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Factors associated with employment of mothers caring for children with intellectual disabilities

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Objectives: This study investigated employment, financial, and health issues of Japanese mothers with school-aged children with disabilities, and factors associated with participants' employment.

Methods: A survey was conducted with 243 Japanese mothers with children aged 6 to 18 years old enrolled in a Special Education Needs School for intellectually disabled children. The mothers' employment, income, health, and time spent caregiving were compared with those of other Japanese mothers using population data. Multiple logistic regression analysis was conducted to identify factors associated with the mothers' employment status.

Results: Participants showed a lower employment rate (49%) compared with the average rate (71%) among Japanese mothers with children aged between 6 and 18 years old who lived in the same region. Over half (57%) of unemployed mothers expressed a desire to work. About 62% of mothers belonged to a lower income group, compared to 33% of Japanese families rearing children. The mothers' single-parent status, good health, college-level education, use of childcare services, and children's age were positively associated with paid employment. In particular, mothers' good health was strongly associated with their paid employment.

Conclusion: Mothers caring for children with disabilities showed lower workforce participation and lower income than other Japanese mothers. The majority of unemployed mothers showed a desire for paid employment. Further maternal health care and social support are needed to support these mothers' workforce participation.

Keywords: Japanese mothers, employment, paid work, health care, social support, financial support, school-aged children, intellectual disability

Introduction

In Japan, there were about 159 000 children with intellectual disabilities and 78 000 children with physical disabilities in 2011 (Cabinet Office Japan 2014). They accounted for 1.1% of the total population of Japanese children under the age of 18 years (Statistics Bureau: Ministry of Internal Affairs and Communications (MIAC) 2011). Around 94% of children with physical/intellectual disabilities live with their families (Cabinet Office, Japan 2014), and their primary carers are mostly (over 90%) their mothers (Kumamoto Prefecture, Japan 2014; Ozawa *et al.* 2007). About 81% of Japanese households with children under 18 years old are one- or two-parent families without any live-in adult relatives such as children's grandparents (Ministry of Health, Labour and Welfare (MHLW) 2014). However, paternal involvement in childcare is limited; fathers with children less than 6 years old spend 39 min per day on childrearing, whereas mothers spend 3 h and 22 min on average (MIAC 2011). Under these circumstances, Japanese mothers might have difficulties

in balancing paid work and childcare responsibilities, particularly if their child has a disability.

Maternal employment in Japan has been increasing in recent years. The employment rate was 63% in 2014 among Japanese mothers with children under 16. This rate was close to the average maternal employment rate of 65% among 38 countries that belonged to the Organization for Economic Co-operation and Development (OECD). However, the gap between the female employment rate (employment rate of women aged 25–54) and the maternal employment rate in Japan was highest (over 10 percentage points) among the OECD countries (OECD 2014). Over 60% of married women in Japan leave the labor force by the time they have their first child, and stay at home during their children's early childhood (Japan Institute for Labour Policy and Training (JILPT) 2015; National Institute of Population and Social Security Research (NIPSSR) 2011). Then these mothers re-enter the labor force after the children have reached school age (6 years old). Thus, the female employment rate in Japan drops for the 30–39-year-old age group and increases after this period (JILPT 2015; NIPSSR 2011). Considering these maternal employment patterns, we should examine how many mothers with school-aged children with disabilities

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participate in paid work compared to other Japanese mothers. In addition, we should examine how many mothers with no paid work have a desire for future workforce participation, and what factors are associated with their employment.

Employment issues among mothers of children with disabilities have been well studied in Western countries. Researchers reported that these mothers showed lower workforce participation than those with children without disabilities, or than other working-age mothers (Bourke-Taylor *et al.* 2011; Brown and Clark 2017; Chou *et al.* 2010, 2013; Gordon *et al.* 2007; Hope, Pearce, Whitehead and Law 2017; Kröger and Yeandle 2013; Miettinen *et al.* 2013; Porterfield 2002; Yeandle and Valentine 2013). A few studies have investigated employment issues in East Asia. Chou *et al.* (2007) reported, in their study of Taiwanese caregivers of adult children ($N=792$) with intellectual disabilities, that caregivers had a lower employment rate than other working-age citizens. A recent study on South Korean mothers ($N=138$) of adolescent children with autism spectrum disorder (10–19 years old) showed an employment rate of 30% (Lee and Chiang 2017), which was much less than the 61% employment rate of working-age (25–64-year-old) women in South Korea in 2015 (OECD 2015). As for studies conducted in Japan, Tanaka (2010) analyzed data from 489 mothers with adult children (over 18 years) with disabilities, and showed the employment rate was 42% among working-age participants (aged 40 to 59). Haruki (2015) also showed, in her analysis of data collected in 2008 from Japanese mothers ($N=270$) of children (6–18 years old) with disabilities, the participants' employment rate was 49%. The employment rates shown in both studies were apparently lower than the average employment rate of 62% among Japanese mothers with children (<18 years old) in 2009 (MHLW 2009). However, we need additional data to understand the current employment status of mothers caring for children with disabilities in Japan.

