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A Comparative Study on the Japanese-Chinese Preferences for Nursing Care

——Utilization of Statistical Data Analysis——

Zihan Zhang¹ Chieko Kato¹
and Koichiro Aoki¹
Toyo University, Tokyo, Japan.
s4b102110018@toyo.jp

Abstract

This study aims to clarify the differences in psychological, social, and physical characteristics that influence the preferences for nursing care by Japanese and Chinese people. A questionnaire was conducted with Japanese and Chinese seniors who were living at homes and capable of independent living and self-care. At that time, changes in the mental state before and after the spread of COVID-19 were also examined. The participants were divided into two groups based on their nursing care preferences, “family care” or “public care” with Fisher’s exact test and ANOVA was being used in the analysis. These results showed only a significant difference between these two groups in the responses regarding exercise habits before COVID-19 for both Japanese and Chinese participants. Doing sports or exercise frequency was higher for those who preferred family care before COVID-19. This suggests that the physical factor of exercise habits influences the choice to care for the elderly at home.

Keywords: *Nursing Care Preferences, Personality Traits, TIPI, Statistical Data Analysis, Quantitative Research*

1 Introduction

1.1 Severe Problems for Elderly

In both Japan and China, the birth rate is decreasing, the dependency rate of older people, and life expectancy is increasing. The main problems associated with ageing are the impact on economic growth and the lack of social security systems for seniors to live a free, prosperous, and happy life and receive adequate nursing care. A survey of Japanese seniors found that 42.0% were pessimistic about their retirement. Among the reasons, "anxiety about pension and retirement funds" was the most prominent, followed by "anxiety about health." The third most prominent reason was "being single," and the other reasons are "no one can take care of me", "dying alone"[1]. In China, the issue of old age has become severe in three respects: income source in the future, shortcomings in the nursing care system, and financial burden of medical care[2].

1.2 Current conditions and related considerations for nursing care

In both Japan and China, elderly need emotional support and care from their families, and the traditional expectation is to live in a familiar environment. In Japan, 54.4% of caregivers live with their family members who need care. Overall, despite annual changes, the number of "three-generation households" is decreasing, and the age of the elderly in need of nursing has increased. When a caregiver quits their job to take care of their parents, the reasons given were, "difficult to balance work and nursing care" as the most common reason, which was followed by "deterioration of physical and mental health"[3].

In China, the care of the elderly is legally recorded as a familial obligation in 1996. The discrepancy in China's old-age dependency ratio (population aged 65 and over versus population aged 15 -64) is growing significantly. The current ratio is approximately 37.7% and may exceed 76.5% by 2055, well above the global average [4]. However, with the aging of the population and the frequent exodus of the younger generation, there has been an increase in the number of "Separated Families" and "Empty-Nest Families" (those in which the children are not living close to the elderly, who are thus left living alone in the family home).

By comparing the current situations of nursing care at home in Japan and China, although the spouse is the primary choice for the home nursing caregiver, as they get older, both the elderly who receive care and the spouses who take care of them are beginning to suffer from an increasing number of health problems. As a result, their children assume a critical role. In Japan, full-time housewives are decreasing, and it has become more common for mothers to work due to the economic decline, which makes it more challenging to care for their parents. In China, the first generation born after the One-Child Policy, which was in place from 1980 to 2016, is now 40 years old, and many of their parents are over the age of 65.

A number of factors have been proposed as key influences in considerations for home nursing care. Iwata et al. (2016) examined whether the impact of nursing care on one's life differs according to the gender of the person in need of care and the relationship of the primary caregiver. The analysis results showed that, husbands and wives receiving care had a high sense of satisfaction and acceptance of care-giving [5]. Similarly, previous research (Peng and Wang, 2021) has clearly shown that married-couple households are more likely to receive nursing care at home, three-generation households are more likely to receive nursing care at their children's homes, and single-person households are more likely to receive nursing care at a facility with nursing care services [6]. Based

on this, it can be assumed that those needing care who have a spouse who live with a spouse are more likely to choose to receive care at home.

