Factors Related to Mental Health of Foreign Care Workers in Long-Term Care Facilities in Japan during the COVID-19 Pandemic - A Comparative Study

呉, 倩

(Degree)
博士（保健学）

(Date of Degree)
2023-03-25

(Date of Publication)
2024-03-01

(Resource Type)
doctoral thesis

(Report Number)
甲第8621号

(URL)
https://hdl.handle.net/20.500.14094/0100482369

博 士 論 文

Factors Related to Mental Health of Foreign Care Workers in Long-Term Care Facilities in Japan during the COVID-19 Pandemic - A Comparative Study

（コロナ禍における福祉現場で働く外国人介護者のmental healthに影響する要因
―日本人介護者との比較）

令和5年1月16日

神戸大学大学院保健学研究科保健学専攻

Qian Wu
（呉 倩）

Abstract

This study aimed to evaluate the factors related to the mental health of foreign care workers in Japan's long-term care (LTC) facilities and compare their results with those of native care workers. We conducted a cross-sectional survey covering 80 LTC facilities across Japan between August and November 2021. The survey mainly included mental health, workload, reward, sense of coherence, loneliness, COVID-19-specific factors and sociodemographic variables. The results show that workload was a distinct feature associated with the mental health of foreign care workers (n = 172) when compared with those of native care workers (n = 154). In addition, we found that the relationship between cultural adaptation and mental health in a sample of foreign care workers was mediated by loneliness and sense of coherence (SOC). Finally, we found that reward, loneliness, SOC, and COVID-19-specific factors had significant impacts on the mental health of both foreign and native care workers. These findings highlight the importance of support measures from the workplace for foreign care workers. Workplace interventions that focus on workload, reward, and sense of coherence strategies are required to address mental health improvement and may still be of value in dealing with the continuing COVID-19 pandemic.

Keywords: mental health, foreign care workers, workload, long-term care facilities, COVID-19

Contents

1. INTRODUCTION

1.1. Migration trend

By 2050, the number of people in OECD countries who are aged 80 years or older will rise from about 5%, as it currently stands, to almost 10% on average [1]. However, the growth of long-term care (LTC) services has been slower than the growth of the elderly population. To address this issue, many countries regard attracting and employing immigrants as one viable option. According to statistical data in OECD countries, foreign care workers make up almost 20% of the population who worked in LTC facilities [2]. Japan is no exception. As a country with one of the fastest-aging populations in the world, about 8% of the population was aged 80 years or older in 2015, and that number is expected to increase substantially by 2050 [3]. To compensate for the labor deficit in long-term care institutions, the Japanese government has recruited foreign care workers under economic partnership agreements (EPA) with Asian countries, starting with Indonesia and followed by the Philippines (in 2009) and Vietnam (in 2014) [4]. In 2017, the policy-related care work visa was issued to stimulate an increase in foreign participation in the LTC industry [5]. According to government statistics, 43,446 foreign workers were employed in long-term care facilities in 2021, an increase of 18.0 percent from the previous year [6]. As the number of foreign care workers is growing annually, they have already assumed a significant role in caring for the elderly.

1.2. Workplace of foreign care workers

The complexity of LTC environments and intensive workloads have a negative impact on the mental health of foreign care workers, manifesting as anxiety and depression, for example [7]. Studies on foreign

care workers reported that they have poor working conditions such as low wages, higher working hours, low job security and workplace abuse in host countries [8,9]. In addition, visa restrictions have been placed on foreign care workers. Most of foreign care workers in Japan possess a visa that restricts their employment to the healthcare profession and limits their length of stay, hence increasing their stress levels [10,11]. In addition, governmental restrictions, such as the requirement for 2–5 years of experience working in Japan's long-term care institutions, require them to exert greater effort than locals in order to get the national nursing qualification [4]. In a previous study, responses from 22.5% of foreign care workers suggested that they were at risk of developing mental health problems [12]. Mental health problems were associated with the high rate of turnover and work performance [13,14]. To improve qualities of care and maintain well-being in the workplace, interventions regarding care workers' mental health should be implemented [15]. However, research thus far has primarily focused on the qualitative findings [7]; there has been little research on the mental health and related factors of foreign care workers serving the public.

2. LITERATURE REVIEW

The relevant factors of foreign care workers' mental health are complex and diverse, and mainly close to their migration environment and work conditions [15]. In most previous studies, the relationship between mental health and coping skills has been investigated as well [16–18]. To clarify targeted strategies that enhance mental health, identification of potentially modifiable factors that stimulate mental health is imperative. The literature search, conducted on March 2021, included an electronic database, MEDLINE.

We used “foreign workers”, “long-term care facility" and “mental health” as the search terms (118 titles and abstracts hit). A total of 50 papers were selected based on the following inclusion criteria: peer-reviewed research, availability of English language full-text publication, involvement of foreign workers, measurement of mental health, and factors that influenced mental health; examination of relationship between mental health and other factors. Of the 25 full-text papers, we extracted the following data: author(s), year, factors that influenced mental health, statistically significant or non-significant results.

2.1. Factors that influence mental health among foreign care workers

2.1.1. Work conditions and mental health

There are several studies indicating the mental health of foreign workers associated with work conditions. Work-related stressors such as long working hours, high workload, and no free time were related to the mental health status among migrant workers in India [19]. Work overload stress of foreign care workers was the most common cause of mental health disorders [20]. According to a qualitative study, foreign care workers’ dissatisfactions regarding the workplace were due to the workload, constraints with time, and poor peer relations [21]. These factors might become work-related stressors of migrant workers, which result in mental stress [22]. Moreover, greater work-related stress results from perceived low rewards, which was identified as a risk factor of mental health among LTC workers [23]. In a previous study, Benjamin et al. found a correlation between the mental health of workers and the degree to which they had autonomy in their jobs, as well as interactions with coworkers and supervisors [24]. However, the specific factors of work

conditions that are associated with mental health among foreign care workers have not been studied in comparison to native care workers.

2.1.2. Sense of coherence and mental health

There is empirical evidence of a strong relationship between mental health and sense of coherence (SOC), such that individuals with a strong SOC report a better overall health status [25]. It is a concept that reflects the ability to cope with stress and is at the core of the autogenesis theory [26]. As a result of the current pandemic crisis, stress and challenges have been evident. To cope with them, SOC is a crucial aspect for mental health in care professionals who are exposed to stressful settings [27]. A solid SOC emerged as the strongest predictor for less severe symptoms of anxiety and depression among healthcare workers in Germany [28]. In Japan, it was identified that poor mental health was related to weak SOC among healthcare workers amid the COVID-19 pandemic [29]. It is extremely important that an attempt is made to understand the connection between the mental health and SOC of foreign care workers because so little research has been carried out on this topic.

2.1.3. Loneliness and mental health

Immigrants' social factors have been identified as important contributors to anxiety and depression symptoms [30]. Importantly, with a migrant background, most foreign care workers experienced a sense of loneliness [31]. Previous research also indicates that loneliness negatively affects the health and well-being of immigrants [32]. Additionally, the COVID-19 pandemic introduced global experiences of social isolation.

Because of the great distance between Japan and their home countries, it is especially possible for foreign care workers to experience negative effects on their mental health while working in Japan.

