitive topics. The first one is about the participant. Here, I focused on the following two things; how they have got the current position and built their career in the elderly care industry to possibly associate their academic background or occupational experience with welfare technology and analyze them. The second section, it included the central theme of this research, welfare technology from the ethical perspectives. Prior to ethical dilemmas on the process of welfare technology, I asked general questions on digitalization in elderly nursing, such as the reason why they started to employ it, pros and cons of using it. The third section includes questions that are more relevant to elderly care industry in general. On the whole, I asked additional questions, depending on their answers. All the interviews were conducted in Japanese as we all are native speaker. Besides, all the interview was audio recorded with the following participants' consent and was conducted via zoom because I could not reach them

physically.

As my own reflection on the whole interview process, all the participants looked happy and felt comfortable with answering. During the interview, I saw them smiling and talking in detail about their experience and current challenges they face and future strategy for better elderly care. Even though the expected interview duration was 60 minutes, as illustrated above, all the interview exceeded it greatly. They all looked back and described their application process in-depth and gave me a lot of examples of welfare technology or the specific situations, which made me profoundly understand the implementation process in Japan.

3.6 Study Area and Setting

This section describes nursery houses where the informants for this research work. The following includes detail in each nursery house, information on the informants and what welfare technology they apply. In this study, I had 4 interviews with 5 informants. Three of them work in a different nursery home as the head manager and the other two, the head manager and a caregiver, work in the same nursery home. Regarding the two participants, I have an interview with them simultaneously. To protect informants' confidentiality and make the reader easily identify them, I put a code name on each nursery house, Nursery House (NH) 1 to 4, and also each manager of caregivers, Care Giver (CG) 1 to 5.

3.6.1 Inclusion Criteria

Inclusion criteria were as follows; nursery homes where welfare technology has already been implemented in a practical setting in caregiving, participants as caregiver who has

experienced caregiving in front line situation with the use of digital tools. As mentioned in the previous chapter, welfare technology in this research was defined as digital devices and tools with supportive, responsive or preventive function which is employed in nursing homes. Apart from these two, no inclusion criteria were considered, such as age, gender and deep experience as a caregiver. However, in this study, I only had those who are in management position and passionate about welfare technology. This validity of inclusion criteria will be discussed in 3.10 Limitations of the study.

3.6.2 NH1 & CG1

NH1 is one of the special nursing homes for the elderly, located in Tokyo. The facility can accommodate up to 60 service users. NH1 is chosen as the only one model nursery house which promotes welfare technology among more than 500 nursery houses in Tokyo. It has continuously promoted welfare technology since 2016. As of 2021, it has applied wide range of digital devices, including tablets for nursing record and remote-communicable and portable devices as ICT, wearable transfer assistive apparatuses, monitoring robots, communication robots and bed-fixed mobile lifts. At NH1, there are 22 front-line caregivers.

CG1 works at NH1 as the head manager. His educational and occupational background includes; a bachelor of social welfare and a certification as a nurse. Before coming to NH1, he worked as a nurse at a university hospital. Originally, he worked as a nurse in NH1. From 2008, he became a functional training instructor to elderly people. He was engaged in applying welfare equipment, together with front-line caregivers. Since 2017, he has worked as the head manager in NH1.

3.6.3 NH2 & CG2

NH2 is a Tokyo-based corporation with 552 branches in 26 prefectures in Japan out of 47 in total. The main services they offer are different types of nursery houses for elderly people, home-visit care, care management, developing welfare equipment. They offer holistic welfare services in various fields. Regarding welfare technology, NH2 has applied welfare technology for 5 years, including ICT devices such as voice recognition system for technical intern trainees from abroad, and also cognitive sensor robots for monitoring, wearable walking assist and AI-leading care planning.

CG2 was originally a physical therapist and worked for a hospital. Currently he mainly works as a support manager of home-visit nursery service at the headquarter.

3.6.4 NH3 & CG3 & CG4

NH3 is one of the special nursing homes for the elderly in Japan, located in Ibaraki prefecture. The facility can accommodate up to 77 elderly people as residents, 30 as short stayers and 40 as day service users. Together with welfare technology, NH3 aims for better elderly care, involving different generations from kids, youth, to middle age people and by more extension the local social community. One of the remarkable accomplishments NH3 made is low turnover. According to the report on their webpage (*Facility Information*, 2018), it succeeded at lowering the rate of turnover from 13% in 2015, to 2% in 2016 and finally to 1% in 2017. As of today, NH3 implements different types of digital devices, which are cognitive sensors, wearable suits for transfer support and table-based cloud sharing report system. They also apply tiny digital technology such as Google Workspace to make it easier to communicate among caregivers.

CG3 works for NH3 as the head manager. After completing his bachelor of economics, he joined the nursing industry in 2000. With firsthand experience as a front-line caregiver, he has worked for there for approximately 20 years. His principle of caregiving is to be transgenerational co-assistance, in case of emergent situation and hyper aging society in the upcoming future.

CG4 is responsible for the inclusion of the local community at NH3. He completed a master in international relations and his research focused on hospital management in industrializing countries. He has worked at NH3 for one year. He has positively suggested and applied digital devices to promote effective and qualified caregiving.

3.6.5 NH4 & CG5

NH4 is a social welfare corporation, based in Tokyo. As one of the fastest, the most advanced nursing platforms in Japan regarding welfare technology, NH4 has earnestly worked on the implementation of welfare technology since 2009. In the contemporary period, NH4 itself has co-developed digital devices with robotic companies to make elderly care better with the devices which suit specific situations for service users as well as promote further implementation. Seeking a leading model of elderly care in Japan, NH4 has worked on and applied many kinds of welfare technology to improve front-line caregiving so far. Besides, the government has appointed NH4 as one of the six welfare corporations as a well-developed nursing platform for accelerating digitalization in the elderly care industry. With the longer experience of welfare technology in the frontline setting, NH4 has led the elderly nursing care industry in Japan to achieve effective and qualified care service.

CG5 is currently a board member and chief operating officer (COO) in NH4, being responsible for the general frontline operation and profit-related issues. Additionally, he plays important roles in the nursing care industry in Japan, outside of NH4. He is an executive board member in the CareTech association and also a governmental committee member of several ministries; such as the Ministry of Health, Labor and Welfare; the Ministry of Education, Culture, Sports, Science and Technology; the Ministry of Economy, Trade and Industry. Just after graduating from university with a bachelor of social welfare, he has worked for NH4 for 15 years. At the moment when he joined NH4, he started his career as a frontline caregiver. While working there, he also got the diploma of MBA, Master of Business Administration.

3.7 Reason for Selecting the Nursery Houses and the Informants

This section presents how I chose the informants as well as the nursery houses. The selection did not include my intention. As mentioned above, the statistical data on elderly care (2017) reveals that 75.4% of the elderly care facilities have not applied any kinds of welfare technology. This made it difficult for me to find ones where welfare technology is employed. As the first step, I browsed and looked into webpages on elderly care or nursey houses. Among them, I found a webpage which presents digital devices from wearable robotics to cognitive sensor machine intended for elderly nursing. On the webpage, there are some articles presenting usage or experience as examples by caregivers in a practical setting. I picked all of them presented there as potential candidates in this research. On the other way, I read through official reports announced by governmental organizations and white papers. It shows some nursery houses which promote digitalization as examples. Since the number of nursery homes with welfare

technology is limited, I unconditionally elected them as possible participants. As such, I tried to take contacts with all the facilities with welfare technology I found on webpage or official reports, telling them the purpose of this research, data collecting method and interview questions. In this process of selection, it did not include my intention. Initially, I directly tried to approach and welcome front-line caregivers as participants. However, it was difficult to find them because their name was covered, which made me impossible to identify who can be participants in this research. Therefore, on second thought, I put priority on nursery homes where welfare technology is implemented into practice, not on caregivers who has experienced it. Among all the 33 nursing homes I contacted, I got responses from 7 nursey homes or social welfare corporations. However, one of them could not participate in this research and two other nursery homes answered that only mail-based answering was possible. Since the data collecting in this research had to be conducted based on mutual interaction via interview, I had no choice but to exclude the two candidates. These are the way I took to approach elderly homes with welfare technology. As already referred, welfare technology in this research is defined as like this: digital application utilized in nursery homes for seeking safety, high quality of the care and promotion in effectiveness and efficiency (Hofmann, 2013; Cozza *et al.*, 2018; Lee, 2018). Likewise, the specific devices in welfare technology in here include ones with supportive, responsive or preventive features. In terms of the informants, as mentioned above, the selection did not have my intention at all. I suppose that the most suitable person(s) from each facility who can elaborate their lived experience of welfare technology participated it and answered the interview questions.

