

[Original Article]

Relationship between Burnout, Mental Health, and Assertiveness among Nursery school teachers of Children with Special Needs

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Abstract

Background: It has been suggested that caring for children with special needs in the general classroom is a dangerous stressor that can lead to poor mental health among nursery school teachers. Another problem in Japan is the existence of nursery school teachers who hold certifications but do not work as nursery school teachers, or who leave their jobs because of workplace relationships.

Objective: To investigate the mental health of nursery school teachers when caring for children with special needs, we will identify the relationship between stressors, mental health, and burnout measures. Additionally, to examine the relationship between assertiveness and the mental health of nursery school teachers because it is expected to reduce relationship stress.

Method: A questionnaire was administered to nursery school teachers. Covariance structure analysis was used to determine the stressors scale in Inclusive Education (SSIE), burnout (J-MBI), mental health (J-WHO-5), and self-assertion (J-RAS) in an inclusive childcare environment for Japanese nursery school teachers.

Results: Approximately 60% of nursery school teachers were found to be in the mental health disorder group. Furthermore, it was verified that an increase in J-RAS not only decreases SSIE but also increases J-WHO-5 and may decrease burnout tendency. Nursery school teachers who currently care for children with medical care needs argued that they are more likely to experience stressors.

Conclusion: Nursery school teachers who care for children who need medical care are expected to experience worsening mental health, and immediate support is needed. Since nursery school teachers with high levels of assertiveness also have high values of mental health, we hope that assertiveness training for nursery school teachers will be developed.

Keywords: Japanese nursery school teachers, children with special needs, stressors and psychological response

1. Introduction

In Japan, preschool facilities are divided into three categories: kindergartens for educational purposes for children aged 3 to pre-elementary school, under the jurisdiction of the Ministry of Education, Culture, Sports, Science and Technology (MEXT); nursery schools and child welfare

facilities for children aged 0 to pre-elementary school, under the jurisdiction of the Ministry of Health, Labor and Welfare (MHLW); and certified childcare facilities that combine the functions of both kindergarten and nursery school, under the jurisdiction of the Cabinet Office (CAO). According to the survey conducted from 2021 to 2022, the number of children in nursery schools is approximately 2.6 million (MHLW, 2022), whereas the number of children in kindergartens is nearly 0.92 million (MEXT, 2022). Meanwhile, the number of children in certified childcare facilities is 1.06 million (Cabinet Office, 2021). According to Ikeda and Okawa (2012), kindergarten teachers and childcare workers are similar in several aspects, but they have different stressors and stress-related factors. Thus, the present study examines a sample of nursery school teachers in day-care centers, representing the largest group of subjects among those working in preschool facilities in Japan.

In recent years, the demand for childcare facilities has been rapidly increasing due to the increase in number of dual-earner families, and the “Plan for Securing Nursery School Teachers” (launched by the Ministry of Health, Labor and Welfare in 2015) made the securing of nursery school teachers an important issue in Japan. However, there is still an acute shortage of nursery school teachers, and the deteriorating mental health of such teachers has been indicated as the main reason for this shortage. A survey using the Japanese version of the Kessler Screening Scale for Psychological Distress (K6) has been conducted to clarify the mental health of nursery school teachers. The results indicated that 60.0% of nursery school teachers showed a prevalence of psychological distress (K6 score ≥ 5) (Yaginuma-Sakurai et al., 2020). In addition, according to Akagawa and Kimura (2019), up to 20% of nursery school teachers are already in a state of burnout (Akagawa and Kimura, 2019). Given this situation, investigating the mental health of nursery school teachers would be helpful in preventing early job turnover. The high prevalence of burnout has also been noted in many countries (Aboagye et al., 2018; Tasic et al., 2020). The poor mental health of nursery school teachers can be considered an issue in many countries around the world.