2.1.4. COVID-19-specific factors and mental health

On March 2020, the World Health Organization (WHO) declared the rapid world-wide spread of coronavirus disease 2019 (COVID-19) to be a pandemic. Since the onset of the ongoing pandemic, numerous cluster outbreaks of COVID-19 have been reported in long-term care (LTC) facilities worldwide, affecting both the residents and the care staff [33]. In the Japan Geriatrics Society, LTC facilities are particularly vulnerable places with most of residents at high risk of complications. To date, it was estimated that 1,600 LTC facilities reported cluster infection cases due to the emergence of COVID-19 [34]. Caring for the elderly and people infected with COVID-19 may have an impact on the mental health of care workers [35]. In addition, during the pandemic, job loss and withdrawing resources to meet household costs were significantly associated with an increase in the number of days with poor mental health [36]. The COVID-19 outbreak could be considered an uncontrollable life event that can contribute to the development of or increase in mental health problems in foreign care workers. There is little evidence about how COVID-19 has impacted foreign care workers in LTC facilities.

2.1.5. Cultural adaptation and mental health

Cultural adaptation is the process by which immigrants decide which parts of their culture from their home country to keep and which ones to change to fit their new surroundings [37–39]. These decisions might cause acculturative stress among immigrants. Studies in the U.S. have concluded that the mental health of

immigrants was highly influenced by acculturative stress [40]. Research on foreign care workers also identified that cultural adaptation was an important predictor of mental health status [41,42]. Notably, according to the results of a survey regarding the problems foreign care workers face in Japan, complicate administrative procedures, real estate contracts, and automobile sales, as well as other procedures [43]. In addition, changes in temperature, the cost of living, culture, and language may make adaptation difficult for foreign workers who live abroad [44].

2.2. Summary on the mental health of foreign care workers

At present, there is a worldwide increase in interest in foreign care workers' difficulties and mental health. Based on the literature review, limited studies are available on comprehensive mental health support for foreign care workers. Additionally, little is known about the distinct characteristics of foreign care workers in long-term care facilities in comparison with native workers. To address this deficiency, research is required on the mental health of foreign care workers and conditions in Japan's LTC institutions.

3. HYPOTHESIZED MODEL

Based on the presented empirical evidence, we set a hypothesized model of factors influencing the mental health among foreign care workers (Figure 1), comprising the following six hypotheses:

H1: Heavy workload is associated with negative mental health.

H2: Reward is related to the mental health among foreign care workers.

H3: Sense of coherence is related to positive mental health.

H4: Loneliness is related to the mental health.

H5: COVID-19-specific factors (income changes during the pandemic, COVID-19 clusters in the workplace, periodic PCR tests, whether they had been infected with COVID-19, and whether they had cared for elderly individuals with COVID-19) are associated with the mental health.

H6: There is a positive relationship between cultural adaptation and mental health.

4. PURPOSE

This study aimed to examine the factors that affect the mental health of foreign care workers in Japan's LTC facilities and compare their results with those of native care workers.

5. METHODS

5.1. Study design

This quantitative study used a cross-sectional design. Data were collected using online questionnaires (Microsoft Forms). We followed the reporting guidelines of the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement for observational studies (Supplementary file1).

5.2. Setting and data collection

Data collection took place between August and November 2021. The target population included foreign care workers and native care workers in long-term care facilities in Japan. We randomly selected 80

care facilities to distribute the study instructions as well as the questionnaire invitations. Care facilities which accepted EPA program were chosen from the latest open data on the Ministry of Health, Labor and Welfare website. The study was performed using an online survey addressed to care workers. The link to the questionnaire survey along with the introductory letter was sent to these facilities.

The participant selection criteria included: (1) working at the current facility for more than one month, (2) providing direct nursing care, except in cases where the participant was the facility head and (3) ability to read Japanese or English.

We developed separate questionnaires for foreign care workers and Japanese care workers, including demographic characteristics, work-related information (reward and workload), mental health and other variables. English and Japanese versions were available for foreign care workers and added extra items including cultural adaptation and migration-related characteristics.

5.3. Sample size

The sample size was determined by using the G*Power software (v3.1.9.2, Hein-rich-Heine-Universität Düsseldorf, Düsseldorf, Germany) [45,46]. We used 2-sided testing, odds ratio = 2, PR (Y = 1|X = 1) H0 = 0.5, α err prob = 0.05, power (1-β err prob) = 0.85, R2 other X = 0.6. The minimum sample sizes for foreign and native care workers were 167 and 120, respectively.

5.4. Measurements

Mental Health

Mental health was assessed using the Kessler 6 scale. This scale measures non-specific psychological distress and is utilized as a screening tool for serious mental illness in community-based samples [47]. The original version of the K6 was developed in English and then translated into Japanese [47]. The reliability and validity of the K6 have been systematically confirmed [47,48]. The Kessler 6 scale uses a 5-point Likert scale (ranging from 0 to 4) to assess how often the respondent felt (a) nervous, (b) hopeless, (c) restless or fidgety, (d) so depressed that nothing could cheer them up, (e) that everything was a great effort, and (f) worthless over the past 30 days. Scale items were summed to achieve a score of up to 24, with higher scores on the Kessler 6 scale indicating a worse state of mental health [47,48].

Workload

Workload was assessed using the short version of the effort–reward imbalance questionnaire. Workload was assessed by the effort sub-scale, which determines time pressure, interrupted work, and increased workload, with a total range from 3 to 12 [49,50]. Every item was scored on a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree). The validity and reliability of the Japanese version and English version were confirmed, with Cronbach's α coefficient 0.74–0.89 [50,51].

Reward

Reward was assessed using the short version of the effort–reward imbalance questionnaire, which includes a seven-item reward subscale [48,49]. Items were scored using a four-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree), with higher scores indicating a positive perception of reward, including mutual respect and promotion. The validity and reliability of the Japanese version and English

version were confirmed, with Cronbach's α coefficient 0.79–0.89 [50,51]. Accordingly, this sample had a Cronbach's α coefficient of 0.79. Subscale scores were determined by summing the seven items.

Sense of Coherence (SOC)

Sense of coherence was measured by the Sense of Coherence (SOC-3) scale [52]. It measures SOC based on three items. It consists of three questions concerning manageability, meaningfulness and comprehensibility—factors representing one's internal re-sources when coping with difficulties in life [52,53]. The questions were: "Do you usually see a solution to problems and difficulties that other people find hopeless?" (manageability), "Do you usually feel that your daily life is a source of personal satisfaction?" (meaningfulness), "Do you usually feel that the things that happen to you in your daily life are hard to understand?" (comprehensibility) [52,53]. The sum score of the SOC-3 ranged from 1 to 7, and higher values indicated a higher sense of coherence [53]. The Japanese version and English version of the SOC scale have been shown to have adequate reliability and validity [53,54]. In this study, the Cronbach's α coefficient was 0.73.

Loneliness

Loneliness was assessed using the UCLA Loneliness Scale (UCLA) [55]. The UCLA Loneliness Scale has shown satisfactory reliability (Cronbach's alpha = 0.84) [56] and both concurrent and discriminant validity [57]. This scale contains 10 items that assess how frequently a participant has felt certain emotions, with values ranging from 1 = never, 2 = rarely, 3 = sometimes, to 4 = often [58]. The scale consists of 5 positively and 5 negatively scored items with a total score of 10–40 points. Higher scores indicate greater

degrees of loneliness and there is no identified cut-off score that defines loneliness [55,58]. In Japan, the reliability and validity of the original version have been evaluated [58]. In this study, the Cronbach's α coefficient was 0.88.

COVID-19-Specific Factors

COVID-19-specific factors included income changes during the pandemic, COVID-19 clusters in the workplace, periodic PCR tests, whether they had been infected with COVID-19, and whether they had cared for elderly individuals with COVID-19.