Several studies have investigated factors associated with employment of mothers caring for children with disabilities/special health care needs (Bourke-Taylor *et al.* 2011; Chou *et al.* 2010; DeRigne and Porterfield 2010; Heck and Makuc 2000; Kuhlthau and Perrin 2001; Loprest and Davidoff 2004; Montes and Halterman 2008; Okumura *et al.* 2009; Thyen *et al.* 1999; Yu and Singh 2009). They reported that mothers caring for children with severe disabilities were more likely to reduce their work hours or stop working (DeRigne 2012; Hauge *et al.* 2013; Kuhlthau and Perrin 2001; Looman *et al.* 2009). Mothers of children with developmental disabilities also showed more difficulty in working as paid employees than those with non-developmentally disabled children (Kogan *et al.* 2008; Montes and Halterman 2008). As for mothers' factors, a study in the U.S. of 70 mothers caring for children requiring technological assistance showed availability of childcare service,

family support, and being married were positively associated with mothers' employment (Thyen *et al.* 1999). In addition, a study of 302 Taiwanese mothers of adult children with intellectual disabilities showed that mothers' better health, better education, and availability of social support were associated with their employment (Chou *et al.* 2010).

To the authors' knowledge, only one study has investigated factors associated with employment of Japanese mothers of children with disabilities. Haruki (2015) showed, based on data from 270 Japanese mothers with school-aged children with disabilities, that employed mothers were more likely to have their parents' support and use paid childcare services than unemployed mothers. However, she did not investigate the mothers' health status and educational background that might be associated with maternal employment (Chou *et al.* 2010; Thyen *et al.* 1999). Moreover, the data she analyzed were collected in 2008, which was before a new law, 'Act for Comprehensive Welfare for Persons with Disabilities' (2012), was enacted. After the enactment of this law, more families have used childcare services for children with disabilities (e.g. after-school childcare services). Considering the latest change in the Japanese welfare system, further investigation should be conducted to understand the current workforce participation of these mothers and to identify factors associated with maternal employment.

Children with disabilities aged 6–18 years old in Japan attend a local mainstream school with special classes or local Special Needs Education Schools (SNESs). They choose the school that they attend based on their intellectual/physical disabilities, educational needs, health care needs, and so on. There was a total of 1114 SNESs in Japan in 2015 (Ministry of Education, Culture, Sports, Science and Technology 2015). They included a) SNESs for children with intellectually disabilities ($N=745$), b) SNESs for children with physical/motor disabilities ($N=345$), c) SNESs for children with hearing impairments ($N=118$), d) SNESs for children with visual impairments ($N=83$), and e) SNESs for children with health impairments ($N=145$). (Some SNESs are categorized into more than one disability type). Children who attend SNESs for intellectually disabled children participate in school activities in the daytime (e.g. 8:40–14:40), and some join after-school childcare programs until early evening (e.g. 17:30). Thus, we expected that these children's daily attendance at SNES would provide their mothers with opportunities for participating in paid work.

To summarize, the present study aimed to (a) investigate the current workforce participation of Japanese mothers caring for school-aged children who attend an SNES for children with intellectual disability, and (b) examine factors associated with employment of these mothers. We also aimed to examine to what extent each factor was associated with maternal employment by conducting logistic regression analysis.

Method

Data collection

A cross-sectional questionnaire survey was conducted for Japanese mothers caring for children with disabilities. The participating mothers in this study were defined as follows: (a) mothers who cared, as a primary caregiver, for children aged between 6 and 18 enrolled in SNESs for children with intellectual disability, (b) mothers who had lived in Japan since the child with disability was born, and were able to read and write Japanese. We recruited eligible mothers at two SNESs for children with intellectual disability located in Ibaraki Prefecture in the northeast of Tokyo. We targeted these schools because they are among the largest SNESs in the prefecture, which had more than 150 students. Both SNESs are located in middle-sized suburban cities named Hitachi city and Hitachinaka city, which are in the same region, that is, the northern part of Ibaraki prefecture. The populations of both cities were 192 564 and 159 576, respectively, in 2013 (Ibaraki Prefecture, Japan 2017a), and the percentages of foreign residents in the cities were 0.6% (Hitachinaka city) and 0.5% (Hitachi city), respectively (Ibaraki Prefecture, Japan 2017b). Thus, most participants were considered to be Japanese citizens.

Procedure

We conducted participant recruitment after we received permission from the SNESs' principals. All study protocols were approved by the research ethics committee of Ibaraki Christian University (Approval number 12–16). We distributed the questionnaires to 469 eligible mothers between July and September in 2013. Mothers were handed the questionnaire by their children's teachers in SNESs. Each questionnaire was accompanied by a cover letter describing the study's purpose, the questionnaire's outline, and a statement about protection of the participants' confidentiality. Mothers who consented to participate in the present survey were required to return the completed questionnaires to their children's teacher within three weeks.

Participants

Among the 469 mothers we initially contacted, 257 returned completed questionnaires (55% response rate) and 14 were excluded because their questionnaires were uncompleted. Thus, the data from 243 mothers of children with disabilities were analyzed. The characteristics of participating mothers and their children with disabilities are shown in Table 1. The mean age of the mothers and their children with disabilities was 43.3 years ($SD=5.7$) and 12.4 years ($SD=3.6$), respectively.