Further, the number of children with special needs is increasing in Japan. According to a survey conducted in 2018, the percentage of the number of nursery schools that reported having children with special needs was as high as 83.2% (MHLW, 2017). With the Salamanca Declaration, the idea and practice of inclusive education have become a global principle and are becoming more widespread in the country. The United Nations Educational, Scientific and Cultural Organization (UNESCO) defines “special educational needs” to include not only children with disabilities but also gifted children, street children, working children, children from remote areas, nomadic children, and other children living in disadvantaged or remote areas. Children living in remote areas, nomadic children, and other disadvantaged or marginalized children are all in need of support (UNESCO, 1994). In response to this trend, the core curriculum for teaching in Japan, which clarifies the qualities and abilities that should be commonly acquired in teaching programs, has been revised since 2017 to include children with special needs, such as those who have problems with their mother tongue and poverty and have learning and living difficulties and those who need systematic support. In the curriculum, children with special needs include those who have problems with their native language and poverty, learning or living difficulties, or organizational needs (MEXT, 2017).

It has been suggested that caring for children with special needs is a dangerous stressor that can lead to poor mental health in nursery school teachers. Faulkner et al. (2016) explored the work stress of childcare providers through semi-structured interviews. Among the stresses of childcare providers, dedication to the impact of factors, such as poverty and domestic violence on children, was cited. It was also elucidated that identifying problems faced by children and providing support to parents, especially single parents, also contribute to the stress of childcare workers (Faulkner et al.,

2016). However, defining children with special needs is very difficult (Japan Council for Childcare Issues, 2021). Hence, previous studies have limited the scope of children with special needs to children with disabilities (Štemberger and Kiswarday, 2018) or categorized them by the presence or absence of a disability label (Kiso, 2016). Most of the scales employed in previous studies to identify concerns about inclusive education have also been developed with the assumption that children with disabilities would be integrated into general classes (Jobe et al., 1996; Sharma and Desai, 2002). Against this background, stress among nursery school teachers must be investigated considering the diverse and changing perceptions of children with special needs.

It has also been reported that the stress of nursery school teachers is largely influenced by their perceptions and personal characteristics. Finding a relationship between cognitive appraisals and stress in nursery school teachers, Friedman-Krauss et al. (2014) reported that teachers who perceived higher levels of children's behavioral problems also felt higher levels of stress from their work and that this relationship was statistically significant (Friedman-Krauss et al., 2014). An American study on early childhood teachers who teach children from infants to third grade has noted that the impact of inclusive education on their concerns is mediated by their confidence in teaching children with disabilities (Park et al., 2018). In addition, the study has also examined the personal characteristics of caregivers, such as self-efficacy, past childcare experience, whether they have had contact with children with disabilities, gender, age, grade level taught, academic status, and training.

Therefore, the present study focused on assertiveness, which has never been investigated as a personal factor affecting stress. Assertiveness is a method of self-expression that started in the 1970s in the U.S. It refers to communicating appropriately while respecting the other person, rather than stating one's point of view one way or the other. The concept of assertiveness was popularized in Japan by Hiraki (1993). A related study on nurses reported that developing assertive communication allows them to communicate their feelings in an honest and appropriate manner, leading to stress reduction and improved mental health (Daigo et al., 2010). Furthermore, According to Jovanović et al. (2019), teachers who are in charge of children with developmental disabilities have less work-related burnout than teachers with higher levels of assertiveness (Jovanović et al., 2019). According to a survey by the Tokyo Metropolitan Government's Bureau of Social Welfare and Public Health (2018), workplace relationship is the principal reason why nursery school teachers leave their jobs. Since such teachers are expected to communicate with several people, including parents and colleagues, they must have the ability to manage stress related to workplace relationships. Thus, learning assertive communication is expected to help nursery school teachers effectively build healthy workplace relationships and reduce overall stress.

In the current research, the relationship between stressors, mental health, and burnout scales will be clarified to investigate the mental health of nursery school teachers when caring for children with special needs. Yoshikane and Hayashi (2010) explored the relationship between the presence or the absence of a child with developmental characteristics in the classroom and the burnout index. In this study, nursery school teachers were more likely to experience burnout than kindergarten teachers, highlighting that nursery school teachers spend more time with children as a factor (Yoshikane and Hayashi, 2010). Additionally, according to Kiso (2013), as the number of undiagnosed developmentally disabled children increases, nursery school teachers are more likely to suffer from burnout (Kiso, 2013). A study in Turkey also affirmed that having integration students enrolled or not in the current class did not affect the burnout index of preschool teachers (Sahbaz and Kocer, 2017). Comparing these studies is difficult simply because they were conducted in different countries, and

the instruments utilized were distinct from each other. In addition, there have been no studies conducted on nursery school teachers or on whether children with special needs are enrolled in the program, which made us feel the need to investigate this issue.