Cultural Adaptation of foreign care workers

The cultural adaptation items were created by us, based on the Sociocultural Adaptation Scale [59]. Based on a survey on foreign care workers, from the 40-item scale, we chose 5 general-culture-relevant items [59]. These items were making friends, becoming used to Japanese food, disaster preparedness, house hunting, and valuing freedom. Participants were asked to indicate the extent to which each statement was true for them on a 5-point Likert scale (from 1 "No difficulty" to 5 "Extreme difficulty").

5.5. Data analysis

This study included both descriptive and inferential statistics. A Kolmogorov–Smirnov test was used to examine normality. The continuous variables with normal distribution were represented by the mean and standard deviation (SD), and the continuous variables with non-normal distribution were represented by the median. The distribution of categorical variables was expressed as a frequency and percentage. The distribution difference in the demographic characteristics, as well as other variables, between foreign care

workers and native care workers were evaluated by a t-test, a Mann–Whitney U test, a chi-squared test or Fisher's exact test. Correlations, alpha re-liabilities (α) for each scale, and descriptive statistics were performed with R software.

Data were further analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). SmartPLS v3.0 software was used, selecting 5000 samples for the boot-strapping procedure [60]. PLS-SEM analyses follow a two-step approach given by Hair et al. [61]. PLS-SEM is a non-parametric technique that takes advantage of the variance that can be explained in latent unobserved dimensions. Smart PLS-SEM requires less in-formation about residual distributions, measurement scales, and sample sizes compared with the covariance-based SEM [62]. In PLS-SEM, relations between latent and manifest variables, as well as between latent variables (structural/inner model), are defined in the form of path models. The directional interpreted paths are represented by connecting arrows.

5.6. Ethical considerations

This study was conducted upon receiving the approval of the Ethics Review Committee of the Kobe University department of Health Sciences, Japan (No.1014). After obtaining approval from all the ethics committees involved, we contacted the institutions which provided us with formal authorization. All the participants who met the inclusion criteria were invited to participate in the study. A complete description of this survey and informed consent forms were sent to participants prior to the questionnaires. After the participants selected "Yes," data collection was able to continue. The participants responded to the questionnaires anonymously.

6. RESULTS

In total, we recruited 335 care workers, including certified care workers and care assistants. Overall, 5 of those participating through web-based entries declined to participate. After data cleaning, we found that 4 entries were missing substantial data. We excluded these entries from further analysis, leaving 326 valid responses (foreign care workers = 172; native care workers = 154). Table 1 shows the comparisons of the demographic characteristics between the foreign care workers and native care workers. The total participants' average age was 35.05 ± 9.35 years old. However, there was an age difference between foreign and native care workers. The mean age of foreign care workers was 29.06 ± 5.25 years old. Additionally, the mean age of native care workers was 41.73 ± 8.35 years old. Moreover, the number of years of care work experience in native care workers was 10.65 ± 5.72, which was much longer than foreign care workers. There were also significant differences in professional status between the two groups. Overall, 62.21% foreign care workers did not yet have the necessary national qualifications. On the contrary, 66.23% native care workers had obtained their national qualifications. Regarding the nationality of foreign care workers, most of them were Vietnamese (n = 54, 31.40%), followed by Indonesian (n = 50, 29.07%), and the remaining were of other nationalities (n = 68, 39.53%) (Table 2).

As shown in Table 3, no significant differences were observed between the foreign care workers and the native care workers regarding mental health. Foreign care workers had a higher level of SOC than native care workers. Regarding workload and reward, the workload of native care workers was greater than that of

foreign care workers, as was the reward level. A drop in income due to COVID-19 was evident among native care workers. Other COVID-19-specific factors show no difference between the two groups.

The results of hypothesis testing among foreign care workers and native care workers are summarized in Table 4. After controlling for demographic factors (age and professional status), we found that the impact of COVID-19 was the strongest factor that positively affected mental health among both foreign care workers ($\beta = 0.325$, $p < 0.001$) and native care workers ($\beta = 0.316$, $p < 0.001$). It was also shown that loneliness has a significant effect on the mental health of both foreign care workers ($\beta = 0.246$, $p < 0.001$) and native care workers ($\beta = 0.220$, $p = 0.001$). Meanwhile, mental health was significantly associated with reward (FCW: $\beta = -0.112$; NCW: $\beta = -0.195$) and SOC (FCW: $\beta = -0.232$; NCW: $\beta = -0.293$). Workload only had a significant impact on the mental health of foreign care workers ($\beta = 0.198$, $p < 0.001$).

The PLS analysis for foreign care workers is shown in Table 5. The relationship between workload and mental health ($\beta = 0.247$, $p < 0.001$) is statistically significant, in line with the results shown in Table 3. Additionally, reward was found to have a negative effect on mental health ($\beta = -0.114$, $p = 0.023$). Conversely, cultural adaptation had no direct effect on the mental health of foreign care workers ($\beta = 0.038$, $p = 0.460$). Finally, by looking at the internal variance inflation factor (VIF) index to determine the multicollinearity between latent variables, we can see that all values were lower than the standard value of 5.00 (inner VIF: 1.200–1.640). Therefore, multicollinearity was not confirmed [63].

In this study, there were two indirect effects, which are given in Table 6. The first indirect effect concerns the mediating role of loneliness in the relationship between mental health and cultural adaptation.

This hypothesis is supported, according to the following results: t = 2.890, p = 0.004. The second indirect effect concerns the mediating role of SOC in the relationship between mental health and cultural adaptation. This hypothesis is supported, according to the following results: t = 2.545 and p = 0.011.

7. DISCUSSION

7.1. Implications for nursing management

The present study investigated mental health and related factors in foreign care workers and compared these factors with those of native care workers in Japan. To the best of our knowledge, this is the first study to compare the mental health outcomes of foreign care workers and native care workers in long-term care (LTC) facilities. This study produced three key findings. First, compared with native care workers, we determined that workload was a distinct feature connected with the mental health of foreign care workers. Second, we found that the relationship between cultural adaptation and mental health in a sample of foreign care workers is mediated by loneliness and SOC. Thirdly, COVID-19-specific factors had a strong impact on the mental health of both foreign and native care workers. In addition, we have found that reward, loneliness, and SOC are significant factors associated with the mental health of both foreign and native care workers. In terms of cultural adaptation, there is no direct evidence linking the mental health of foreign care workers.

Regarding workload, we found that foreign care workers were prone to having a lower external workload than native care workers in LTC facilities in Japan. This finding may be explained by the difference

in professional status between the two groups. Most foreign care workers are care assistants without a national qualification related to care work, whereas most native care workers are certified care workers. In Japan, most certified care workers have more than 3 years of care work experience and can undertake more specific age-related care, such as dementia care [64]. Care assistants, on the other hand, can only carry out daily life care for older individuals; for instance, they can help with bathing [65]. The age difference between local and foreign care workers may also play a role in the noticeable variation in workload. Consistent with prior research [66,67], there was a substantial age disparity between foreign care workers and local care workers in our study. Regarding physical workload, such as transferring a patient, younger care workers may feel less burdened [68]. In addition, owing to the status of foreign care workers, some leadership responsibilities, such as training new care employees, may not be assigned to them [7].