3.8 Ethical Consideration

Before taking part in the study, I've got oral informed consent from all the participants. The informed consent contains the purpose of the research and the right they had. They could leave the interview if they felt uncomfortable with answering the questions, even during the interview. Also, I've got permission to record their voice in advance and to use it for this research with analysis. To ensure their confidentiality and anonymity, pseudonyms were used to describe their name.

3.9 Data Handling and Analysis

According to Roberts (2013), phenomenology seeks for a full description of lived experience by the informants. Besides, within phenomenology, interpretative phenomenological analysis, known as IPA, focuses on exploring idiographic and subjective experience (Biggerstaff and Thompson, 2008). As such, to analyze more qualitatively, IPA was used to explore and describe the data I generated in this study. In doing so, I tried to explore how the participants had interpreted meaning to their experience concerning welfare technology (Smith, Jarman and Osborne, 1990; Biggerstaff and Thompson, 2008). I followed Smith and Osborn's (2003) guidance on IPA analysis. It starts with encountering with and immersing in the data; later on, preliminary themes are identified; thereafter, the themes are grouped together as cluster; they are discussed with other researchers if there are to make sure if they meet the research aims. After having interviews, the audio recorded interviews were transcribed verbatim onto a word document. While re-listing to them, I preferred to transcribe them manually, not using any transcribing software at this stage. That is because in the process I was able to immerse myself into the data and feel more in tune with their narratives. After

transcribing them, I double-checked the text and the audio to make sure accuracy. Also, I repeatedly read the transcribed text a few times. This provided me with a detailed understanding of the data and some initial ideas. As mentioned above, all the nursing homes and participants were labeled as NH1, NH2, NH3 and NH4 and CG1, CG2, CG3, CG4 and CG5 for making them more accessible and readable. In addition, regarding the participants, I distributed label to each of them to make them anonymized.

Concerning coding the data, I employed a software for coding, named MAXQDA Analytics Pro 2020. Firstly, I imported word documents with the transcribed data into MAXQDA. Afterwards, I read again the text and preliminarily identified essential themes with marking in different colors, based on their meaning. For example, at this stage of identifying preliminary themes, they could be differentiated with 3 themes, which were:

1. *Initial reason for implementing welfare technology,*
2. *Ethical Considerations,*
3. *Dilemmas and Challenges*

Then, I read the highlighted text again and grouped the themes as cluster within one preliminary theme. Taking 4.3) ethical considerations as an example, it can be divided into four clusters: 4.3.1) privacy, 4.3.2) responsibility to technical accidents, 4.3.3) equal distribution of care, 4.3.4) dehumanization. This followed potential ethical matters demonstrated in chapter two. Likewise, codes that share similar ideas were placed together and put into the same cluster.

1. *Initial Reason for Implementing Welfare Technology,*
2. *Ethical Considerations*
    2.1 Privacy

2.2 Responsibility

2.3 Equal Distribution

2.4 Dehumanization

3. *Dilemmas and Challenges*

3.1 Team Building and Management

3.2 Institutional Dilemma

3.10 Limitations of the Study

A couple of limitations were raised. The first one is data credibility. It was challenging for me to find participants. Since I have no practical experience in the nursing industry, especially elderly care, I have lack connection with people who work in the field. In addition, the prevalence rate of welfare technology in care for senior citizens remains quite low, which made it more difficult to find suitable participants. After all, I found 33 nursing facilities that utilize advanced technology. However, among them, four nursing houses answered back to me in a positive way. Throughout the interviews, I reflected that I got fruitful information and plentiful narratives that are positive to further accelerate digital welfare. However, this makes my analysis a bit blur. In a way, I suspect that the participants I had this time have in common that they succeeded at welfare technology. Here, I have two assumptions on that. It is natural to think that there are some cases of failure, but I did not have any of them as participants. Among the 33 nursing homes I tried to contact, some of them might have failed to implement welfare technology, which can be the reason why they did not reply. The other one is an institutional dilemma in the Japanese nursing industry. The statistical report on the elderly care industry (2017) reveals that more than 50% of nursey houses claim lack of time because of too much

operation and doing paperwork for the report. Furthermore, in Japan, the academic year and business year start on April, which means that every industry, every corporation tends to have a hectic period because of welcoming new colleagues. This might have pressure on each nursery house in terms of spare time. To sum it up, the data I generated through the interviews might be focusing a bit more on positive aspects, which can influence data validity and credibility. Secondly, transferability. The data collecting via interviews was conducted in Japanese and later on it was translated into English by me, including back-translation to double check the text. Although I, an individual researcher in this study, have a good command of both Japanese and English, it does not ensure the transferability. In a cross-language research, translation should preferably be done by a professional translator and a co-researcher (Chen and Boore, 2010; van Nes *et al.*, 2010). As mentioned previously, all the translation processes were completed by me. Therefore, nothing can guarantee the accuracy, especially translation process. The third limitation is dependability. The sample size of five informants limited the data accessibility. I tried to reach as many nursing homes as possible and finally got five participants. To analyze more precisely, I could have interviewed more and interviews with some nursery homes which have experienced difficulty in applying digital tools. In addition, all of the participants are in management position. To deeply understand the front-line caregiving, I should have got in touch with the front-liners. This time, I could approach managers in elderly homes, instead of them. Thereby, I had to rely on their lived experience, which implies that if front-line caregivers were considered, the findings would not be the same.

CHAPTER

- 4 -

FINDINGS

4.1 Introduction

This chapter presents data including responses provided by the participants in this study. As stated in chapter three, I had interviews with four nursery houses and five caregivers as informants. Based on their narratives and lived experiences, coding was carried out. Regarding the information of participants and elderly care houses, I already described in detail one by one in chapter three, so in this chapter I will demonstrate all the coded data in order to address the research questions presented in chapter one: How do caregivers in elderly nursery homes in Japan ethically reflect upon the application of welfare technology? And Which dilemmas do they faces in implementing welfare technology?

4.2 Initial Reason for Implementing Welfare Technology

The first interview question was asked to find out the essential reason why they started to apply digital devices into practical elderly care. The answer can be divided into two: compensating caregiver shortage and receiving public subsidy. As nursing care center (2017) officially reported, the major chronic reason nursey industry has faced is lack of human resources. More than 50% of the nursing homes in Japan answered this. It implies that the participant mentioned caregiver shortage as the reason for implementation because they had no choice but to employ digital tools. CG3 answered a bit differently, saying:

"We knew from that time that there was a shortage of nursing care personnel, so we made the switch to electronic systems to react, in advance, to possible necessity of digitalization in the future. (CG3)".