Nursing care service is a general term for services available to people who need nursing care. There are several types of nursing care services, including "at-home services," "community-based services," and "facility care services." In Japan, the number of in-home service beneficiaries increased by 152.1% from 1.24 million in 2000[7]. But also, various social facilities with nursing care services are developing and expanding. It is one of Japan's main growth areas, with an average annual growth rate of 8.5% from 2000 to 2015[8]. However, during this rapid rush to build new nursing care facilities, a number of problems have recently arisen, including the 3 emergences of institutions with inadequate capacity, the emergence of institutions that are outside the scope of regulation, and changes in management stability and service quality [9].

In China, hiring caregivers from rural areas is a possible and primary option. However, their services are restricted to personal assistance in daily life due to lack of vocational training. As a result, more and more community-based medical service centers or institutions have started to emerge. As of 2019, there were 204,000 home nursing care service centers in China, providing a wide range of services such as elderly safety programs, daycare services, health and rehabilitation, and entertainment activities [10]. However, these institutions have specific problems, such as the number of beds that do not meet the demand, admission costs too much time, and a high risk of maltreatment [11].

In both Japan and China, the expectations of the elderly for in-home services are likely to be high. Compared with Japan, the proportion of home nursing staff who have received professional training is relatively low in China. The questionable medical training often results in substandard home nursing care services and communication breakdowns between patients and home nursing staff. Regarding the situation of nursing care facilities in Japan and China, both countries have demonstrated positive attitudes toward the market for nursing services, such as the increase in the number of nursing homes. While the number of nursing facilities is growing overall, there is a shortage in some sectors, and some facilities are not meeting the quality standard as the environment is not sufficient and the level of service must be improved.

A number of factors and considerations have influenced home care services. In Japan, Sugawara et al. (2016) found that caregiver role satisfaction, familiarity with the elderly, and the sense of self-growth were significantly lower in the group that used in-home services. It suggested that the level of bedriddenness and the need for medical care of the elderly, and the willingness of family caregivers to continue caring for the elderly in their own homes may affect the choice of in-home services [12]. In China, Peng et al. (2021) analyzed the impact of family structure and personal factors, on the elderly's preferences of receiving nursing care. The results showed that: 1) The elderly who were in a good financial situation had the most increased tendency to want to receive nursing care at home. 2) The tendency to want to receive nursing care at their own home was highest for the elderly who interacted with family members more often. 3) The tendency to want to receive nursing care at nursing facilities was highest for the elderly who participated in social activities more often [13]. In terms of psychological factors, indirect effects were demonstrated. Ogawa et al. (2011) examined the influence of personality trends in the selection of leisure activities by the elderly. The elderly with a high level of openness and extroversion tends to be highly cooperative and prefer group living so as to help each other and build relationships with others [14].

A number of factors have been proposed as key influences in nursing care preferences. However, survey items need to be reconsidered for surveys targeting people from two or more countries. The current situations surrounding family nursing care and nursing care services have similar and different considered to reflect the culture, society, and each individual's value in both countries and affect the choice of a form of nursing care. In particular, it is essential for realization of nursing care receivers to

truly understand the elderly's nursing care preferences such as home care and out-of-home care and their determinant factors.

What's more, COVID-19 has had a profound impact on emotional and mental health, particularly for middle-aged adults and seniors. Plagg et al. (2020) found that a major adverse consequence of the COVID-19 pandemic is likely to be increased social isolation and loneliness, which are strongly associated with anxiety, depression, self-harm, and suicide attempts across the lifespan [15]. Homels et al. (2020) verified that besides the psychological burden of isolation, the reduced opportunities for physical activity represent an additional health-damaging burden in the long run [16]. Considering the situation of COVID-19, this is having a profound effect on all aspects of society, including mental health and physical health. It is also possible that seniors would change their minds about their preferences of nursing care because of the changes brought on by COVID-19.

1.3 Objective

This study conducted a survey of Japanese and Chinese participants who are not currently using a nursing home regarding their health conditions, family relationships, living arrangements, financial situations, personality traits, and their preferences for home care. Based on the survey results, this study aims to clarify the differences in psychological, social, and physical characteristics between the Japanese and the Chinese based on their preferences for nursing care. In addition, since the environmental changes before and after the COVID-19 outbreak are extremely notable and should influence the self-assessment of the physical, psychological, and social factors of the participants, changes in mindset before and after the spread of COVID-19 were also examined.