Measures

The present survey consisted of questions about the mothers' and their children's characteristics. The questions about mothers' characteristics included mother's age, marital status, educational background,

Table 1 Characteristics of mothers and children with disabilities ($N=243$)

	Mean (SD)	<i>n</i>	(%)
Children's characteristics			
Age in years (range: 6–18)	12.4 (3.6)		
Gender			
Male		172	(70.8)
Female		71	(29.2)
Diagnoses ^a			
Intellectual disability		181	(74.5)
Autism spectrum disorder		117	(48.2)
Down syndrome (DS)		29	(11.9)
Epilepsy		12	(4.9)
Genetic disorders (except DS)		11	(4.5)
Attention-deficit hyperactivity disorder		5	(2.1)
Other diagnosis		24	(9.9)
Severity level of intellectual disability			
Severe		101	(41.6)
Moderate		52	(21.4)
Mild		28	(11.5)
None/Unknown		62	(25.5)
Mothers' characteristics			
Age in years (range: 27–56)	43.3 (5.7)		
Employment status			
Employed full-time		34	(14.0)
Employed part-time		85	(35.0)
Unemployed (worked before)		106	(43.6)
Unemployed (never worked before)		18	(7.4)
Marital status			
Two-parent family		217	(89.3)
Single-parent family (Single mother)		26	(10.7)
Educational background ^b			
Completed junior high school		15	(6.2)
Completed senior high school		118	(49.2)
College degree/post-graduate degree		107	(44.6)
Health status ^b			
Good (no disease)		179	(74.9)
Not good (with chronic disease under treatment)		60	(25.1)
Diagnoses ($n=50$) ^{a,c}			
Psychiatric disorders		9	(18.0)
High blood pressure		7	(14.0)
Female genital disease		6	(12.0)
Thyroid disease		6	(12.0)
Diabetes		4	(8.0)
Asthma		4	(8.0)
Other diagnosis		19	(38.0)
Number of live-in children under 18 ^b			
One child		60	(24.8)
Two or more children		182	(75.2)
Live-in grandmother (Yes)		54	(22.2)
Live-in grandfather (Yes)		32	(13.2)
Annual household income (Japanese yen) ^{d,e}			
Less than 2 000 000 (Low income group)		42	(18.7)
2 000 000–5 000 000 (Lower-middle income group)		97	(43.1)
Over 5 000 000 (Upper-middle/Upper income group)		86	(38.2)
Person(s) available to help with caregiving (Yes) (Who helps?)		212	(87.2)
Spouse (Child's father)		183	(75.3)
Parent (Child's grandparent)		128	(52.7)
Friends/acquaintances/relatives		27	(11.1)

(Continued)

Table 1 (Continued).

	Mean (SD)	<i>n</i>	(%)
Use of childcare services (Yes)		155	(63.8)
(Service type)			
After-school childcare program		137	(56.4)
Home childcare service		14	(5.8)
Night stay at child facilities within 1 week		8	(3.3)
Care giving hours per day (weekdays) (range: 0–24)	5.1 (4.7)		
Attitude toward workforce participation ^b			
Desire to work (Yes)		174	(73.1)

^aChildren with disabilities and mothers with a disease had multiple diagnoses; thus the subcategory's percentage might not sum to 100%.

^bMissing case(s): under 6.

^cMissing cases: 10 (Of 60 mothers with a chronic disease, 50 reported their diagnoses).

^dMissing cases: 18.

^e1 U.S. dollar : 99.0 Japanese yen (9/2013). The average and median of annual household income of Japanese families with children under 18 was 6960 000 yen and 6270 000 yen, respectively in 2014.

employment status, number of live-in children under 18 years, live-in parents (child's grandmother or grandfather), and annual household income. The mothers' employment status was determined by asking whether they were engaged in paid work at present, and if they were, what employment status (full-time/part-time employed) they had. If they had no paid work at present, then we asked them whether they had ever participated in paid work. The mothers' health status was assessed by asking them whether they had any chronic disease under medical treatment, and if they had, what the diagnosis was. The time for caregiving activities was measured by asking the mothers how many hours per day (on weekdays) they spent caring for a child with a disability. Informal support for the mothers' caregiving activities was assessed by asking whether they had a person(s) available to help them with caregiving activities, and if they did, who the person was. Formal support was assessed by asking the mothers whether they regularly used childcare services, and if they did, what types of services they used. Mothers' desire to work was determined by asking whether they wanted to continue or begin to participate in paid work in the future.

The questions about children's characteristics included children's age, gender, and diagnosis given by a certified doctor (e.g. a pediatrician). The severity level of children's intellectual disability was identified by referring to the level stated on government-issued 'Intellectual Disability Certificates' ('*Ryoiku-techou*'); 'severe' (IQ under 35), 'moderate' (IQ under 50), and 'mild' (IQ under 70). In general, children with IQs over 70 do not have this certificate. The child's IQ was assessed by specialists (e.g. a developmental psychologist) using standardized intelligence scales (e.g. the Tanaka-Binet Intelligence scale) and other psychological tests.

Statistical analyses

Statistical Package for Social Sciences (SPSS ver. 22.0) was used for all statistical analyses in this study. First, we described all the variables of mothers' and children's characteristics using descriptive statistics. Then, we statistically compared the sample's key demographic data (employment rates, household income, health status, the time for caregiving) with national data of Japanese mothers that are reported by Japanese government agencies (e.g. MHLW). Second, we classified the participants into two groups: employed ($n=119$) and unemployed mothers ($n=124$). As for the classification of maternal employment status, we first divided the employed mothers into two groups in terms of their intensity of employment (part-time employed, full-time employed). However, no significant differences were found in any variables between these two groups. Thus, we combined the groups into a single employed group for further analyses in this study. To examine whether there were significant differences between employed and unemployed mothers, we conducted chi-square tests for categorical data and independent *t*-tests or ANOVA for continuous data. Finally, we examined factors associated with mothers' employment status (employed vs. unemployed) by conducting multiple logistic regression analysis. In the analysis, the dependent variable was mother's employment status (1=employed, 0=unemployed). The independent variables were those of mothers' and children's characteristics that we found to have significant differences ($p < .10$) between the employed and unemployed groups. Before conducting logistic regression analysis, we checked that there were no high correlations ($r > 0.2$) between the independent variables. A backwards-elimination method was used, with the independent variables removed from the model at each step if they did not have a significant effect ($p < .05$) on employment status and if they did not change the parameters of the remaining variables by 10% or more when they were removed.