On the other hand, CG1 reflected on the day when they first purchased such device:

"The first time we introduced nursing care robots in our facility was in January 2016. (...) In 2015, the Ministry of Health, Labor and Welfare provided a 10/10 subsidy to each facility in a supplementary budget to promote the introduction of the care robots. In other words, there was an offer to give away the tools for free. I think this was the trigger for many facilities to start introducing the system. (CG1)"

Thus, the interviews revealed the major reasons for the initial implementation of welfare technology, which are decreasing number of caregivers and public subsidy. A lot of nursery homes, not all of them, started to implement welfare technology at the moment with the subsidy to deal with shortage of caregivers. This matches the governmental attitude towards welfare technology presented in chapter one, namely continuous and drastic financial support might motivate the rest of elderly homes to start digitalization.

4.3 Ethical Considerations

In this section, I elaborate their description on ethical considerations of welfare technology, which is one of the research questions in this study. Based on literature review, I divided them into four categories: 1) Privacy, 2) Responsibility, 3) Equal Distribution, and 4) Dehumanization. Before describing, I firstly present how the participants answered to the reaction against welfare technology from service users' and frontline caregivers' perspective.

When I asked if they had resistance from other colleagues or service users when they tried to use robotic devices, all of them answered positively. At least they did not experience negative feedback to the implementation itself. CG1 explained like this:

> *"There was no resistance. I used to work as a functional training instructor, so I myself have already tried to accelerate bringing something new into the nursey home. Also, I have a qualification as counsellor of specially designated welfare equipment." (CG1)*

In this workplace, there was already an atmosphere that everyone was used to use unfamiliar tools. All participants answered positively to this question of resistance against welfare technology, but technically speaking, it depends on usability of the device. When it comes to a cognitive sensor device for monitoring, for example, it does make their care efficient and effective. A wearable device such as muscle suit, on the other hand, seems unpopular. CG3 explained why the wearable device was unpopular:

> *"When we use a wearable suit or any other device, it takes a bit time to wear it. For example, if I wear it as a transfer aid and after I finish using it, I have to take it off and bring it back to the original position. Because of this, staffs reacted very negatively to the unnecessary actions." (CG3)*

CG3 answered that wearable device, such as walking assist, does not meet their demand. They feel uncomfortable with using it directly to their body. Overall, implementation itself did not receive resistance to the change. However, there was actually resistance to usability and operational rationality, not ethical validity.

4.3.1 Privacy

All the informants mentioned the same thing on privacy. Especially, people might care about privacy issues on monitoring sensor. In each elderly home, caregivers are supposed to take informed consent with service users (and next of kin if necessary), which means that caregivers provide them with elderly care with welfare technology under mutual consent and service user can choose not to use it if they wish. Regarding this, CG1 explained:

> *"As for privacy, the first prerequisite is choice. When we select a device, we try to choose one that takes (privacy) into consideration. Then, after explaining the device, we use it with mutual consent. I also explain about the effects." (CG1)*

Likewise, CG2 elaborated on privacy issue:

> *"We are very strict about personal privacy and consent for use. There is a great deal of contracting involved. Consent forms and other details are required every time. The same goes for the family's consent form, the care manager's consent form, and so on. So, I don't think it's that much of a problem for us to proceed. (...) We are also supposed not to leave any personal information on the device." (CG2)*

Although these arguments inductively indicate that they are aware of the privacy matter, they do not really see this as an issue. Namely, they do not consider it directly from service users' perspective. Rather, their focus in this matter lies in technical development, not on service users. CG1 explained how monitoring robot works and clarified its validity:

> *"There is also progress in the development of devices that do not infringe on privacy as much as possible. For example, in the case of a monitoring device, it*

completely works if only the silhouette is detected, so the device can monitor the user without infringing on the user's privacy." (CG1)

Although this is an example, the private sector of manufacturing has been doing best as much as it can in order not to violate their privacy and assure safety. Therefore, it is unlikely that monitored data will leak out and reach a third party. In addition, there are some positive effects on privacy with using welfare technology. CG5 explained:

"Also, it is useful to judge that what we have been doing is actually good or bad. For example, in Japan, nursing homes patrol each room to make sure that the service user is sleeping, including the aspect of safety management. However, as you can imagine, every hour or two, they open the door of your room and look at your face all the time. And it's kind of painful, isn't it? But when I thought about safety, that was the only way. For those who had difficulty sleeping because of this, the nursing home would take actions to make them sleep, such as saying that they were having trouble sleeping because their days and nights were reversing, or that we should give them sleeping pills, but is this really true? The hypothesis is that the person will sleep better if they don't do that (physical patrol). So, if it's a sensor, it's like it's attached to the person all the time. There are some people who say that this is a bad thing, but I think it's a good idea to have the staff go around the person who is sleeping all the time instead of providing that security. Of course, not everything is okay, but there may be some trade-offs. Overall, I'm positive." (CG5)

These statements can be summarized like this: by employing welfare technology, caregivers can collect numeric data; then, based on this evidence they can make the best care plan and reduce unnecessary actions which they do before implementation.

Eventually, it ends up preventing violation of privacy and improving the care itself. They implied that welfare technology can be actually a solution for the privacy matter, particularly night surveillance. Their attitude is more progressive in that they stressed advancement in welfare technology which does not intrude privacy, not service users themselves.

4.3.2 Responsibility

As people sometimes make mistakes, robots might do so. Service users might be concerned about responsibility for technical accidents. Regarding this, the responsibility lies in the caregiver or the device itself in theory.

> *"I think the theory at the moment is that it is basically the responsibility of the facility, since caregivers do operate and do something." (CG5)*

As mentioned in 4.3.1 Privacy, caregivers utilize it under the service user's consent. Besides, nursey homes make effort to hinder technical accidents. CG1 explained to me how they consider potential technical issues:

> *"Japan is a disaster-prone country. In case of emergency, we are also considering measures on the analogue side. Then, there is technical training. We reconfirm the usage of the system every year. Since the care is provided on a one-on-one basis, the technology tends to be self-dependent, and this can lead to accidents. We are trying to prevent this by repeating the training. (...) We use the device, keeping safety in mind. Accidents can happen even in normal care. When introducing a product, we always use one that meets the appropriate safety standards." (CG1)*

When choosing an electronic device, one of the top priorities lies in whether it meets appropriate safety standards or not. CG2 elaborated on this in a same way:

> *"When introducing a device, we only work with companies that produce devices that meet the standards to ensure safety." (CG2)*

People cannot assure safety when doing something. There is always the possibility that an accident happens, such as a surgical operation. The thing is how they can avoid dangerous situations by periodic training and inspection, not stopping welfare technology. As CG1 mentioned, since Japan has experienced lots of natural disasters in the past such as huge earthquakes, tsunami triggered by them or typhoon, Japanese people especially care about emergent situations and try to be ready for them. Putting yourself into service users' shoes, there is another objective benefit of welfare technology in terms of technical accidents. CG2 commented like this:

> *"It is easy to understand and explain based on numerical values. In the case of walking assist, I can explain concretely, "Using the equipment will make you walk faster by let's say 15 seconds. Evidence is important for rehabilitation robots." (CG2)*

Based on the premise that welfare technology is valuable, caregivers can convince service users and next of kin to apply such technological devices into care, mentioning its data-based effectiveness. Since it is based on proper data, not human perception, this leads to less accidents.