In the hypothesis testing, our findings demonstrated that only foreign care workers with a heavier workload are more likely to experience mental health issues. This was consistent with a study on the mental health of immigrant workers, which indicated that bad working conditions, particularly heavy workloads, were strongly related to mental illness [23]. Contrary to the findings of the care staff study [69], we did not find a relationship between the workload and mental health of native care workers. There is a rational explanation for this, in that immigrant workers' mental health declines as a result of the stress brought about by growing workloads and low levels of reward in host countries [70]. Work-related stress has long been recognized as a key risk factor for mi-grant workers' mental health [71]. An interesting finding from a study of interviews with foreign care workers in Japan is that completing paper care records and other documents

in Japanese is also seen as a heavy workload that can lead to burnout [7]. However, the focus of this study was not the types of workloads in the LTC sectors, but rather on the relationships between mental health and workload.

Another finding is that both foreign and native care workers with a positive perception of reward tend to possess better mental health. This finding ties well with previous studies [21,72]. This is because increasing the appropriateness of rewards can make people feel positive emotions that are good for their mental health and well-being [24]. To be more specific, occupational rewards can be broken down into three categories: satisfaction with earnings, esteem, and job security [50]. There is a tendency toward declining mental well-being after migration among foreign care workers living with lower economic conditions [10]. This is because most foreign workers emigrated to developed countries for a better economic life [12,73]. In comparison with the high cost of living in Japan, foreign care workers are typically dissatisfied with their low pay, which may have a negative impact on their mental health [7]. A new study has also identified a correlation between poor self-esteem at work and mental health issues [74]. Many care workers have an esteem need for clear acknowledgement of their sacrifices and extraordinary efforts [75]. Meanwhile, lack of job security has been highlighted as a significant mental health risk factor for care workers during the COVID-19 pandemic [76]. Fear of becoming infected may make care workers feel unsafe at work, which could worsen their mental stress [77].

Although we assumed that cultural adaptation has a direct effect on mental health based on previous reports showing that such cultural-related stress facilitates poor mental health among migrant care workers

[41,42], our results did not support this assumption. On the other hand, we found that cultural adaptation could have an indirect effect on mental health through the mediating effects of loneliness and sense of coherence (SOC).

Regarding loneliness, it has been defined as an unpleasant experience caused by a person's assessment that their network of social relations is insufficient [78]. Our findings supported the psychological pathway of the conceptual model proposed by Berkman et al. [42], who argued that social relationships may influence mental health outcomes via multiple mechanisms. As one of the most significant post-migration stressors [30], loneliness was strongly associated with cultural adaptation among foreign care workers, which was further related to their mental health.

It was also found that the SOC completely mediated the effect of cultural adaptation and mental health. This was consistent with previous studies on immigrants [79]. Our result also identified a strong relationship between SOC and mental health status which is directly in line with previous findings [28,29]. By identifying the fact that SOC mediates the relation between cultural adaptation and mental health, more emphasis can be placed on utilizing interventions that strengthen SOC for the migration population with growing mental health disorders [26]. This may be particularly beneficial in terms of mental health policy, since it may suggest that governments and institutions offer multiple means of supports rather than relying solely on language and training in caregiving skills [80].

COVID-19-specific factors were found to be strongly associated with both foreign and native care workers' mental health, even after controlling for demographic features. Research on the mental health status

of care workers has largely focused on the associations between workplace safety [81] and work-related changes by COVID-19 [82]. Many scholars found that the worst mental health among care workers was associated with caring for COVID-19-infected patients [83,84] and the fear of infection [85]. A Japanese longitudinal study also revealed that the effects of COVID-19 may have substantially reduced their income, thereby threatening their mental health [86]. Importantly, many long-term care facilities have experienced COVID-19 outbreaks [87,88], and were associated with some significant drop-in care workers, owing to elevated absences and departures [89]. Therefore, the mental health of care workers may be negatively impacted by the stress caused by insufficient manpower and increased workloads [90].

7.2. Limitations

This study possesses several limitations. First, due to the nature of cross-sectional study data collection, causal relationships between factors and mental health cannot be inferred. Second, the data collected were only from the early phase of the pandemic, which may not represent other periods of the pandemic in which circumstances might have changed. Thirdly, this study tested the mediating effects of loneliness and SOC on the relationship between cultural adaptation and mental health. However, several other factors, such as gender and social support, may act as moderators that may affect the tested relationship. Our survey was only available in Japanese and English. This limitation affected our participants because it was difficult for foreign care workers with less than N2 Japanese proficiency to participate in the Japanese version. In addition, there are a lot of Chinese and Vietnamese care workers in Japan. Since English is not their first language, they are ineligible to participate in our studies if they cannot comprehend English well. Therefore, it is

strongly suggested that the scope of this study be broadened in the future by including multiple languages among the questionnaires.

8. CONCLUSIONS

These findings highlight the importance of support measures from the workplace for foreign care workers. Workplace interventions that focus on workload, reward, and sense of coherence strategies are required in order to improve workers' mental health; it may still be of value in dealing with the continuing COVID-19 pandemic.

FUNDING: This research was funded by Kobe University Premium Program (189k012k).

ACKNOWLEDGEMENTS

My sincere appreciation goes out to the care workers who responded to the questionnaires, and the LTC directors who cooperated with this study.

I would like to express my deep gratitude to Professor Chieko Greiner, Department of Nursing, Graduate School of Health Sciences, Kobe University, whose comments and suggestions as a supervisor were of inestimable value for my study. Thanks also go to Dr. Yamaguchi, Department of Nursing, Graduate School of Health Sciences, Kobe University, whose meticulous comments were an enormous help to me.

Finally, I would want to express my thanks to my closet friends and family for their moral support and warm encouragements throughout my study.

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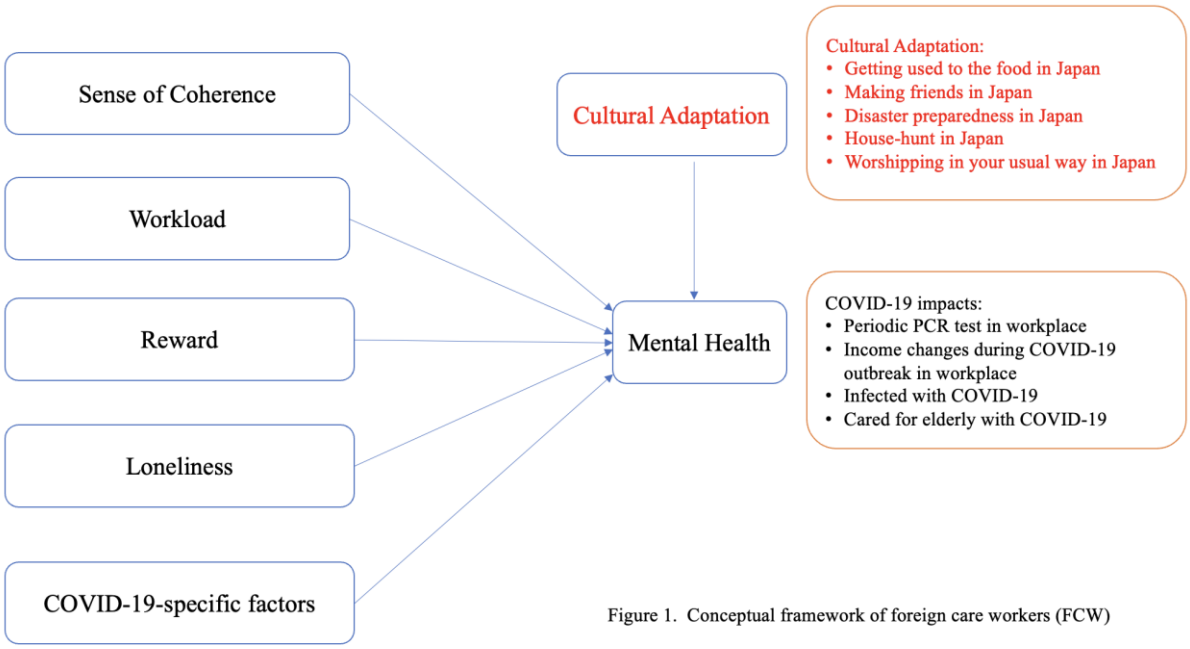