2 Method

2.1 Participants

The participants were a total of 85 Japanese and Chinese who were currently living at home and capable of independent living and self-care. Of these, 35 were Japanese (11 men and 24 women; maximum age: 85 y/o, minimum age: 39 y/o, mean age: 64.9 y/o, SD = 10.89 y/o), and 50 were Chinese (26 men, 24 women; maximum age: 72 y/o, minimum age: 40 y/o, mean age: 58.2 y/o, SD = 7.35 y/o)

2.2 Ethical Considerations

Before completing the questionnaire, participants were informed that they could opt out of the study at any time and that their participation would be voluntary and anonymous.

2.3 Procedure

In March 2021, survey on the effects of differences in physical, social, and psychological factors on nursing care preferences was conducted. In this survey, we asked participants to answer questions about their nursing care preferences and physical, social, and psychological factors (Table 2-3-1). Participants were asked to recall the situation before and after COVID-19 for some of the issues as well as the Japanese version of the Ten Item Personality Inventory (TIPI-J) (Oshio et al., 2012) and Chinese

version of the Ten Item Personality Inventory (TIPI-C) (Li, 2013) (Table 2-3- 2). Both TIPI-J or TIPI-C consists of 10 items with the same meanings, 2 items (positive and negative) corresponding to each of the Big Five factors, and 7 options ranging from "disagree strongly" (1 point) to "agree strongly" (7 points). The responses to the questions in Table 2 -3-1 and the personality scores (Extroversion, Agreeableness, Conscientiousness, Neuroticism, and Openness) of TIPI were used for the following analysis.

2.4 Analysis Method

The data were analyzed by descriptive and inferential statistics through SPSS 26. Statistical data analysis was conducted using the responses to the questionnaire items (Table 2.4.1), and the scores on each participant's personality (extroversion, agreeableness, conscientiousness, neuroticism, and openness) calculated by TIPI (in Table 2.4.2). The participants were divided into two groups based on their preferences for the following analysis. Those who answered "A (want to receive nursing care at home as much as possible)" to the question on "Nursing Care preferences" in Table 2.4.1 were classified as "family care". Those who answered "B (residences with nursing care services)" or "C (want to use a nursing home or such facility)" were classified as "public care."

The Fisher's exact test was performed to compare the ratio of the participants who were classified as "family care" and "public care" between Japanese and Chinese participants.

A two-way analysis of variance (ANOVA) was also conducted to compare the psychological, social, and physical characteristics depending on the participants' nationality (Japanese or Chinese) and their nursing care preferences. The responses to the questions in Table 2.4.1 and the scores on the personality test in Table 2.4.2 were compared with ANOVA. In the two-way ANOVA, the independent variables were nationality (Japanese or Chinese) and nursing care preferences ("family care" or "public care") while the dependent variables were the answers to the questions regarding physical, social, and psychological factors.

Table 2.4.1 Questions.

Current Health Status: What is your current state of health? (1. not good, 2. not so good, 3. neither good nor bad, 4. somewhat good, 5. good)
Degree of Physical Condition Interfering with Lives: How much does your physical condition interfere with your life? (1. very much, 2. somewhat, 3. undecided, 4. little, 5. not at all)
Housing Condition: Which of the following is your housing condition? (Purchased property, rented property, other)
Degree of Satisfaction with Current Living Environments: Are you satisfied with your current living environment? (1. unsatisfied, 2. somewhat unsatisfied, 3. undecided, 4. somewhat satisfied, 5. satisfied)
Spouse: Do you currently have a spouse? (Yes, No)
Children: Do you currently have children? (Yes, No)
Relationship with Families: How is your relationship with your family? (1. bad, 2. not good, 3. undecided, 4. somewhat good, 5. good)
In the following questions, we asked respondents to answer the situation before and after April 2020, when the COVID- 19 infection spread, and a state of emergency were declared (before and after COVID- 19).