4.3.3 Equal Distribution

The key concept of welfare technology is equal distribution of elderly care (Hofmann, 2013; Nilsen *et al.*, 2016). Here is the answer and thought from those who have

experienced welfare technology. As they all agreed, welfare technology will not influence care service in terms of equal distribution:

> *"The implementation of welfare technology will not affect service fee. In the first place, I think that unequal distribution is occurring before the implementation. Since it costs a certain amount of money to receive nursing care services, some people might not be able to receive the care due to income disparity." (CG2)*

CG2 pointed out that there has already been unequal distribution of elderly care, resulting from income disparity and unequal financial resources. CG1 described it from a bit different perspective:

> *"The introduction of this system will not increase the fee for service. Though it may be a part of the benefits, using it will show the safety of the system. Rather, many people want to enter or work in facilities that are implementing it. I think the distribution at the facilities has worked well." (CG1)*

CG1 mentioned this as a precondition that welfare technology enhances safety of the care. Likewise, CG5 also mentioned something similar:

> *"Originally, there was a big framework that those who had money went to private residential homes, and those who didn't went to social security programs provided by social welfare corporations." (CG5)*

This statement also indicates that financial inequality among service users has already existed, and depending on their economic capital, they choose a public elderly home or a private one. At any rate, introducing welfare technology itself does not pressure service fee for now. However, CG5 additionally claimed the possibility in the future that there might be an issue on unequal distribution of the care service to senior citizens triggered by income disparity:

"It might happen in service provided by a joint stock company. (...) There is the possibility that the price will change between the rooms where technology is used to achieve safe and effective nursing care outcomes and those where it is not. If this happens, people with limited financial resources may not be able to enter such facilities. (...) For example, sensors are not installed for those who pay less, and for those who pay more, sensors are installed. In that sense, I think that there will be a polarization between the infrastructural functions as a certain amount of social security and those that are not." (CG5)

In terms of social welfare corporations, unequal distribution of elderly care will not happen even though welfare technology is promoted. In private elderly homes, on the other hand, this might happen in the future. From the perspective of elderly homes, financial disparity among them might be the reason why some of them cannot implement digital tools effectively. CG5 mentioned this:

"Well, of course there is cost aspect, but that's the chicken and the egg. If there is no progress in introducing it in the field, the lot number won't go up, so the price won't go down." (CG5)

As CG5 mentioned, you cannot ignore the initial cost of digital devices. Since welfare technology has not been promoted well in Japan, the financial issue of nursery homes is huge. CG3 commented this from a different point of view:

"From a management perspective, I think it is important to know how many people are working in the system. The more residents you have, the more income you can earn. On the other hand, if you have a small number of residents, it will be difficult to invest the surplus of profit. Other than that, it is meaningless to install only one piece of nursing care equipment. It is hard to measure the effect

of implementation because data cannot be obtained until a certain number of devices are introduced. I think it's the same for everything, but with only one or two, the sample is too small to know if it's effective. Including this, the scale of the facility perhaps has an impact on whether it can be introduced." (CG3)

Although you can say that about anything, the market in digital devices follows the laws of economics. The price depends on supply and demand. Therefore, the price will become affordable if many nursery homes purchase it. As CG5 mentioned, this is the chicken and egg debate. Besides, to make sure if the device is effective or not, elderly homes need to afford certain amounts of pieces of each device, which brings financial inequality among elderly homes. This finally leads to unequal distribution of welfare technology. To deal with this financial dilemma, the government and municipalities provide all elderly homes with a certain amount of subsidy when they start to introduce digital devices. However, the statistical data of the prevalence rate of welfare technology (*Statistical report on elderly care industry*, 2017) suggests that the financial support is insufficient.

4.3.4 Dehumanization

As described above, elderly care is not completely automated as of today and will not be. However, people might be afraid of dehumanization. The answers can be divided into two categories to support welfare technology. The first one is the direct effect:

"In the example of lift, the effect is rather "human-like" or something similar. In the normal transfer process, the caregiver does not see the service user's face because they are looking over each other. On the other hand, by using the lift, they are able to see each other." (CG1)

Thanks to digital devices, CG1 indicates that they can make the service user feel safe and comfortable. Although the degree of dehumanization and how people regard it depend on each other, this is an example that rather prevents dehumanization. CG1 continued and touched a different aspect:

> *"There is an issue of harassment now. Especially in case of intimacy. For example, there is sexual harassment, power harassment, and so on... I mean, you might not call it harassment because it's just because of dementia. Some troubles occur in such intimacy. However, if they take distance and see each other, there is no such thing as direct physical contact or beatings, and in that sense, the so-called dehumanization is not happening in here. I don't know what will happen in the future. If a robot comes out and measures your blood pressure, I might find it cold care. I don't think this is happening for now." (CG1)*

Apart from dehumanization and by taking distance, other issues like harassment can be prevented. CG1 also denied the today's possibility that human interaction can be replaced by welfare technology. What will happen in the future is still unknown. CG5 reflected on inhuman caregiving:

> *"For example, from an analytical point of view, if we talk about how caregivers spend time in daily work, it is said that 60% of the time is spent on direct contact with service users. The remaining 40% is for indirect tasks, such as linen changing, cleaning and laundry, communication among staff, and writing report. (...) It is theoretically possible to increase that 60% to 70% or 80% by introducing digital devices because they do what caregivers do not have to do. Then, what can we do with the space-time? We can do things that have been*

lacking previously, such as communication, being close to the person, and providing new services that support the person's independence." (CG5)

As he mentioned, since welfare technology helps caregiver do better jobs and provide it to senior citizens effectively, they have relatively more time with service users. CG5 continued and concluded like this:

"So, as a result, if we use each digital device to care, there should be more time for the user and staff to take contact, relatively speaking. So, for example, if we talk about a simple questionnaire that asks whether you want a person or a machine to do the transfer, some people may want a person to do it, and if we look at that scene alone, it may be true. However, I think the priority should be on the overall operation." (CG5)

This is an important aspect of welfare technology. By employing it, caregiver can potentially have more surplus time and share it with service users. Always offering the same quality of care with digital tools which makes service users feel safe eventually prevents dehumanization and creates humanization more. When it comes to welfare technology in the future, each participant had different thoughts but each of them cares about dehumanization and how it can make it possible to shorten the distance between service users and caregivers by using digital tools. CG4 elaborated:

"I have the impression that the parts that can only be done by humans are pretty much gone when I look at artificial intelligence (AI) and machines. So, I don't see any reason why we can't introduce more. (...) However, there is no doubt that human interaction is important in nursing care, so I think it would be good if people could do human-like activities, such as recreation and conversation." (CG4)

Development of welfare technology will bring more human interaction if caregivers spend their time on communicating with service users; instead, digital tools can be replaced. CG3 mentioned why they need to implement welfare technology from the perspective of dehumanization:

> *"What I think is important to keep in mind is that we are not using nursing care robots for you (the staff). It's not enough to say. If we do this, the machines will not be used just like HAL (wearable assist robot attached to body). The reason why they work as a caregiver is that they want to see the smiles of service users. That's why we're using it. I think it is important to properly convey the purpose." (CG3)*

In contract, CG1 does not expect automation of the care, saying:

> *"I think there are many situations where you cannot use it. This is because it is complicated. I think it would be difficult to fully automate the process with current technology. For example, assistance with eating and bathing. I think the challenge for the future will be how to shorten the distance between people and robots since people are the ones who provide care and robots are the ones who support them. Repeatedly speaking, I think the challenge for the future is how to cut down the distance between the user, the machine, and us blend together." (CG1)*

Although CG1 showed more pessimistic attitude than others in terms of automation of the care, they all have common in seeking more human interaction. In response to this, CG5 had realistic view on dehumanization:

> *"Overall, one point is that the nursing care service, which has been qualitative until now, will be quantified. For example, even if Mr Matsuki and I were talking*

right now, I wouldn't be able to tell what his heart rate was, but advanced equipment can pick up that information in real-time. They can quantify and output the information they need to care for the service user. If the caregivers can act based on this, they will naturally become more efficient and productive, and the most important thing to remember is to improve the quality of care." (CG5)

As he described, welfare technology can improve elderly care in general. In the last part of his statement, he added his thought on what the quality of care is:

"In terms of the "quality of care" mentioned earlier, for example, assessment information is just a person's feeling; such as, caregiver assesses whether a service user feels happy or not. There is no evidence, right? Somehow the service user is happy or not. This kind of thing just goes around and around. And, of course, there is a limit to human ability. However, with the introduction of such technology-based devices, for example, the results of ADL (activities of daily living) evaluations can be quantified, and it is also possible to see at a glance what improvements have been made based on data related to the so-called vital system, such as excretion status, sleep status, heart rate, and respiration. This means that the evaluation of whether the care we have provided has been good or bad is quite easy to understand and is based on proper evidence. Therefore, when we make a care plan, we pick up the information from the assessment and make the best plan for each service user, but there is a big difference whether the information from the assessment is qualitative or quantitative in the first place." (CG5)

Advanced devices can capture information which humans cannot collect. Based on data and evidence, not on human perception, caregivers can focus on what should be focused on. After all, the care will be improved and productive.