Figure 1. Conceptual framework of foreign care workers (FCW)

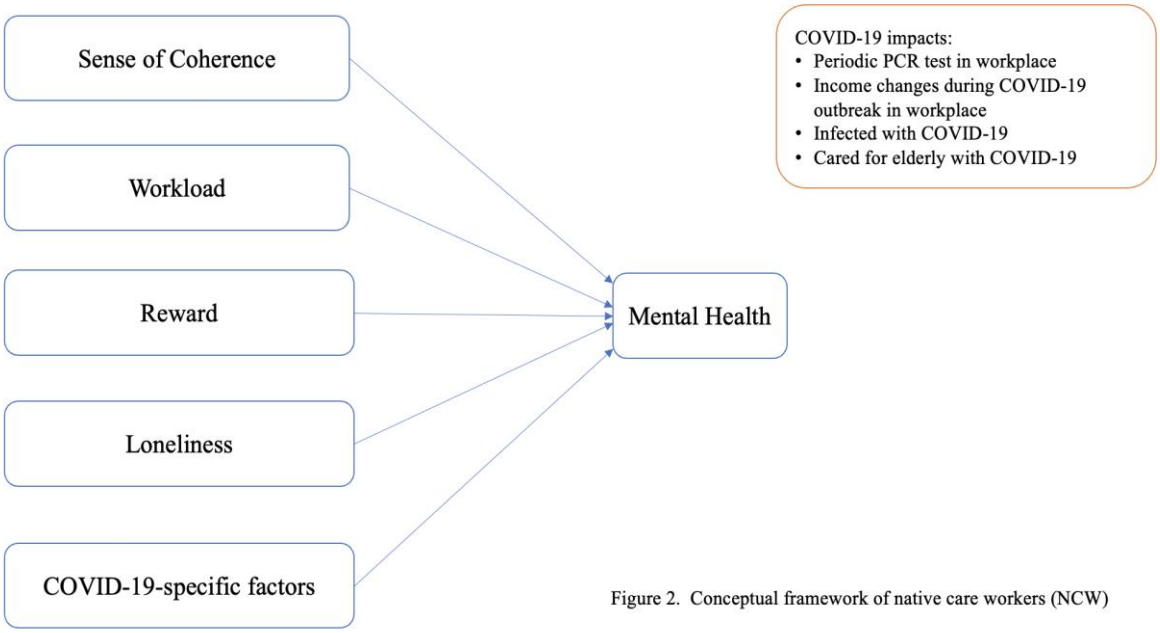

Figure 2. Conceptual framework of native care workers (NCW)

Table 1. Demographic characteristics of care workers (n = 326).

Characteristics	All n = 326 % / M ± SD	Foreign care workers n = 172 % / M ± SD	Native care workers n = 154 % / M ± SD	*P-value*
Age	35.05 ± 9.35	29.06 ± 5.25	41.73 ± 8.35	<0.001[a]
Year of Care work experience	6.92 ± 5.61	3.58 ± 2.61	10.65 ± 5.72	<0.001[a]
Gender				0.648[b]
Female	220 (67.48)	118 (68.60)	102 (66.23)	
Male	106 (32.51)	54 (31.40)	52 (33.77)	
Marriage				<0.001[b]
Unmarried	181 (55.52)	115 (66.86)	66 (42.86)	
Married	145 (44.48)	57 (33.14)	88 (57.14)	
Professional status				<0.001[b]
Certified care worker	167 (51.23)	65 (37.79)	102 (66.23)	
Care assistant	159 (48.77)	107 (62.21)	52 (33.77)	
Workplace				0.498[b]
Special elderly nursing home	165 (50.61)	84 (48.84)	81 (52.60)	
Long-term care health facility	161 (49.39)	88 (51.16)	73 (47.40)	
Educational background				<0.001[c]
High school or technical school	36 (11.04)	2 (1.16)	34 (22.07)	
Junior college	173 (47.79)	94 (54.65)	79 (51.30)	
Bachelor	114 (34.97)	73 (42.44)	41 (26.62)	
Master's degree	3 (0.92)	3 (1.74)	0 (00.00)	
Night shift				0.487[b]
Yes	216 (66.26)	111 (64.53)	105 (68.18)	
No	110 (33.74)	61 (35.47)	49 (31.82)	

Notes: M = mean, SD = standard deviation; *a: Mann-Whitney U test; b: Chi-square test; c: Fisher's exact test.*

Table 2. Background information in foreign care workers (*N*=172)

Items	Foreign care workers n (%)
Nationality	
Vietnamese	54 (31.40)
Indonesian	50 (29.07)
Philippine	38 (22.09)
Nepalese	14 (8.14)
Chinese	12 (6.98)
Brazilian	4 (2.33)
Japanese Language Proficiency Test†	
N1	23 (12.79)
N2	61 (35.47)
N3	75 (43.60)
N4	11 (6.40)
Unknown	2 (1.16)
Satisfaction with migration	
Extremely satisfied	20 (11.63)
Somewhat satisfied	96 (55.81)
Neither satisfied nor dissatisfied	46 (26.74)
Somewhat dissatisfied	8 (4.65)
Feeling discriminated as a foreigner	
Never	47 (27.33)
Seldom	99 (57.56)
Sometimes	26 (15.12)

† The Japanese-Language Proficiency Test is conducted both in Japan and outside Japan to evaluate and certify the language proficiency of primarily non-native speakers of Japanese since 1984. N4 and N5 measure the level of understanding of basic Japanese mainly learned in class. N1and N2 measure the level of understanding of Japanese used in a broad range of scenes in actual everyday life. N3 is a bridging level between N1/N2 and N4/N5.

Table 3. Average scores of variables in foreign care workers and native care workers

Variable	Foreign care workers n = 172 M ± SD	Native care workers n = 154 M ± SD	*P-value*
Mental health	8.18 ± 3.87	8.70 ± 4.22	0.245[d]
SOC	15.03 ± 2.82	13.91± 3.37	0.001[a]
Workload	8.35 ± 1.93	8.90 ± 2.16	0.014[a]
Reward	19.20 ± 3.88	20.76 ± 3.67	<0.001[d]
Loneliness	22.45 ± 4.89	22.95 ± 4.86	0.346[a]
COVID-19-specific factors			
Periodic PCR test in workplace			0.464[b]
Yes	148 (86.05)	128 (83.12)	
No	24 (13.95)	26 (16.88)	
COVID-19 outbreak in workplace			0.793[b]
Yes	35 (20.35)	37 (24.02)	
No	137 (79.65)	117 (75.98)	
Income changes during COVID-19			<0.001[c]
Increased a lot	1 (0.58)	1 (0.65)	
Increased	4 (2.32)	7 (4.55)	
Increased a little	36 (20.93)	15 (9.74)	
No change	113 (65.70)	92 (59.74)	
Decreased a little	11 (6.40)	33 (21.43)	
Decreased	4 (2.33)	6 (3.90)	
Decreased a lot	3 (1.74)	0 (0.00)	
Infected with COVID-19			0.225[c]
Yes	9 (5.23)	4 (2.60)	
No	155 (90.12)	142 (92.21)	
Unsure	8 (4.65)	8 (5.19)	
Cared for elderly with COVID-19			0.057 [b]
Yes	25 (14.53)	35 (22.73)	
No	147 (85.47)	119 (77.27)	

Notes: M = mean, SD = standard deviation; SOC = sense of coherence; a: Mann-Whitney U test; b: Chi-square test; c: Fisher's exact test; d: Student's t- test.