Results

Mothers' employment, financial, and health status

Table 1 shows the characteristics of the mothers and children with disabilities in the present study. The participants' employment rate was 49%, which was significantly lower ($p < .001$) than the employment rate of 71% among other Japanese mothers with children aged between 6 and 18 years old who lived in Ibaraki prefecture, which is the region the participants lived in (MIAC 2017). Over half (57%) of the unemployed mothers expressed a desire to work in the future (Table 2). About 62% of the families in our sample belonged to the low-/lower middle-income group (annual household income < 5 000 000 yen). This rate was significantly higher ($p < .001$) than the average rate of that group among Japanese families with children

under 18 years old; only 33% belonged to the low-/lower middle-income group (MHLW 2014). Approximately 25% of the mothers in this study had some chronic disease under medical treatment. This rate was almost the same as the average rate of 26% among Japanese women (aged 30 to 49) who are under medical treatment (MHLW 2014). Notably, the most frequently reported diagnoses by the participating mothers were mental illness (e.g. depression) (18%) and high blood pressure (14%). On the other hand, the diagnoses most frequently reported by Japanese women under medical treatment were high blood pressure (11%), lumbago (6%), and eye disease (6%) (MHLW 2014).

Informal/formal social support for caregiving

The majority (87%) of the participating mothers had a person(s) who shared care responsibilities with them. In addition, 64% of the mothers regularly used childcare services. The main service they used was the after-school care program at child facilities. Few mothers (6%) used at-home childcare services. The mothers spent 5.1 h (per a day) on average caregiving for a child with a disability. This was significantly longer ($p < .001$) than the average caregiving hours (0.28 h) of Japanese mothers with children aged 6 to 18, but was close to the average of 5.5 h among mothers caring for infants (MIAC 2011).

Factors associated with the mothers' employment status

Significant differences were found in the following characteristics between employed and unemployed mothers in the

present sample: children's age and gender, mother's education and health status, marital status, live-in parents (child's grandmother), use of childcare services, caregiving hours, and desire to work (Table 2). Compared with the unemployed mothers, the employed mothers were more likely to have a college degree, have good health, use childcare services, and to spend fewer hours providing care. In addition, the employed mothers were more likely to have single-parent status, live with their mothers (children's grandmothers), have older children with a disability, and show a desire to work than unemployed mothers. The results of the multiple logistic regression analysis are shown in Table 3. The independent variables used in the analysis were as follows: mothers' marital status (two-parent household=0, single-parent household=1), college-level education (No=0, Yes=1), health status (have a disease=0, have no disease=1), use of childcare services (No=0, Yes=1), live-in grandmother (No=0, Yes=1), children's age (less than/over 12 years old: 0/1), and children's gender (female=0, male=1). No high correlations were found between these independent variables. The result showed that mothers' single-parent status, good health, college-level education, use of childcare services, and children's age (over 12 years old) had significant and positive effects on their employment. In particular, the mothers' good health and single-parent status were strongly associated with their paid employment compared with the other factors.

Discussion

During the last two decades, studies in the U.S., Europe, Australia, and East Asia (e.g. Taiwan) have reported that mothers of children with disabilities had difficulty

Table 2 Characteristics of mothers and children with disabilities by mothers' employment status (N=243)

	Employment status		F	χ^2
	Employed (n=119)	Unemployed (n=124)		
Children's characteristics				
Age in years (Mean, SD)	12.89 ± 3.39	11.86 ± 3.80	4.75*	
Gender (% Male)	91 (76.5)	81 (65.3)		3.65 †
Intellectual disability (% Severe)	50 (42.0)	51 (41.1)		0.00
Mothers' characteristics				
Age in years (Mean, SD)	43.29 ± 5.71	43.32 ± 5.66	0.02	
Education (% College degree)	59 (50.0)	46 (37.1)		5.22 *
Health (% Good)	100 (86.2)	79 (64.8)		14.68 ***
Marital status (% Single parent)	20 (16.8)	6 (4.9)		8.98 **
Raising two or more children (% Yes)	87 (73.1)	95 (77.2)		0.55
Live-in grandmother (% Yes)	34 (28.6)	20 (16.3)		5.29 *
Live-in grandfather (% Yes)	19 (16.0)	13 (10.5)		1.54
Person(s) available to help with childcare (% Yes)	109 (91.6)	103 (83.1)		1.64
Use of childcare services (% Yes)	82 (68.9)	73 (58.9)		2.65 †
Care giving hours a day (Mean, SD)	4.09 ± 4.38	6.07 ± 4.70	9.36 *	
Annual household income (yen)				0.52
Less than 2 000 000 (Low income group) (%)	23 (20.5)	19 (16.8)		
2 000 000–5 000 000 (Lower-middle income group) (%)	47 (42.0)	50 (44.2)		
Over 5 000 000 (Upper-middle/Upper income group) (%)	42 (37.5)	44 (38.9)		
Mother's attitude toward workforce participation				
Desire to work (% Yes)	104 (90.4)	70 (56.5)		33.98 ***