4.4 Dilemmas and Challenges

All the participants agreed on chronic caregiver shortage and financial issues. Statistically speaking, the official report revealed that 55.2% of the nursery homes have difficulty in recruiting new caregivers, which is the biggest problem (*Statistical report on elderly care industry*, 2017). As the second biggest problem, they referred to financial issues. Since they have limited amount of financial resources from care service, they cannot pay enough. The latest report on nursery industry reality also exposed (2020) that 55.7% of the caregivers answered chronic lack of caregivers as the biggest challenge and also 39.8% of them mentioned inappropriate pay as the second critical issue. However, here I would like to pick up and focus more on in-depth problems which might be the root causes of any other issues and barriers to welfare technology.

4.4.1 Team Building and Management

This is closely connected to implementing welfare technology. It is important to focus on caregiver training and well understanding to devices and purposes to succeed it. Therefore, team building and organizational management are extremely important. CG1 pointed out the necessity of strengthening team building. CG1 elaborated on this:

> *"The major issue is the education of caregivers. The way to introduce the new system in Japan is to normally start from the outside of the facility. The introduction of the system is encouraged by the management positions. This flow*

from the outside to the inside has its limitations, such as the delay in the transmission of information. In my opinion, it is important to create a flow from the inside to the outside, in which the front-liners can spontaneously work on their initiative to make changes. This is because they know the service users and they are the ones who provide the care." (CG1)

In order to make flows from the inside to the outside, head managers and leaders need to educate frontline caregivers. In doing so, the team itself will function more. CG3 criticized the attitude of management positions:

"There is a lack of awareness of the problem among management positions. Many of them are saying, "It's too much work, it's too much work". It's not that NH3 is outstanding, but rather that we are doing what we think we must do to provide better nursing care services, but others are not doing it. (...) Many caregivers are around their 40s. But will they still be taking care of service users in the same way five years from now? They are not thinking ahead. This is a vicious circle because the current care system is somehow working even under chronic shortage of caregivers. (...) If we only look at the present, we will not be able to attract and recruit young people at all." (CG3)

The long-term thinking and bird's-eye view are necessary for any situations in elderly care. At any rate, the current Japanese nursery care system has started in 2000. In response to the past 20 years, CG3 implies that caregivers need to consider what should be taken over and not, along with social changes. Regarding welfare technology, CG1 stressed team management as the core value:

"I did careful explanation to my colleagues. Having elaborate demonstration of the device, I let them use it by themselves. In doing so, they can understand how

to use it and utilize it without less resistance. It is very natural for them to show resistance to something new when they suddenly receive it without any guidelines. To avoid making them feel confused, in-depth instruction and their deep understanding of the device are necessary, in my view." (CG1)

Here, CG1 pointed out an important aspect of welfare technology. With no understanding, nothing works well even if it is a sophisticated tool. There is a contradiction between this statement and reaction to welfare technology presented previously. Although they mentioned that there was no resistance to welfare technology, it actually exists. The thing is how they interpret the resistance. They understand that resistance can occur when making changes but they do not regard it as a big issue. CG1 also reflected on this from a bit different perspective:

"Basically, when you introduce something new, your productivity will drop temporarily. If you don't know how to use it, you can't use it well. If you just have a smartphone, it's just a thin plate. It is only when you know how to use it that it can function as a useful device." (CG1)

The caregiver's perspective is that it is important to keep in mind that in many cases once you introduce an unfamiliar device or change the current system into a different one, it will not function well. After getting used to it, people come to adopt the new ones and as a whole performance will grow up. This can be rephrased as switching cost, which includes time-consuming action such as making manual instruction and financial budget. As another obstacle, CG1 pointed out the management aspect, referring to governmental subsidy in 2015:

"Many facilities positively applied digital devices. However, many of them purchased without thinking about the consequences. The facilities that

thoughtfully purchased the equipment worked well with them, but the ones that introduced the equipment just because it was free and without thinking about it did not have enough training on how to use it. The effectiveness of a nursing care robot is determined by the multiplication of the device itself and its proper usage. If the robots were introduced without understanding how to use them, they ended up in the warehouse. Essentially, in such cases, the problem is not with the equipment but with the organization itself." (CG1)

CG1 referred to subsidy in 2015, by which all nursery houses could virtually install digital devices free of charge. Although this policy attracted their attention and a number of nursey homes tried to switch into welfare technology, as the statistical data on elderly care industry (2017) shows, most of them did not work out. In essence, technology itself does nothing. It only works with the proper understanding of the user. Therefore, before implementing welfare technology, it is highly important to reflect on its organizational management.

4.4.2 Institutional Dilemma

According to the participants, there seems to be some institutional dilemmas and twisted relationship in elderly care industry, especially related to the public sector which has power to control. CG5 pointed out the institutional drawback in elderly care in Japan. As a social infrastructure and a safety net, the elderly care system exists. Thereby, it does not focus on results, which is normally evaluated in the laws of economics. CG5 analyzed:

"One is that there is no system to evaluate the results. What I am saying is that we use public funds for nursing care insurance, and even if it is a fee-based

nursing home, at least 70% to a maximum of 90% of the cost of nursing care is subsided by the public sector. That itself is an evaluation of the process." (CG5)

He claims that the current care system is process-oriented, not results; and continued to explain why this is critical:

"So, that's probably the number one problem. The incentive to work hard does not work here. If you go to that facility, you will be treated badly, and if you go to this facility, you will receive good care. One of the reasons why economic rationality does not work is that the monetary flow is designed in such a way that it is difficult to see the results. Therefore, I think that is the biggest problem." (CG5)

Even if caregivers work hard and offer as meticulous care as possible, they do not be rewarded under the current system. This is because, considering the monetary flow of nursing care insurance, elderly homes whose aim lies in establishing social safety infrastructure not making economic benefits are supposed to balance the limited budget from service fee, insurance fee and taxation. This leads to a bad impression of low wages in the nursing care industry. This can be a big debate because elderly care is necessary for social infrastructure, not for economic profit. Careful consideration and discussion will be needed to take more capitalistic idea into the nursing care industry. From the political perspective, CG1 claimed that there is a biased decision-making by the governmental organizations:

"The government also has a route through the external organizations. As I see it, there are channels through which opinions are reflected. I think that if we don't get involved in these channels, our voices will not be heard. (...) So, sometimes policies are decided in a biased manner. To be honest, I feel that

many decisions are made based on a certain degree of relationship. That is an invisible aspect though." (CG1)

Regarding external organizations, CG5, who is one of the committee members in several ministries, criticized:

"In the case of external organizations, people with past glory are in charge, and the business model of the past is assumed as its basis. However, the external environment (such as social trend) and technology are different now than they were 20 years ago, so the government should consider what is best for the industry based on these assumptions. I think it is necessary to have a more companionable discussion and do what is best for the industry." (CG5)

As CG1 and CG5 mentioned, there seems institutional twisted relationships with the public sector. This means that if board members persist and follow past traditions or customs which does not fit the tide, it might influence performance and productivity as a whole. In Japan, there is so-called revolving door or golden parachutes, which is used to refer to unhealthy relationship developing between private sector and public sector, based on privileges. In addition, this kind of network tends to be unknown and invisible, which makes it difficult to grasp what actually is going on. Therefore, their statements point out that this infamous movement holistically impedes upgrading elderly care industry.