Table 4. Factors associated with mental health among foreign care workers and native care workers

Variable	Foreign Care Workers			Native Care Workers		
	n = 172			n = 154		
	Beta(β)	T-Value	*p* Values	Beta(β)	T-Value	*p* Values
SOC	-0.232	3.613	<0.001	-0.293	4.009	<0.001
Workload	0.198	3.739	<0.001	0.050	0.751	0.453
Reward	-0.112	2.120	0.035	-0.195	2.322	0.021
Loneliness	0.246	3.846	<0.001	0.220	3.297	0.001
COVID-19	0.325	6.263	<0.001	0.316	5.669	<0.001
	Adjusted R^2 (Mental health) = 0.617			Adjusted R^2 (Mental health) = 0.575		

Notes: SOC = sense of coherence; COVID-19 = COVID-19-specific factors.

Table 5. Hypothesis testing of mental health model in foreign care workers (n = 172)

	Hypotheses	Beta(β)	T-Value	95%CI	f^2	*p* Values	VIF
H1	Workload → Mental health	0.247	4.683	[0.147,0.347]	0.132	<0.001	1.170
H2	Reward → Mental health	−0.114	2.139	[−0.228,0.001]	0.023	0.030	1.410
H3	SOC → Mental health	−0.239	3.828	[−0.366, −0.111]	0.097	<0.001	1.490
H4	Loneliness → Mental health	0.207	3.194	[0.081,0.334]	0.066	<0.001	1.640
H5	COVID-19 → Mental health	0.327	6.822	[0.235,0.419]	0.211	<0.001	1.280
H6	CA → Mental health	0.038	0.783	[−0.057,0.134]	0.003	0.460	1.200

Notes: SOC = sense of coherence; COVID-19 = COVID-19-specific factors; CA: Cultural Adaptation.

Table 6. Direct and indirect effects predicting mental health of foreign care workers (n = 172)

Path	Beta	T-Value	95%CI	*p* Values
Workload → Mental health	0.241	4.788	[0.131, 0.330]	<0.001
Reward → Mental health	−0.117	2.187	[−0.245, −0.035]	0.029
SOC → Mental health	−0.246	3.987	[−0.368, −0.119]	<0.001
Loneliness → Mental health	0.213	3.491	[0.076, 0.323]	0.001
COVID-19 → Mental health	0.329	6.538	[0.228, 0.424]	<0.001
Cultural Adaptation → Loneliness	0.362	6.094	[0.269, 0.493]	<0.001
Cultural Adaptation → SOC	−0.286	4.332	[−0.436, −0.178]	<0.001
Cultural Adaptation → Loneliness → Mental Health	0.077	2.890	[0.024, 0.125]	0.004
Cultural Adaptation → SOC → Mental Health	0.071	2.545	[0.023,0.127]	0.011
		Adjusted R^2 (Mental health) = 0.591		

Notes: SOC = sense of coherence; COVID-19 = COVID-19-specific factors.

Supplementary File 1

STROBE Statement—Checklist of items that should be included in reports of *cross-sectional studies*

	Item No	Recommendation	Page No
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	NA
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	NA
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	1-7
Objectives	3	State specific objectives, including any prespecified hypotheses	7
Methods			
Study design	4	Present key elements of study design early in the paper	7
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	7,8
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	8
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	8
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	8-11
Bias	9	Describe any efforts to address potential sources of bias	NA
Study size	10	Explain how the study size was arrived at	8
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	11
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	11,12
		(*b*) Describe any methods used to examine subgroups and interactions	12

		(*c*) Explain how missing data were addressed	11
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	11,12
		(*e*) Describe any sensitivity analyses	NA
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—e.g., numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analyzed	13
		(b) Give reasons for non-participation at each stage	13
		(c) Consider use of a flow diagram	NA
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	13
		(b) Indicate number of participants with missing data for each variable of interest	13
Outcome data	15*	Report numbers of outcome events or summary measures	13
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	14,15
		(*b*) Report category boundaries when continuous variables were categorized	14,15
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	14,15
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	14
Discussion			
Key results	18	Summaries key results with reference to study objectives	15
Limitations	19	Discuss limitations of the study, considering sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	15-19
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	15-19
Generalizability	21	Discuss the generalizability (external validity) of the study results	19

Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	20

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

Questionnaires

- **Foreign care workers (English version)**

Thank you very much for following our study.

Your participation is greatly appreciated to ensure the best possible support for international research.

- **[Research Summary]** We are conducting a study about mental health status of care workers during Covid-19 pandemic in Japan. Having enough care workers is an urgent challenge, and mental health support for care providers is crucial to ensure that both foreign and Japanese care providers can work stably and continually. Furthermore, conditions for care providers, such as stress, anxiety, depressive symptoms, and insomnia, have worsened since the start of the coronavirus disease 2019 (COVID-19) pandemic. This survey is aimed to investigate mental health status of care workers and clarify the associate factors. Our findings are expected to provide basic resources for development plans on supporting mental health of care workers in the future.
- **[Before continuing]** Please know that **your participation is voluntary.** If you decide to discontinue participation in this study, you may do so without any penalty if you discontinue before submitting the survey. You may withdraw at any time during the survey. **However, once clicking "submit" after completing the survey, you will not be able to withdraw.**

If you have questions, comments or suggestions, please contact us.

「**Contact us**」Kobe University School of Medicine, Health Sciences Professor : Greiner Chieko

Kobe University School of Medicine, Health Sciences PhD student : Wu Qian

If you agree to participate, please check [✓] ☐

Part 1

1. Your gender

1. Woman 2. Man

2. Age、( ) years old

3. Nationality

1. Indonesia 2. Philippine 3. Vietnam 4. China 5. Thailand
6. Others ( )

4. Marriage status

1. Single　　2. Married　　3. Others (　　)

5. What is the highest academic level you have completed?

1. Nursing training school or Japanese training school　　2. Junior college 3. Bachelor degree　　4. graduate degree or more 5. Others

6. How many years have you live in Japan ?

1. Less than 1 year　　2. 1－2 year　　3. 2－3 year　　4. 3－5 year 5. More than 5 years

7. What was your Japanese-Language Proficiency Test score ? (Select your best score)

1. N1　　2. N2　　3. N3　　4. N4　　4. N5　　5. I am not sure

8. Does your workplace offer support for studying Japanese ?

1. Yes　　2. No　　3. I am not sure

9. Your workplace is

1. Special elderly nursing home　(特養)　　2. Nursing care facility (老健)　　3. Others

10. What is your job in your workplace?

1. Certified care worker　　2. EPA certified care worker candidate　　3. Certified helper 4. Care worker assistant or helper (with no certification)　　5. Others

11. Does your workplace offer support for preparing for the national certified care worker license examination?

1. Yes　　2. No　　3. I am not sure

12. How many years of nursing care experience do you have?

1. Less than 1 year　　2. 1－2 year　　3. 2－3 year　　4. 3－5 year　　5. More than 5 years

13. Work employee status

1. Regular employee 2. contract employee 3. Student part-time (<28h/w) 4. Part-time

14. Do you currently have two jobs or more?

1. Yes 2. No

15. Do you have a night shift in your workplace?

1. Yes 2. No

16. Was your income affected by Covid-19 pandemic?

1. No, almost the same 2. Yes, but not too much ↓
3. Yes, reduced ↓ ↓ 4. Yes, sharply reduced ↓ ↓ ↓

17. Does your workplace offer consulting services for mental health?

1. Yes, but only for who can speak Japanese
2. Yes, and foreigners are also available
3. I am not sure
4. No, I never heard that

18. Have you ever been infected with the COVID-19?

1. Yes 2. No

19. In your workplace, have you provided nursing care for anyone infected with COVID-19 ?

1. Yes 2. No

20. Is periodic PCR testing required at your workplace and how often does it conduct ?

1. Yes, 4 times a month	2. Yes, 3 times a month	3. Yes, 2 times a month
4. Yes, once a month	5. I am not sure	

Part 2. In Japan, are there some adjustment difficulties about your life which related to the different culture?