† $p < .10$

* $p < .05$

** $p < .01$

*** $p < .001$.

Table 3 Logistic regression analysis predicting employment status from the mothers' and children's socio-demographic variables

Independent variable ^{a,b}	B	Wald	P value	Odds ratio	95% Confidence interval
Mother's marital status (Single parent)	1.809	11.270	0.001	6.104	2.123–17.548
Mother's health (Good)	1.645	17.657	0.001	5.182	2.406–11.161
Mother's education (with College degree)	0.639	4.451	0.035	1.894	1.046–3.429
Use of childcare services (Yes)	0.801	6.172	0.013	2.228	1.184–4.192
Child's age (over 12 years)	0.609	4.017	0.045	1.838	1.014–3.333

Notes: Model $\chi^2=44.10$, $p < .001$, Nagelkerke $R^2=0.24$, Hosmer-Lemeshow $p=0.81$.

^aNo high correlations ($r > 0.2$) were found between independent variables.

^bThe independent variables, child's gender, and live-in grandmother were removed from the model because they did not reveal a significant effect on mothers' employment status in the present analysis.

in combining paid employment and domestic care work (e.g. Bourke-Taylor *et al.* 2011; Chou *et al.* 2010; Gordon *et al.* 2007; Hope *et al.* 2017; Porterfield 2002). However, little is known about this issue in Japan. The present study conducted a questionnaire survey for Japanese mothers caring for children with disabilities, and analyzed data collected from 243 mothers. Our present findings are summarized below.

First, consistent with the previous studies, the mothers in this study showed lower workforce participation and lower income than other Japanese mothers rearing children in the same age group. A study of Japanese families ($N=533$) with children with hearing loss also showed a relatively lower income of this group compared to other Japanese families with children (Kudo 2012). Raising children with disabilities requires additional out-of-pocket expenditures (e.g. Lukemeyer *et al.* 2000) such as paid childcare services, in-/out-patient hospital care, and health care professionals' services (e.g. speech/occupational/physical therapist). Thus, families with a lower income might experience financial stress when trying to meet their children's needs (DeRigne 2012). In our previous study, financial necessity was the most frequently reported reason for workforce participation among mothers with disabled children. On the contrary, social achievement and having a respite from care responsibilities were less often reported as a reason for paid employment (Ejiri and Matsuzawa 2015). In Japan, parents with children with disabilities receive government subsidies, the Special Child Rearing Allowance, depending on the severity of the child's disability and on their annual household income (NIPSSR 2014). However, considering these families' relatively lower income and a lower employment rate shown in the present study, further financial and employment support should be provided for these families.

Second, most of the mothers in our sample had various kinds of social support for their caregiving work, such as paid childcare services and persons sharing the caregiving. Nevertheless, the participants' care burden in terms of time demand was as heavy as that of Japanese mothers raising infants (MIAC 2011). In addition, some mothers in our sample were suffering from mental illness such as

depression. Since we did not ask the mothers whether they had been diagnosed before or after having a child with a disability, it is unclear if their mental illness was due to the stress of having the child. Nevertheless, this result requires us to pay more attention to the mental health of mothers caring for children with disabilities. A recent analysis of Japanese households ($N=549$) with disabled children (6–17 years) showed that almost half of parents showed general psychological distress, and that nearly 9% had serious mental illness (Yamaoka *et al.* 2015). Considering the higher distress among Japanese parents caring for children with disabilities (Yamaoka *et al.* 2015; Yamaoka *et al.* 2016) and their heavier care burden shown in the present sample, health care professionals need to be more aware of the importance of health care and psychological supports for this group.

Third, mothers' better health, better education, use of childcare services, and the child's age were significantly associated with maternal employment. These results are consistent with the study conducted with Taiwanese mothers of adult children with intellectual disabilities (Chou *et al.* 2010), which suggested that mothers' health, education, and availability of social support were associated with maternal employment. In addition, our results are consistent with previous findings that for mothers of children in the U.S. requiring technological assistance with a chronic condition, availability of childcare services was associated with maternal employment (Thyen *et al.* 1999). Our study contributes to previous work in that the logistic regression analysis showed that mothers' health status was more strongly associated with being employed than other factors. There are two possible explanations for this result. One is that better health is an essential requirement for paid employment; mothers need to stay healthy to fulfill both responsibilities of paid employment and childcare. Another possible explanation is, as several researchers pointed out, that workforce participation itself plays a protective role for mothers' health (e.g. Chou, *et al.* 2010; Einam and Cuskelly 2002; Thyen *et al.* 1999). Working outside the home might enhance the mothers' use of additional social support and services for childcare, which provide them a respite from the daily routine

of care responsibilities. Participating in paid work also provides mothers an opportunity to connect with other people: families/relatives who share the care responsibility, childcare workers with professional skills, colleagues at the workplace, and so on.

The association between maternal employment and use of childcare services shown in the present study implies that further improvements of childcare services are needed for promoting workforce participation of mothers with children with disabilities (although it is possible that service use was not the cause, but the result of paid employment). Regarding informal childcare support, no significant associations were found in the regression analysis between mothers' employment status and whether they lived with children's grandmothers. However, according to a study conducted for Japanese mothers with a one-year-old child, those who had paid work were more likely to have their own mothers' regular childcare support than those who had no paid work: 61% of employed and 52% of unemployed mothers had such support (NIPSSR 2015). Considering that this might happen to mothers with children with disabilities, the association between their paid employment and grandmothers' childcare support should be investigated further. Having older children with a disability was also associated with maternal employment in the present study, which is consistent with previous studies conducted with mothers of children with physical/mental/intellectual disabilities (Porterfield 2002), children with special health care needs (Hauge *et al.* 2013), and children with intellectual/developmental disabilities (Haruki 2015). On the other hand, the severity of the child's disability was not associated with maternal paid work in our sample, which is consistent with the data on Japanese mothers of school-aged children with disabilities (Haruki 2015). However, both studies targeted the mothers of children who attended an SNES or a local mainstream school with special classes, that is, children with relatively stable conditions. Thus, we cannot generalize these results to a larger population of mothers of children with various kinds of disabilities (e.g. children of preschool age, children who stay at home with complex and severe conditions).