CHAPTER

- 5 -

DISCUSSION

5.1 Introduction

The purpose of this study was to investigate and interpret ethical considerations when employing welfare technology in the context of Japanese elderly care, and to understand dilemmas and challenges nursery homes potentially face on the process of the application. To fulfill them, the interviews generated lived experience from managers in elderly homes. In this chapter, I will discuss the main findings presented in the previous chapter, relating to the literatures and theoretical framework in this realm. This chapter starts with the discussion about ethical dilemmas, especially privacy and confidentiality, technical reliability, equitability of distribution, and lastly dehumanization. Later, I will discuss institutional dilemmas associated with the concept of capital and habitus.

5.2 Reflection on Ethical Considerations

The first research question was to explore the attitude towards ethical concerns from nursery homes' perspective. In this section, I will address each of the potential issues, based on literature review.

5.2.1 Violation or Securement of Privacy

Hofmann (2013) indicated a thread to confidentiality of personal information, resulting from new technological applications. In order not to violate it and make sure mutual understanding to utility of digital devices, Demiris and Hensel (2009) highlighted the

importance of informed consent. In response to this, in general, the respondents held positive attitudes about privacy matter associated with implementing welfare technology. The empirical data referred to voluntary and mutual decision making by elderly people (or next of kin if necessary). This study revealed that nursery homes in Japan, at least the participants, carefully and strictly treat personal information and informed consent. Without informed consent, eldercare will not be proceeded. Since service users have right to refuse digital tools in caregiving, the issue of privacy is not critical in the context of Japan. Besides, it is highly important to ensure service user's understanding to welfare technology.

Yet, welfare technology interdependently involves other stakeholders, not only senior citizens (and next of kin) and caregivers but also technology developers. This implies there is possibility that personal data and information leak out and reach the third party (Hofmann, 2013). In response to this, the study found that technical developers and research facilities have extra care about it. Regarding night surveillance monitor which has strong attention (Nilsen *et al.*, 2016), it only does capture service users' silhouette as the minimum required data so as not to violate their personal life and privacy (Sánchez, Taylor and Bing-Jonsson, 2017). This makes senior citizens feel less monitored (Sánchez *et al.*, 2019). On the contrary, the participants in this study mentioned that welfare technology, especially sensory monitor of surveillance and supervision, securement of privacy will be strengthened and ensured. The application can prevent senior citizens from being disturbed their sleep. In traditional caregiving, night surveillance is carried out with physical visits, which might disrupt their sleep and their lifestyle rhythm can be disturbed. In this case, caregivers might not relate the sleeping disorder to their physical

visit, and eventually offer inappropriate care instead. When further technological development is achieved, welfare technology plays important roles in privacy protection. As the data showed, if senior citizens can deal with normal bodily phenomenon such as excretion, which can be regarded as privacy, without support, deployment of welfare technology would rather protect privacy in this context.

According to the empirical data I generated in this study, overall, there was no negative attitude on their own caregiving related to privacy issue. Taking other researches into consideration, this is a surprising finding. This does not mean that they do not care about privacy; they do. However, their approach to secure confidentiality is more technology-oriented by achieving qualifying machinery advancement. In this sense, the utility of welfare technology in elderly homes does not violate service users' personal information and privacy. Therefore, as long as there is a mutual consent between service users and caregivers, welfare technology in eldercare facilities does not intrudes their personal territory. At the same time, ensuring service user's understanding to welfare technology is also an important element in its implementation in that service users are often unfamiliar with technological infrastructure and usage of digital equipment (Demiris, Oliver and Courtney, 2006).

5.2.2 Technical Feasibility and Liability

Some people are suspicious about technical dimensions of welfare technology and trustfulness of device (Hofmann, 2013; Nilsen *et al.*, 2016). Others claim the validity of employing technological applications into caregiving in that technology is likely to decrease human errors, and also assure accurate and stabilized quality of eldercare

(Frennert and Baudin, 2019). There is clearly polarization of attitude towards technical reliability of welfare technology. This implies that the technology is still under-developing and controversial with regard to technical accidents. Concerning possibility to technological defects, the participants had similar considerations on it. The responsibility lies in caregivers or the device. They did not clarify their position to the responsibility, which should and will continuously be addressed further.

Although the study revealed that responsibility is still unclear, they have taken measures just in case. Many of them utilize digital devices which meet the safety standard. Besides, since Japan is a disaster-prone country, analogue procedure with less digital devices is considered in case of blackout. Periodic training is one of the feasible measures to avoid misuse of the devices. As an advantage of welfare technology regarding technical matters, safety of service users can be strengthened when implementing it. For example, sensory monitor for surveillance will prevent potential fall or fire in advance because the monitor can watch them 24/7 and is like attached to their body. If something irregular and abnormal behavior are detected, then caregiver will be notified with emergency call via the device and help them before it is too late. Likewise, digital tools can compensate human perceptions with sensory functions such as vital data, sleeping quality and status. The qualified eldercare will be brought by introducing technological tools. Consequently, even though we cannot deny the possibility that technology might cause adverse events, welfare technology, overall, prevent them from unnecessary accidents, considering the whole process of the effect.

The empirical data highlighted that caregivers and technology developers cannot fully prevent accidents, even in traditional physical caregiving. In normal care or daily life, people might fall and cannot prevent it in advance (Sánchez *et al.*, 2019).

5.2.3 Apprehension to Accessibility

There was a general consensus from the data that welfare technology will not pressure fee of the care itself as of today, although there are discussions regarding this, saying that the digital divide exists due to income disparity and this prevents lower socioeconomic groups of people from having eldercare with digital tools (Demiris, Oliver and Courtney, 2006; Hofmann, 2013). All participants agreed that under the current elderly care system in Japan, the service fee will still be stable even though they offer any services with welfare technology. Therefore, the financial cost will not be considered when introducing new technology into practice from service users' perspective. This means that welfare technology in elderly homes is, in theory, open to all. However, the thing is, as the data shows, there is already financial disparity among service users. Although service fee varies from 10% to 30%, depending on their income, it does not solve the equal distribution of elderly care.

When it comes to elderly homes, their perspective should also be considered. According to the data, welfare technology is not a barrier for service users. However, since elderly homes have difficulty in deploying digital tools because of its cost, this cannot be ignored because the biggest reason why the prevalent rate of welfare technology still remains extremely low is lack of investment budget (*Statistical report on elderly care industry*, 2019). In other words, service users are more or less ready for welfare technology;

however, nursing homes cannot afford digital devices due to limited budget for investment, together with high-priced devices.

Now that whether welfare technology is installed or not gradually matters to senior citizens, this brings financial hierarchy among elderly homes. As the empirical data shows, numeric status, such as the capacity of elderly home and the number of service users, is important when considering its application. To judge if it is effective or not, elderly homes need to use certain pieces of device, otherwise the effect cannot be measured. There is a financial barrier here. Although the public sector announced and provided subsidy for welfare technology to promote and stimulate further technological application, the outcome has not been seen on the statistical data yet.

Thus, in terms of equal distribution of welfare technology, there is a twisted relation between service users and caregivers. Although previous researches pointed out this matter from service users' perspective (Demiris, Oliver and Courtney, 2006; Demiris and Hensel, 2009; Nilsen *et al.*, 2016), in reality, elderly homes have financial dilemmas. As mentioned above, welfare technology has no influence on service fee as of today. Conversely, possession of digital tools attracts service users, possibly potential caregivers as well, meaning that financial disparity among elderly homes will come out. Therefore, to deal with this issue, financial supplement from the public fund to elderly homes with limited capacity will be needed. In doing so, equal distribution for both service users and caregivers will be achieved.