		Extremely difficult	Somewhat difficult	Somewhat not difficult	Easy
1	Japanese food culture (manner in table or cooking food ingredients)	□	□	□	□
2	Searching for an apartment in Japan	□	□	□	□
3	Coping with the disaster (earthquake, typhoon)	□	□	□	□
4	Make Japanese friends	□	□	□	□
5	Worshipping in your usual way	□	□	□	□

Part 3. The following questions ask about how you have been feeling during the **past 30 days**. For each question, please circle the number that best describes how often you had this feeling.

	During the past 30 days, about how often did you feel …	All the time	Most of the time	some of the time	A little of the time	None of the time
1	…nervous?	□	□	□	□	□
2	…hopeless?	□	□	□	□	□
3	…restless or fidgety?	□	□	□	□	□
4	…so depressed that nothing could cheer you up?	□	□	□	□	□
5	…that everything was an effort?	□	□	□	□	□
6	…worthless?	□	□	□	□	□

Part 4. We hope you can tell us about some experience in your workplace. Please select the answer that best describes your experience.

		Strongly disagree	Disagree	Agree	Strongly agree
1	I have constant time pressure due to a heavy workload	□	□	□	□
2	Over the past few years, my job has become more and more demanding	□	□	□	□
3	I receive the respect I deserve from my superior or a respective relevant person	□	□	□	□
4	Over the past few years, my job has become more and more demanding	□	□	□	□
5	My job promotion prospects are poor	□	□	□	□
6	I have experienced or I expect to experience an undesirable change in my work situation	□	□	□	□
7	My job security is poor	□	□	□	□
8	Considering all my efforts and achievements, I receive the respect and prestige I deserve at work	□	□	□	□
9	Considering all my efforts and achievements, my job promotion prospects are adequate	□	□	□	□
10	Considering all my efforts and achievements, my salary/income is adequate	□	□	□	□

Part 5. There are some questions for asking about your adaptation to a stressful situation, please click the most appropriate one of you.

		Never	Almost not	Rarely	Natural	Sometimes	Often	Always
1	Do you usually see a solution to problems and difficulties that other people find hopeless?	□	□	□	□	□	□	□
2	Do you usually feel that your daily life is a source of personal satisfaction?	□	□	□	□	□	□	□
3	Do you usually feel that the things that happen to you in your daily life are hard to understand?	□	□	□	□	□	□	□

Part 6. In Japan, may there are some changed in your life pace because of the migration and Covid-19, Please select the answer that best describes your experience now.

		Never	Rarely	Sometimes	Always
1	How often do you feel that you lack companionship?	□	□	□	□
2	How often do you feel that you have a lot in common with the people around you?	□	□	□	□
3	How often do you feel close to people?	□	□	□	□
4	How often do you feel left out?	□	□	□	□
5	How often do you feel that no one really knows you well?	□	□	□	□
6	How often do you feel isolated from others?	□	□	□	□
7	How often do you feel that there are people who really understand you?	□	□	□	□
8	How often do you feel that people are around you but not with you?	□	□	□	□
9	How often do you feel that there are people you can talk to?	□	□	□	□
10	How often do you feel that there are people you can turn to?	□	□	□	□

♦Thank you very much for your cooperation!

- **Foreign care workers (Japanese version)**

研究概要：本研究は、COVID-19 流行下、福祉現場で働く介護者の mental health の実態を調査し、その影響要因を明らかにすることを目指しております。本研究の結果を基に今後介護者の mental health 支援を検討していくための基礎資料となることが期待できます。
質問票への回答に 10 分程度の時間的制約が生じます。また質問票を提出するまでの間に研究参加を中止したい場合は、中止することができるという旨と、中断による不利益が生じません。
回答中に随時撤回することができます。但し、回答終了すると、「送信する」と押したら撤回できません。
ご質問がありましたら下記メールアドレスまでご連絡ください。
ご協力よろしくお願いします。
連絡先：神戸大学大学院保健学研究科 教授　グライナー智恵子
神戸大学大学院保健学研究科　博士課程後期課程　Wu Qian

これから以下のアンケート調査の協力に同意する。
※同意の場合は右記のボックスに☑してください。 ☐

問1. 次の質問について、それぞれ当てはまる番号に○をつけてください。(　　)内には具体的な内容をご記入ください。

1. 性別に○をつけてください

1．男性　　2．女性

2. あなたの年齢は、満(　　)歳

3. あなたの国籍は

1. インドネシア　2. フィリピン　3. ベトナム　4. 中国　5. タイ 6. その他(　　)

4. 結婚状況

1．未婚　　2．有配偶者　　3. その他

5. 最終学歴

1. 専門学校　2. 短期大学.高等専門学校　3. 大学　4. 大学院(修士 . 博士) 5. その他

6. あなたか日本に住んでいる年数は、(　　)年目です。

1．１年未満　　2．1−2 年　　3．2−3 年　　4．3−5 年　5．5 年以上

7. あなたの日本語能力試験成績は（一番高い成績）

1．N1　　2．N2　　3．N３　　4．N4　　4．N5　5．不明

8. あなたの職場では、日本語勉強に関するサポートがありますか？

1．あります　　2．ありません　　3．よくわかりません

9. 現在、勤務している場所はどこですか？

1．特別養護老人ホーム　　2．介護老人保健施設　3．よくわかりません

10. 現在の職業

1．介護福祉士　2．EPA 介護福祉士候補者　3．ヘルパー（資格あり） 4．へるぱー（資格なし）

11. 職場では、介護福祉士国家試験の準備に関するサポートがありますか？

1．あります　　2．ありません　　3．よくわかりません

12. 介護経験年数()年目

1．１年未満　　2．1−2 年　　3．2−3 年　　4．3−5 年　5．5 年以上

13. あなたは今の勤務場所の雇用形態は

1. 正社員　2. 非常勤社員　3. アルバイト(学生)　4. アルバイト(学生ではない)

14. 現在あなたは二つ以上の仕事を同時に持っていますか？

1．はい、持っています　　2．いいえ

15. あなたは夜勤シフトに従事していますか？

1. 有　　2. 無

16. 新型コロナウイルス流行の影響でご自身の収入に変化はありましたか？

1．全く変化しなかった　2．少し減った　3．減った　4．とても減った

17. あなたの職場には、メンタルヘルスに関する相談窓口が設置されていますか？

1. 設置していますが、外国語に対応できません　2. 外国語までも対応できる場合があります 3. よくわかりません　　4. 設置していません

18. あなたは今まで新型コロナウイルスに感染したことがありますか？

1. あります　　2. ありません

19. 職場で新型コロナウイルス感染者（利用者のみ）を介護したことがありますか？

1．あります　　2．ありません

20. あなたの職場では PCR 検査の実施頻度はどのくらいですか?