Being a single parent was strongly associated with the mothers' employment in this study. The single mothers' employment rate was nearly 30% higher than that of married mothers in our samples. Although no studies have reported the employment rate of single mothers who had children with disabilities in Japan, the present result is almost consistent with the Japanese population data; the employment rate of the single mothers (81%) is nearly 20% higher than mothers in two-parent households (63%) (MHLW 2013). In typical Japanese couples rearing children, fathers tend to spend many hours working outside the home and few hours providing domestic housework and childcare (MIAC 2011), which might prevent mothers from seeking paid employment during the childrearing period. In contrast, single mothers have no choice but to

work to earn a living. However, 47% of these working mothers were employed part-time; thus, over half of single-mother households in Japan fall below the relative poverty line (MHLW 2013). Given that single mothers caring for children with a disability essentially meet additional care needs and extra expenditures on their own, further financial and social support for them are needed.

To the best of our knowledge, this is the first study to identify the factors associated with paid employment of mothers with Japanese children with disabilities using logistic regression analysis. Especially, the present finding that mothers' good health was strongly associated with their paid employment encourages researchers, policy-makers, and practitioners to pay more attention to maternal health to deal with the employment issues of mothers caring for children with disabilities. In Japan, mothers have regular medical/health care support throughout the perinatal period; however, they have less opportunity to receive such support after this period. Given that mothers with disabled children have a heavy care burden and psychological distress, continuous health care by professionals is vital for promoting their health and future workforce participation.

Finally, we should note that, even with children without disabilities, Japanese mothers have difficulty in balancing their paid employment and domestic care work (NIPSSR 2011). Multiple factors are associated with this issue: the Japanese employee's long work hours at the workplace, insufficient paternal involvement in childcare, gender inequality in the labor force, a paucity of social resources for childcare, and so on. Future studies should examine these and individual factors to understand the employment issues faced by Japanese mothers caring for children with disabilities.

Limitations

The present study has some limitations. First, this study was based on a modest sample size, and the response rate for the present survey was 55%. This rate was close to the average response rate (50–59%) of a nationwide questionnaire survey conducted in 2013–2015 supported by the government (Science Council of Japan 2017). However, we should note that the response rate of the present survey implies that our findings might not reflect the characteristics of mothers who did not participate. Future studies with a larger sample size and with a higher response rate should be conducted to confirm the present findings. Second, the data analyzed in the present study were collected in a particular region of Japan. In addition, most of the children had mild to severe intellectual disabilities but no profound physical or sensory disabilities. Therefore, we cannot generalize the present findings to the broader population of Japanese families caring for children with various types of disabilities, including those with severe conditions. Future studies should be conducted with families caring for children with a wider range of disabilities and health conditions who live in various regions of Japan. Third, we showed the association between mothers' health status and

paid employment, but did not clarify a causal relationship between them. Further investigations using a longitudinal design are required to address this issue. Finally, we should note that having no paid work and concentrating on childcare at home may be an appropriate choice or an unavoidable option for some mothers. For instance, mothers who have serious health problems or those who care for a child requiring frequent hospital treatments might have great difficulty in working outside the home. This leads us to acknowledge that promoting maternal workforce participation is not the only, but one of various ways to improve the social, economic, and psychological well-being of mothers caring for children with disabilities.

Conclusions

Mothers caring for school-aged children with disabilities showed lower workforce participation and lower income than other Japanese mothers with children in the same age group. Over half of unemployed mothers in this study showed a desire to work in the future. Mothers' single-parent status, better health, better education, use of childcare services, and child's age were significantly associated with their paid employment. Further improvements of social support including childcare services and maternal health care by professionals are necessary to promote paid employment of mothers of children with disabilities in Japan.

Geo location information

Ibaraki, Japan.