Relationship with Neighbors: How is your relationship with your neighbors?
 (1. bad, 2. not good, 3. undecided, 4. somewhat good, 5. good)

Frequency of Meeting Friends and Relatives: How often do you meet your friends and relatives? (1. never, 2. less than once a month, 3. a few days a month, 4. about once a week, 5. about 2-3 times a week, 6. about 4-5 times a week)

Frequency of Participating in Social Welfare Activities such as Community Events, Neighborhood Associations, and Volunteer Activities:
 How often do you participate in social welfare activities such as events, neighborhood associations, and volunteer activities?
 (1. never, 2. less than once a month, 3. 2 to 3 days a month, 4. about once a week, 5. 2 to 3 times a week, 6. 4 to 5 times a week)

Playing Sports or Exercise Frequency: How often do you play sports or exercise in a week? (1. never, 2. about 1-3 times, 3. about 4-6 times, 4. every day)

Degree of Satisfaction with Income: How satisfied are you with your income?
 (1. unsatisfied, 2. somewhat unsatisfied, 3. undecided, 4. somewhat satisfied, 5. satisfied)

Degree of Satisfaction with Savings (savings, trusts, bonds, stocks, insurance, etc.): How satisfied are you with your savings (savings, trusts, bonds, stocks, insurance, etc.)?
 (1. unsatisfied, 2. somewhat unsatisfied, 3. undecided, 4. somewhat satisfied, 5. satisfied)

Degree of Satisfaction with Lives: How satisfied are you with you life?
 (1. unsatisfied, 2. somewhat unsatisfied, 3. undecided, 4. somewhat satisfied, 5. satisfied)

Nursing Care preferences: If nursing care becomes necessary in the future, where would you like to receive nursing care?
 (A: "I would like to receive care at home as much as possible," B: "I would like to live in an apartment with nursing care service," C: "I would like to use a nursing home or such facility.")

In addition, the participants were asked to describe freely about the reason why they chose A, B, or C in the questions about nursing care preferences.

Table 2.4.2 Items in TIPI.

Extroversion
 I see myself as extroverted and enthusiastic.
 I see myself as reserved and quiet.

Agreeableness
 I see myself as critical and quarrelsome.
 I see myself as sympathetic and warm.

Conscientiousness
 I see myself as dependable and self-disciplined.
 I see myself as disorganized and careless.

Neuroticism
 I see myself as anxious and easily upset
 I see myself as calm and emotionally stable.

Openness
 I see myself as open to new experiences and complex.
 I see myself as conventional and uncreative.

3 Results

3.1 Results of analysis of Fisher's exact test

Table 3.1 presents the breakdown of responses for nursing care preferences of Japanese and Chinese participants before and after COVID-19. The results of Fisher's exact test showed no significant differences between their responses.

TABLE 3.1 Breakdown of responses for nursing care preferences

Nationality	Nursing care preferences (before COVID-19)		Nursing care preferences (after COVID-19)	
	<i>Family care</i>	<i>Public care</i>	<i>Family care</i>	<i>Public care</i>
Japanese	21	14	22	13
Chinese	28	22	31	19

3.2 Results of Analysis of Variance (ANOVA)

A two-way ANOVA was conducted on the answers to the questions regarding physical, social, and psychological factors using the participant's nationality (Japanese or Chinese) and nursing care preferences ("family care" or "public care") as factors.

The results of the ANOVA showed that the main effect of nationality was significant for the scores of extroversion ($f(1, 81) = 15.128, p < .01$; Japanese > Chinese), conscientiousness ($f(1, 81) = 8.299, p < .01$; Japanese < Chinese), degree of physical condition interfering with lives ($f(1, 81) = 7.915, p < .01$; Japanese < Chinese), relationship with families ($f(1, 81) = 25.764, p < .01$; Japanese < Chinese), playing sports or exercise frequency before COVID-19 ($f(1, 81) = 10.496, p < .01$; Japanese < Chinese), degree of satisfaction with income before COVID -19 ($f(1, 81) = 8.260, p < .01$; Japanese < Chinese), degree of satisfaction with savings before COVID-19 ($f(1, 81) = 6.207, p < .05$; Japanese < Chinese), and degree of satisfaction with lives after COVID -19 ($f(1, 81) = 4.114, p < .05$; Japanese < Chinese).

In addition, the main effect of nursing care preferences was significant for the scores of playing sports or exercise frequency before COVID -19 ($f(1, 81) = 8.407, p < .01$; family care > public care).