1. 週 1 回　2. 1ヶ月に 3 回　3. 一ヶ月に 2 回　4. 一ヶ月に 1 回　5. 不明

問２．あなたは日本で生活経験からみた感想を教えてください。以下の各文が，どの程度あなたの状況にあてはまるか，該当する文にチェック✔をつけてください。

		非常に難しい	かなり難しい	少し難しい	難しくない	簡単
1	日本の食文化 （食材、食事マナー）	□	□	□	□	□
2	日本で住む場所を探すこと	□	□	□	□	□
3	日本人と友達になること	□	□	□	□	□
4	宗教の活動 （自分のお祈り自由できる場所）	□	□	□	□	□
5	災害対応 （地震、台風など）	□	□	□	□	□

問３．過去 30 日の間にどれくらいの頻度で次のことがありましたか。あてはまる欄の数字に☑をつけてください。

		いつも	たいてい	ときどき	すこしだけ	まったくない
1	神経過敏に感じましたか。	□	□	□	□	□
2	絶望的だと感じましたか。	□	□	□	□	□
3	そわそわ、落ち着かなく感じましたか。	□	□	□	□	□
4	気分が沈み込んで、何が起こっても 気が晴れないように感じましたか。	□	□	□	□	□
5	何をするのも骨折りだ（苦労）と感じましたか。	□	□	□	□	□
6	自分は価値のない人間だと感じましたか。	□	□	□	□	□

問４．本調査票は，あなたの職業に関するものです。以下の各文が，どの程度あなたの状況にあてはまるか，該当する文にチェック✔をつけてください。

		違う	ややちがう	まあそうだ	そうだ
1	仕事の負担が重く、常に時間に追われている。	□	□	□	□
2	邪魔が入って中断させられることの多い仕事だ。	□	□	□	□
3	過去数年、だんだん仕事の負担が増えてきた。	□	□	□	□
4	私は上司、もしくはそれに相当する人から、ふさわしい評価をうけている。	□	□	□	□
5	昇進の見込みは少ない。	□	□	□	□
6	職場で、好ましくない変化を経験している。もしくは今後そういう状況が起こりうる。	□	□	□	□
7	失職の恐れがある。	□	□	□	□
8	自分の努力と成果を全て考え合わせると、私は仕事上ふさわしい評価と人望を受けている。	□	□	□	□
9	自分の努力と成果をすべて考え合わせると、私の仕事の将来の見通しは適当だ。	□	□	□	□
10	自分の努力と成果をすべて考え合わせると、私のサラリー/収入は適当だ。	□	□	□	□

問５．以下の質問はあなたの人生に対する感じ方について伺います。どの程度あなたの状況にあてはまるか、該当する文にチェック✔をつけてください。

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問６．新型コロナウイルス流行時期に、あなたは以下の気持ちを感じている頻度がどのくらいですか？

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◆長い間、ご協力ありがとうございました。

- **Native care workers**

研究概要：本研究は、COVID-19 流行下、福祉現場で働く介護者の mental health の実態を調査し、その影響要因を明らかにすることを目指しております。本研究の結果を基に今後介護者の mental health 支援を検討していくための基礎資料となることが期待できます。
質問票への回答に５分程度の時間的制約が生じます。また質問票を提出するまでの間に研究参加を中止したい場合は、中止することができるという旨と、中断による不利益が生じません。回答中に随時撤回することができます。但し、回答終了すると、「送信する」と押したら撤回できません。
ご質問がありましたら下記メールアドレスまでご連絡ください。
ご協力よろしくお願いします。
連絡先：神戸大学大学院保健学研究科 教授　グライナー智恵子
神戸大学大学院保健学研究科　博士課程後期課程　Wu Qian

これから以下のアンケート調査の協力に同意する。
※同意の場合は右記のボックスに☑してください。 ☐

問1. 次の質問について、それぞれ当てはまる番号に○をつけてください。(　　)内には具体的な内容をご記入ください。

1. 性別に○をつけてください

１．男性　　２．女性

2. あなたの年齢は、満(　　)歳

3. 結婚状況

１．未婚　　２．有配偶者

4. 最終学歴

1. 専門学校　2. 短期大学.高等専門学校　3. 大学　4. 大学院(修士 . 博士) 5. その他

5. 現在、勤務している場所はどこですか？

１．特別養護老人ホーム　　２．介護老人保健施設　　３．その他（　　）

6. 現在の職業

1．介護福祉士　2．ヘルパー（資格あり）3．ヘルパー（資格なし）4．その他

7. 職場では、介護福祉士国家試験の準備に関するサポートがありますか？

1．あります　　2．ありません　　3．よくわかりません

8. 介護経験年数()年目

1．1年未満　　2．1−2年　　3．2−3年　　4．3−5年　5．5年以上

9. あなたは今の勤務場所の雇用形態は

1. 正社員　2. 非常勤社員　3. アルバイト(学生)　4. アルバイト(学生ではない)

10. 現在あなたは二つ以上の仕事を同時に持っていますか？

1．はい、持っています　　2．いいえ

11. あなたは夜勤シフトに従事していますか？

1. 有　　2. 無

12. 新型コロナウイルス流行の影響でご自身の収入に変化はありましたか？

1．全く変化しなかった　2．少し減った　3．減った　4．とても減った

13. あなたの職場には、メンタルヘルスに関する相談窓口が設置されていますか？

1. 設置しています　　2. よくわかりません　　3. 設置していません

14. あなたは今まで新型コロナウイルスに感染したことがありますか？

1. あります　2. ありません

15. 職場で新型コロナウイルス感染者(利用者のみ)を介護したことがありますか？

１．あります　　２．ありません

16. あなたの職場では PCR 検査の実施頻度はどのくらいですか?

1. 週 1 回　2. 1ヶ月に 3 回　3. 一ヶ月に 2 回　4. 一ヶ月に 1 回　5. 不明

問２．過去 30 日の間にどれくらいの頻度で次のことがありましたか。あてはまる欄の数字に☑をつけてください。

		いつも	たいてい	ときどき	すこしだけ	まったくない
1	神経過敏に感じましたか。	□	□	□	□	□
2	絶望的だと感じましたか。	□	□	□	□	□
3	そわそわ、落ち着かなく感じましたか。	□	□	□	□	□
4	気分が沈み込んで、何が起こっても 気が晴れないように感じましたか。	□	□	□	□	□
5	何をするのも骨折りだ（苦労）と感じましたか。	□	□	□	□	□
6	自分は価値のない人間だと感じましたか。	□	□	□	□	□

問３．本調査票は，あなたの職業に関するものです。以下の各文が，どの程度あなたの状況にあてはまるか，該当する文にチェック✔をつけてください。

		違う	ややちがう	まあそうだ	そうだ
1	仕事の負担が重く、常に時間に追われている。	□	□	□	□
2	邪魔が入って中断させられることの多い仕事だ。	□	□	□	□
3	過去数年、だんだん仕事の負担が増えてきた。	□	□	□	□
4	私は上司、もしくはそれに相当する人から、ふさわしい評価をうけている。	□	□	□	□
5	昇進の見込みは少ない。	□	□	□	□
6	職場で、好ましくない変化を経験している。もしくは今後そういう状況が起こりうる。	□	□	□	□
7	失職の恐れがある。	□	□	□	□
8	自分の努力と成果を全て考え合わせると、私は仕事上ふさわしい評価と人望を受けている。	□	□	□	□
9	自分の努力と成果をすべて考え合わせると、私の仕事の将来の見通しは適当だ。	□	□	□	□
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