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References

- Bourke-Taylor, H., Howie, L. and Law, M. 2011. Barriers to maternal workforce participation and relationship between paid work and health. *Journal of Intellectual Disability Research*, 55, 511–520.
- Brown, T. J. and Clark, C. 2017. Employed parents of children with disabilities and work family life balance: A literature review. *Child & Youth Care Forum*, 46, 857–876.
- Cabinet Office, Japan. 2014. *The annual report on government measures for persons with disabilities*. (H27-Syougai-sya-hakusho) Cabinet Office. [online] Available at: <http://www8.cao.go.jp/shougai/whitepaper/h27hakusho/zenbun/pdf/s3_3.pdf> (in Japanese) [Accessed 30 March 2017].
- Chou, Y. C., Lin, L. C., Chang, A. L. and Schalock, R. L. 2007. The quality of life of family caregivers of adults with intellectual disabilities in Taiwan. *Journal of Applied Research in Intellectual Disabilities*, 20, 200–210.
- Chou, Y. C., Nakano, T., Chang, H. and Liang, L. 2013. Parent-carers in Taiwan and Japan: Lifelong caring responsibilities within a familistic welfare system. In: T. Kröger and S. Yeandle, eds. *Combining paid work and family care: Policies and experiences in international perspective*. Bristol: Policy Press, pp. 143–160.
- Chou, Y. C., Pu, C. Y., Kröger, T. and Fu, L. Y. 2010. Caring, employment, and quality of life: Comparison of employed and nonemployed mothers of adults with intellectual disability. *American Journal on Intellectual and Developmental Disabilities*, 115, 406–420.
- DeRigne, L. 2012. The employment and financial effects on families raising children with special health care needs: An examination of the evidence. *Journal of Pediatric Health Care*, 26, 283–290.
- DeRigne, L. and Porterfield, S. 2010. Employment change and the role of the medical home for married and single-mother families with children with special health care needs. *Social Science & Medicine*, 70, 631–641.
- Einam, M. and Cuskelly, M. 2002. Paid employment of mothers and fathers of an adult child with multiple disabilities. *Journal of Intellectual Disability Research*, 46, 158–167.
- Ejiri, K. and Matsuzawa, A. 2015. Factors associated with work loss among Japanese mothers with children with disabilities: Mothers' reasons for workforce participation. *The 26th Annual Meeting for the Japan Society of Developmental Psychology*, P5_25. (in Japanese).
- Gordon, M., Rosenman, L. and Cuskelly, M. 2007. Constrained labour: Maternal employment when children have disabilities. *Journal of Applied Research in Intellectual Disabilities*, 20, 236–246.
- Haruki, Y. 2015. Syogaiji no hahayano syuro nikansuru youin. *Japanese Journal on Developmental Disabilities*, 37, 174–185. (in Japanese).
- Hauge, L. J., Kornstad, T., Nes, R. B., Kristensen, P., Irgens, L. M., Eskedal, L. T., Landolt, M. A. and Vollrath, M. E. 2013. The impact of a child's special health care needs on maternal work participation during early motherhood. *Paediatric and Perinatal Epidemiology*, 27, 353–360.
- Heck, K. and Makuc, D. 2000. Parental employment and health insurance coverage among school-aged children with special health care needs. *American Journal of Public Health*, 90, 1856–1860.
- Hope, S., Pearce, A., Whitehead, M. and Law, C. 2017. Effects of child long-term illness on maternal employment: longitudinal findings from the UK Millennium Cohort Study. *The European Journal of Public Health*, 27, 48–52.