Hence, the issue of accessibility of welfare technology can be seen in the following two aspects. In terms of service users, welfare technology does not create a financial barrier because it does not accordingly rise the service fee. More importantly, income disparity has already existed among senior citizens. Apart from welfare technology, this unequal distribution of elderly care should be addressed so that the care goes to ones in need. When it comes to nursing homes, the implementation limits its accessibility requirements. The capacity of elderly home directly influences the application to make sure its effectiveness. Since welfare technology can potentially attract both service users and caregivers, the more digital application becomes prevalent, the more financial capacity among elderly homes will matter and comes out. To support small elderly homes, the public financial aid will be needed to normalize them, which eventually leads to extensive utility of welfare technology to all stakeholders.

5.2.4 Dehumanization or Humanization

One of the biggest ethical challenges regarding welfare technology is dehumanization. At some points, it is considered that the application brings a loss of autonomy and personal dignity (Sánchez *et al.*, 2019). Elimination of human contact, especially between service users and caregivers, can also be concerned (Demiris, Oliver and Courtney, 2006). Other mental loneliness has been reported in different researches. Some people feel fear to loneliness and disconnectedness, resulting from implementing new technological development and less human interventions brought by this (Ziembroski *et al.*, 2003). The data in this research intimated that all these concerns can be solved. Loss of human interactions can bring mental issue. However, one of the core concepts of welfare technology lies its effectiveness and efficiency, and the quality of care (Cozza *et al.*,

2018). Caregiver has lots of things to do during working hours from excretion assist to cleaning and paperwork of report. These duties can be divided into two categories: direct support and indirect support. If direct support which includes communication is eliminated and replaced by welfare technology, then service user might feel loneliness. But, digitalization in indirect duties such as paperwork will bring spare-time, which can be used for communication and recreation with service users. Considering what and where welfare technology potentially helps and streamlines is significantly important. Using the spare-time, caregiver can spend it on communication. This will bring humanization, not dehumanization. Therefore, when implementing digital devices, it is important to elaborate on how it can help caregivers do caregiving effectively and efficiently, and end up increasing moment of humanization. Besides, being explorative on what humanization is like, to whom they offer the service is similarly meaningful.

The participants agreed that welfare technology do exist for promoting better caregiving, not for stealing and violating humanization. Technology itself does not replace human caregiving; it just supports to accelerate and stimulate necessary human interactions between elderly people and nursing staffs. Therefore, it is rational to employ welfare technology as a plausible solution to chronic labor shortage and improve caregiving itself. However, there is still room for improvement of technical development. For example, sensory monitor can capture and supervise service users all the time, which can replace human optical sensation. On the other hand, other sensations like olfactory perception cannot be detected through the monitor (Nilsen *et al.*, 2016). At this moment, overcoming dehumanization has not been fully achieved yet. Technological breakthrough will bring further human caregiving.

5.3 Dilemmas and Challenges

The second research question in this research was to explore elderly homes' views on dilemmas they face in implementing welfare technology. To discuss the dilemmas and elaborate them in relation to welfare technology, I will use theoretical framework advocated by Bourdieu, especially capital and habitus.

5.3.1 Education as Capital and Habitus

One of the biggest findings in this study is the importance of education and management. Apart from welfare technology, many participants pointed out this matter. Even though an elderly home can afford digital devices, they will not function unless caregivers can properly utilize them. In this context, cultural capital should be emphasized. The statistical data on nursing industry (2017) found out that almost one in four caregivers did not have any knowledge on care robots. In other words, welfare technology has not been embodied in nearly 25% of caregivers. As Bourdieu (1986) put it, capital is interconvertible from embodied state to objectified state. Therefore, without knowledge on welfare technology, nothing can stimulate and motivate caregivers to implement it in individual level. This is a critical and challenging issue because the average age of caregiver is 48.8 years old (*Report on Nursery Industry Reality*, 2020) and aging of caregivers will continuously proceed. In addition, another issue related to cultural capital is chronic shortage of caregivers. In reality, there is no academic requirement to start working as a caregiver, even though people with degree and experience in nursing are prospected. This is lack of institutionalized state cultural capital (Bourdieu, 1986), which likely makes recruitment more demanding as well as the implementation unimaginable. In addition, the rate of the number of care worker with certification as professional is

40.3% (*Statistical report on elderly care industry*, 2019). Majority of caregivers in Japan do not have certificated professional skills in care. Theoretically speaking, this state of eldercare can be interpreted as a matter of the social work discipline which includes professional integrity. In individual level, lack of human resource and knowledge on caregiving impedes employing welfare technology.

When it comes to mezzo field, elderly homes should create atmosphere of interactive communication. Since human behavior and practice are cultivated out of cultural capital and habitus (Reay, 2004; Dalal, 2016; Nairn and Pinnock, 2017), probably head manager needs to play the central role in its initiative. People are used to adapt to the environment they inhabit, and based on the social world their behavior and practice are accordingly determined (Reay, 2004). To make impact on their dispositions, the social world needs to change. Therefore, participants highlighted the necessity of tremendous education to caregivers, which is theoretically correct. As one of the essential aspects of habitus, Bourdieu stated education as reproduction (Dalal, 2016); people acquire cultural capital and habitus throughout education, and likewise this cycle continues in the next generation. This suggests that education can potentially bring both positive and negative reproduction. Moreover, elaborative education may be able to deal with early turnover. Although turnover in eldercare industry is not extremely high compared to other industry, 38.2% of turnovers left their job within one year (*Report on Nursery Industry Reality*, 2020). This suggests that every time elderly homes recruit new care staffs, they have to educate them, which is time-consuming process of implementation of welfare technology. With meticulous training, the care itself will improve with welfare technology and correspondingly elderly care industry will get better as a whole.

5.3.2 Political Collusion and Preferential Treatment

The empirical data revealed that there is truly social connection with public sector. Within this social capital, political power relation would likely be in force. Participants badly criticized the existence of political collusion, resulting in (unintentionally) unequal treatment among elderly homes. When the public sector and the personnel are closely connected to a peculiar eldercare facility, their political measures might be exclusively and preferably inclined to the home's benefit. For example, as described in 5.2.3 Apprehension to Accessibility, there will be financial inequality among elderly houses in accord with further digitalization. Under this circumstance, elderly homes with limited capacity without a network-based resource might be weeded out by natural selection. Theoretically speaking, this can happen.

Although it is difficult to make this unevenly polarized structure correct, with the theory of capital by Bourdieu, it will find a way. In Bourdieu's account (Bourdieu, 1986), capitals are interconvertible; for example, economic capital transforms into cultural capital. He also stated that within cultural capital, one can be converted into others. Along with the theoretical conversion, social capital can be attained through a different path, not from direct human alliance. It is more demanding and time-consuming to establish relationship, which suggests that transforming cultural capital into social capital will be much easier (Pret, Shaw and Drakopoulou Dodd, 2016). In the case of elderly homes, the first priority lies in boosting cultural capital, resulting from educating human resource and improving management. As it goes productively, it might end up implementing welfare technology. On the process, the elderly home will be involved with different stakeholders such as technology developers. Thus, social capital can expand through

cultural capital. Likewise, they can enrich cultural capital through social capital as well. An elderly home without welfare technology can approach and communicate a digitalized nursing house. To begin with, it gains social capital through the interaction. On the process, the interaction brings knowledge and experience of the deployment, which can be embodied into their mind and eventually will be output again in the form of the objectified cultural capital. Eventually, this leads to creating social connection with the public sector. Since I selected the elderly homes in this study through official reports or white papers which introduced them as examples of succeeding in welfare technology, it is rational to focus on the cultural-capital-oriented process to build social capital.