There was a significant interaction between nationality and nursing care preferences for the scores of conscientiousness ($f(1, 81) = 4.611, p < .05$) and playing sports or exercise frequency after COVID -19 ($f(1, 81) = 5.083, p < .05$). As a result of multiple comparison by Bonferroni's method, Chinese participants who preferred family care after COVID -19 were more conscientious than those who preferred public care after COVID -19 ($p < .05$). In addition, Japanese participants who preferred family care after COVID-19.

4 Discussion

The results of comparing the ratio of the participants who were classified as "family care" and "public care" between Japanese and Chinese participants showed no significant differences before and after COVID-19.

The results of a two-way ANOVA showed the significant interaction between the participants' nationality and nursing care preferences using the scores of conscientiousness and exercise habits. These results suggested a relationship between the Chinese participants' conscientiousness and nursing care preferences after COVID-19 as well as a relationship between the Japanese participants' exercise habits and nursing care preferences after COVID-19.

The participants' social environment possibly influenced the relationship between their exercise habits and nursing care preferences after COVID-19. The Chinese government also propagated and implemented stricter restrictions when the early outbreaks of COVID-19 took place in China. As a result, there has been a general belief that going out has a higher risk of infection and it was safer staying at home in China. Compared with China, the Japanese government did not adopt strict restrictions on going out. Because of that, some Japanese could continue their exercise habits. To receive nursing care at home, it is essential to maintain physical health as much as possible and increase independence in daily life. Therefore, among Japanese participants, those who wished to receive care at home might have tended to maintain one's health by exercising daily.

Regarding the related factors that may influence nursing care preferences, Chinese responded more positively than Japanese to the questions about degree of physical condition interfering with lives, relationship with families, exercise habits and degree of satisfaction with income and savings before COVID-19. They also responded more positively than Japanese to the questions about degree of satisfaction with lives after COVID-19. As for their personality, Japanese were more extroverted than Chinese while Chinese were more conscientious than Japanese.

As mentioned above, in China, there is the traditional concept is that the elderly and their children naturally live together (Tan and Imai. 2003), which is considered to lead to good family relationships [17]. In addition, they might not tend to think their degree of physical condition interfering with lives because their children would help them in daily life. The survey targeting the elderly living in urban areas of China by Yu et al. (2019) reported that more than 80% of the participants had a good lifestyle (e.g., maintenance of weight, exercise habits, and sufficient sleep) because they had higher average income and benefited from the medical insurance system [18]. Chinese participants of this study included many such people living in urban areas and they often have better exercise habits and are satisfied with their income and savings. However, there were no significant differences in degree of satisfaction with income and savings between the Japanese and Chinese participants. Accordingly, Chinese are presumed to have received some financial damage due to the COVID-19 pandemic. In contrast, there was a significant difference between Japanese in the degree of satisfaction with lives after COVID-19, suggesting that their life satisfaction decreased. The survey by Shiomi and Chin (1995) reported that Japanese had higher sociability than Chinese while Chinese had higher activity than Japanese [19]. Japanese people with high sociability were asked to self-quarantine during the COVID-19 and might feel stressed due to lack of communication with others, which could result in decrease of their life satisfaction.

5 Conclusion

This study aims to clarify the differences in psychological, social, and physical characteristics between Japanese and Chinese depending on their nursing care preferences. Based on the analysis results, it was demonstrated that people with higher physical activity frequency are significantly more likely to choose to receive nursing care at home.

The results of comparison between Japanese and Chinese participants indicated as follows: 1) Japanese showed higher extroversion while Chinese showed higher conscientiousness in terms of psychological factors; 2) In terms of physical and social factors, Chinese showed higher satisfaction with more factors, such as degree of physical condition interfering with lives, relationship with families, playing sports or exercise frequency, degree of satisfaction with income, degree of satisfaction with savings, and degree of satisfaction with lives. Among them, playing sports or exercise frequency, which is classified as physical factors, was confirmed to have a significant effect on nursing care preferences.

The results of this study can be used to adjust service policies in the future for the nursing care service industry. As for the Japanese and Chinese, it has also been suggested that they show the significant differences in some personality traits, extroversion, conscientiousness, and some physical and social factors. The findings can also serve as a reference for future exchanges between China and Japan in the nursing services industry.

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