- Ibaraki Prefecture, Japan. 2017a. *Statistics: Ibaraki prefecture*. [online] (in Japanese). Available at: <<http://www.pref.ibaraki.jp/somu/shichoson/gyosei/juki/juki.html>> [Accessed 30 March 2017].
- Ibaraki Prefecture, Japan. 2017b. *Statistics: Ibaraki prefecture*. [online] (in Japanese). Available at: <<http://www.pref.ibaraki.jp/kikaku/tokei/fukyu/tokei/tokeisyo/nenkan27/index.html>> [Accessed 20 September 2017].
- Japan Institute for Labour Policy and Training (JILPT). 2015. *The 3rd national survey of households with children 2014*. Tokyo: JILPT. (in Japanese).
- Kogan, M. D., Strickland, B. B., Blumberg, S. J., Singh, G. K., Perrin, J. M. and van Dyck, P. C. 2008. A national profile of the health care experiences and family impact of autism spectrum disorder among children in the United States, 2005–2006. *Pediatrics*, 122, e1149–e1158.
- Kroger, T. and Yeandle, S. 2013. *Combining paid work and family care: Policies and experiences in international perspective*. Bristol: Policy Press.
- Kudo, N. 2012. Incomes of families with hearing-impaired children. In: Association for technical aids, ed. *Clinical research on the language development of hearing-impaired children in Japan*. Tokyo: Association for Technical Aids, pp. 78–79. (in Japanese)
- Kuhlthau, K. A. and Perrin, J. M. 2001. Child Health Status and Parental Employment. *Archives of Pediatrics & Adolescent Medicine*, 155, 1346–1350.
- Kumamoto Prefecture, Japan. 2014. *Report of survey on persons and children with disability (2013)*. [online] (in Japanese) Available at: <http://www.pref.kumamoto.jp/common/UploadFileOutput.ashx?c_id=3&iid=3075&sub_id=1&fid=35&dan_id=1> [Accessed 30 March 2017].
- Lee, J. K. and Chiang, H. M. 2017. Parenting stress in South Korean mothers of adolescent children with autism spectrum disorder. *International Journal of Developmental Disabilities*, [Published online: 01 Feb 2017] <https://doi.org/10.1080/20473869.2017.1279843>.
- Looman, W. S., O'Conner-Von, S. K., Ferski, G. J. and Hildenbrand, D. A. 2009. Financial and employment problems in families of children with special health care needs: Implications for research and practice. *Journal of Pediatric Health Care*, 23, 117–125.
- Loprest, P. and Davidoff, A. 2004. How children with special health care needs affect the employment decisions of low-income parents. *Maternal and Child Health Journal*, 8, 171–182.
- Lukemeyer, A., Meyers, M. and Smeeding, T. 2000. Expensive children in poor families: Out-of-pocket expenditures for the care of disabled and chronically ill children in welfare families. *Journal of Marriage and Family*, 62, 399–415.
- Miettinen, S., Engwall, K. and Teittinen, A. 2013. Parent-carers of disabled children in Finland and Sweden: Socially excluded by a labour of love? In: T. Kröger and S. Yeandle eds. *Combining paid work and family care: Policies and experiences in international perspective*. Bristol: Policy Press, pp. 107–124.
- Ministry of Education, Culture, Sports, Science and Technology. 2015. *Special education needs schools in Japan (2015)*. Available at: <http://www.mext.go.jp/a_menu/shotou/tokubetu/002.htm> [Accessed 30 March 2017].
- Ministry of Health, Labour and Welfare. 2009. *Comprehensive survey of living conditions 2009*. Tokyo: MHLW. [online] (in Japanese). Available at: <<http://www.mhlw.go.jp/toukei/saikin/hw/k-tyosa/k-tyosa09/dl/gaikyou.pdf>> [Accessed 30 March 2017].
- Ministry of Health, Labour and Welfare. 2013. *Support for single-parent households*. Tokyo: MHLW. [online] (in Japanese). Available at: <http://www.mhlw.go.jp/bunya/kodomo/pdf/shien_01.pdf> [Accessed 30 March 2017].
- Ministry of Health, Labour and Welfare. 2014. *Comprehensive survey of living conditions 2014*. Tokyo: MHLW. [online] (in Japanese). Available at: <<http://www.mhlw.go.jp/toukei/saikin/hw/k-tyosa/k-tyosa13/dl/02.pdf>> [Accessed 30 March 2017].
- Ministry of Internal Affairs and Communications. 2011. *The 2011 survey on time use and leisure activities*. Tokyo: MIAC. (in Japanese).
- Ministry of Internal Affairs and Communications. 2017. *The 2015 national census*. Tokyo: MIAC. (in Japanese).
- Montes, G. and Halterman, J. S. 2008. Childcare problems and employment among families with preschool-aged children with autism in the United States. *Pediatrics*, 122, e202–e208.
- National Institute of Population and Social Security Research. 2011. *Fourteenth Japanese National Fertility Survey*. Tokyo: NIPSSR. (in Japanese).
- National Institute of Population and Social Security Research. 2014. *Social security in Japan 2014 policy for people with disabilities*. Tokyo: NIPSSR. [online] Available at: <<http://www.ipss.go.jp/s-info/e/ssj2014/008.html>> [Accessed 30 March 2017].
- National Institute of Population and Social Security Research. 2015. *Fifteenth Japanese national fertility survey (Annual population and social security surveys)*. Tokyo: NIPSSR. (in Japanese).
- Okumura, M. J., Van Cleave, J., Gnanasekaran, S. and Houtrow, A. 2009. Understanding factors associated with work loss for families caring for children with special health care needs. *Pediatrics*, 124, s392–s398.
- Organization for Economic Co-operation and Development. 2014. *OECD Family Database 2014*. [online] Available at: <http://www.oecd.org/els/family/LMF1_2_Maternal_Employment_Sep2014.pdf> [Accessed 30 March 2017].
- Organization for Economic Co-operation and Development. 2015. Labor force statistics. *OECD. Stat*. Available at: <<http://stats.oecd.org/>> [Accessed 30 March 2017].
- Ozawa, H., Kato, I., Ozaki, H., Ishizuka, T., Arimoto, K. and Kimiya, S. 2007. The present situation of children with psycho-motor disabilities and their parents. *No To Hattatsu*, 39, 279–282. (in Japanese).
- Porterfield, S. L. 2002. Work choices of mothers in families with children with disabilities. *Journal of Marriage and Family*, 64, 972–981.
- Science Council of Japan. 2017. *Syakai chousawo meguru kankyouhenka to mondaikaiketu ni mukete*. Science Council of Japan. [online] (in Japanese). Available at: <<http://www.scj.go.jp/ja/member/iinkai/kanji/pdf23/siry0248-5-4.pdf>> [Accessed 20 September 2017].
- Statistics Bureau, Ministry of Internal Affairs and Communications. 2011. *The 2011 population census*. MIAC. [online] (in Japanese). Available at: <<http://www.stat.go.jp/data/jinsui/2011np/index.htm>> [Accessed 20 September 2017].
- Tanaka, T. 2010. Poverty of families including person with disability: Problems in daily life. *Japanese Journal on the Issues of Persons with Disabilities*, 37, 261–272. (in Japanese).
- Thyen, U., Kuhlthau, K. and Perrin, J. M. 1999. Employment, child care, and mental health of mothers caring for children assisted by technology. *Pediatrics*, 103, 1235–1242.
- Yamaoka, Y., Tamiya, N., Moriyama, Y., Sandoval Garrido, F. A., Sumazaki, R. and Noguchi, H. 2015. Mental health of parents as caregivers of children with disabilities: Based on Japanese nationwide survey. *PLoS ONE*, 10, e0145200.
- Yamaoka, Y., Tamiya, N., Izumida, N., Kawamura, A., Takahashi, H. and Noguchi, H. 2016. The relationship between raising a child with a disability and the mental health of mothers compared to raising a child without disability in Japan. *SSM — Population Health*, 2, 542–548.
- Yeandle, S. and Valentine, K. 2013. Reconciling work and care for parent-carers of disabled children in Australia and England: Uncertain progress. In: T. Kröger and S. Yeandle, eds. *Combining paid work and family care: Policies and experiences in international perspective*. Bristol: Policy Press, pp. 125–142.
- Yu, S. M. and Singh, G. K. 2009. Household language use and health care access, unmet need, and family impact among children with a special health care need. *Pediatrics*, 124, s414–s419.