5.4 Reflection on Findings

From the results of the interviews in this study, there were many positive responses to the application of welfare technology. Particularly, in terms of ethical issues, it is worth noting that many advantages in various fields, such as the quality of care being better when the device is used, was confirmed. In general, it was meaningful to hear from those who have been leading the way in Japan in the introduction of nursing care robots. According to the statistical data on the elderly care industry (*Statistical report on elderly care industry*, 2019), financial problems were the most common barrier to the digitalization, but the elderly nursing homes that have successfully implemented the robots pointed out the root cause that went deeper than the financial aspect. The knowledge obtained from this research was valuable in that it brought to light information that cannot be found in the statistical data.

In addition, by adopting the perspective of practice research, the study was able to deeply dig into and obtain data that was not originally expected as well as was not obtained from previous studies; by more extension, the data was more relevant to the Japanese context. In this respect, I would like to evaluate the superiority of this study. Furthermore, the study could obtain in-depth data that had not been brought to light by the statistical data, and I believe that the research was able to get closer to the essence of the nursing care industry in Japan. At the same time, however, it is important to keep in mind that this is only the tip of the iceberg for Japan's elderly care industry. Since the adoption rate still remains only in the single digits, there must be many other cases where people have considered adopting the system but it did not work out. In this sense, this research has focused on the light side of implementing welfare technology. Perhaps, there might be more complicated dilemmas and institutional challenges to the opposite side. In this way, I judged that the findings should not be generalized as the current state of elderly care in Japan.

CHAPTER

- 6 -

CONCLUSION

6.1 Introduction

This chapter concludes the study by providing a response to the overall research questions. With the answers to these questions at the axis, I will describe the guideposts for the future of elderly care in Japan. Recommendations for future research come at the end.

6.2 Answers to Research Questions

This study started with two research questions regarding welfare technology: ethical considerations, and dilemmas and challenges of the implementation. Unlike literature review, the participants have highly positive attitude towards digitalization of elderly care. In their prudent accounts, potential ethical apprehensions are considered to be untied by employing technologies. Rather, they even think that digitalization can bring ethical benefits. Therefore, this study confirmed that welfare technology plays and will play significant roles not only in chronic shortage of caregivers but also in improving eldercare itself and protecting service users and their health productively. With regard to dilemmas and challenges, unexpected in-depth analysis was generated. As the statistical data reveals, financial aspect is the biggest barrier to welfare technology. However, in macro level of elderly care industry, other problems were found out. Educating caregivers will bring constructive communication, which correctly defines their codes of behavior, and also will reproduce it. Such a good cycle leads to an even better cycle, and a chain of capital formation in diverse forms occurs. These statements are closely relevant to implementing

welfare technology. Seemingly unrelated factors, such as education and cultural capital, are the root causes of the underlying ills of the nursing care industry and euphemistically reduce the barriers to the digitalization of elderly care industry.

6.3 Guidepost to the Destination

In this study, I have taken a deep look at various issues in the digitalization of elderly care in Japan. Finally, as a conclusion of the data obtained in the study and the descriptions so far, I would like to consider the way, as a guidepost, that nursery homes could take.

Firstly, the destination they need to look at is the digitization of the nursing care sector. Overcoming multiple challenges and creating high-quality nursing care services while coexisting with digital technology within the limited resources available is the path that could be taken in the future. Given the existing literatures, the collected data, and the demographic structure of Japan, this is the goal they could aim for. According to the statistical data on elderly care industry (*Statistical report on elderly care industry*, 2017), there are two major problems that nursing homes are currently facing. One is the chronic lack of human resources and the other is financial resources. However, both of these problems are nearly impossible to solve straight. With regard to human resources, it is impossible to supplement the number of caregivers under hyper-aged society. As for finances, the money flow of the current nursing care insurance service can tell the truth. The source of funds is taxes and insurance premiums, so in Japan, where the population is declining due to the extremely low birthrate and aging population, it is unlikely that the further financial support will be imaginable. Rather, the financial resources will continue to decrease. In addition, the financial aspect has been cited as the critical challenge of

digitization, but this cannot be the first issue to be tackled. In 2015, the government attempted to promote digitization by subsidizing 100 percent of the cost and a certain number of eldercare homes took the opportunity to install digital devices, but most of them failed, namely they could not sustainably utilize them. At present, only a single-digit percentage of the whole nursing homes has achieved success in the implementation (*Statistical report on elderly care industry*, 2017). In other words, the past experience indicates that granting money does not remove the barrier to digitalization.

As a way to break through, the first issue that needs to be addressed is human resource training and organizational management review. As mentioned earlier, it is unlikely that the number of caregivers will increase, so the first priority is to improve the individual performance. In fact, based on the findings, the participants implied that there is a mismatch between the cultural capital and habitus of the nursing staff and the way they should be. In addition, the early turnover rate within one year is near 40%, which needs to be improved. Likewise, it is important to review the organizational structure and provide in-depth training with a basic skills and knowledge on nursing care and technology. This is not only for nursing homes, but also for academic institutions in the field of social welfare, which could be encouraged to revamp their education systems to be more robust. It also builds social capital by making connections with elderly homes that are doing well in digitalization. In Bourdieu's theory of capital, different forms of capitals are mutually transformable, so it would be important to refine social and cultural capital. In this way, the robust foundation of the organizational management and each individual's proficiency should be improved before starting the digitalization process. As it stands now, an immediate digital shift is not realistic. By allocating resources to

education prior to digitization, they can lower the barriers to adoption, and ensure that the cycle is cyclical and reproducible. Hence, it is essential to correctly assess the current situation, subdivide the necessary steps, and meet them one by one as if climbing a staircase.

6.4 Recommendations for future research

While this study could collect meaningful data, it was not necessarily able to dissect the whole picture of the various problems of digitization in the elderly care in Japan. As described in the previous chapter, all of the informants were from nursery homes that have successfully introduced welfare technology. Their voices were essential and highly versatile, but many nursing facilities for senior citizens are still struggling or have not yet taken the plunge to implement these devices. Taking this into consideration, their hidden perspectives should be lightened in the future. In addition, this study is based on the voices of caregivers who are in managerial positions. Even if there are multiple constraints involved, it would be necessary to get closer to the hands-on experience of caregivers who work on the frontline and also uncolored voices of service users (Lee, 2018). With regard to caregivers, it is also interesting to examine the psychological distance to welfare technology by age, especially between middle age and digital native who have familiarity with ICT and are immersed in technology (Prenksy, 2001; Bennett, Maton and Kervin, 2008), from the perspective of Bourdieu's cultural capital and habitus (Bourdieu, 1986, 1990). Moreover, to open up the possibility that Japan welcomes more foreign caregivers, which can be called “open borders (Davoudi, Wishardt and Strange, 2010)” scenario, their perspective will be worth investigating. Language skills and subtle cultural differences which are vital to human interaction may be overcome through

welfare technology. It would be desirable to be able to study the nursing care industry from such complex and more multifaceted perspectives.

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APPENDIX

INTERVIEW GUIDE

The following includes interview questions I asked to all the participants during the interview. Together with the purpose of this study and the rights they have, I shared this with them in advance.

About Interviewee:

- Could you briefly introduce yourself? Also, could you tell me your academic and occupational background so far?
- What do you specifically do in this nursey house? What is your responsibility? Please describe it.

Welfare Technology:

- What welfare technology does your nursery house utilize for better caregiving?
- What made you start implementing welfare technology?
- At the moment when you applied the digital devices into practice for the first time, how was the reaction by caregivers, service users and next of kin?
- Could you tell me the pros and cons of using welfare technology?
- In your view, what makes it difficult to apply digital devices in the Japanese elderly care industry?
- What is your opinion on the ethical dilemmas of welfare technology (issue of privacy, responsibility against technical accident, equal distribution of elderly care, dehumanization of caregiving)?
- Is there any situation where digitalization does not work for caregiving? If yes, can you describe the situation for me?

Dilemmas and Challenges in Elderly Care Industry:

- Could you describe any problems which Japanese nursery care industry faces in general?
- What and how could make it better? Could you describe it?