Furthermore, this study will clarify the relationship between assertiveness and mental health burnout among nursery school teachers. Given that nursery school teachers interact with many people, including children, colleagues, and parents, they must learn how to communicate assertively.

2. Research Methods

In this study, we conducted a questionnaire survey of nursery school teachers. The survey examines whether the stressors of caring for children with special needs affect mental health and burnout and their relationship with assertiveness as a personal factor. An online survey was chosen as the method of data collection because it is more efficient to survey nursery school teachers in a wide range of communities.

2.1 Procedure

The survey was commissioned to an Internet research company (Rakuten Insight) that has roughly 2.2 million registered monitors. According to the 2018 survey, of the 1.54 million registered nursery school teachers, 590,000 are working as nursery school teachers (MHLW, 2020a). The number of registered nursery school teachers is 590,000 out of 1.54 million. We conducted a screening and selected 300 nursery school teachers who are certified as nursery school teachers and are currently working as classroom teachers in childcare centers to complete this survey. Care was taken to make the bias due to region and age as even as possible to prevent bias due to regional differences and age. The survey was sent out on March 12, 2021 and the collection of 300 respondents was completed on March 15, 2021. The valid response rate was 100% as the system was designed so that responses could not be completed in case of incompleteness.

As an ethical consideration, this study was conducted after obtaining approval from the **** Ethical Review Committee (approved November 1, 2020; No. 21). The survey system was initiated only after the research subjects reviewed and agreed to the privacy policy of the Internet Research Company Survey (<https://member.insight.rakuten.co.jp/explanation/privacy/>). It is clearly stated in the terms of use that the information obtained from the survey and the individual will only be presented in a form that cannot be identified and will not be used for any purpose other than that of the survey.

2.2 Participant

The subjects were 300 nursery school teachers who were qualified and currently working as classroom teachers. As for gender, 14(4.70%) were males, 286(95.3%) were females, 65(21.7%) were in their 20s, 129(43.0%) were in their 30s, 66(22.0%) were in their 40s, and 29(13.3%) were in their 50s or older. As for the type of employment, 222(74.0%) were in standard employment, 18(6.0%) in non-standard employment, and 59(20.0%) in part-time employment, and 1(0.3%) were others. The last educational background of 43(14.4%) students was vocational school, 180(60.0%) were junior college, 75(25.0%) were university, and 2(0.70%) were other. As for the classes they oversaw, 186(62.0%) were in the infant class, 100(33.3%) were in the toddler class, 11(3.7%) were in free charge, and 3(1.0%) were in other classes. With regard to the establishment entities, 88(29.3%) were public, 167(55.7%) were social welfare corporations, 32(10.7%) were stock companies, and 13(4.3%) were others.

In Japan, the Core Curriculum for the Teaching Profession, which clarifies the qualities and abilities that should be commonly acquired in teaching programs, has clearly indicated the understanding and support for children who need special support, such as those who have problems with their mother tongue or poverty, learning or living difficulties, or need systematic support (MEXT, 2017). In the present research, children with special needs were classified into the following seven categories: (1) children diagnosed as having disabilities, (2) children without a diagnosis but having special developmental needs, (3) children experiencing poverty, (4) children having needs for support due to their family environment, (5) children having been abused, (6) children requiring language support due to foreign nationality, and (7) children calling for medical care. For each item, the respondents were asked to answer in three ways: “currently in caring,” “have experience in caring,” or “have no experience in caring” (Table 1). Regarding whether they have looked after children diagnosed as having disabilities, 62(20.7%) were currently in caring, and 162(54.0%) had experience in caring. In terms of whether they have overseen children without a diagnosis but having special developmental needs, 129(43.0%) are currently in caring of such children, and 133(44.3%) have overseen such children. In regard to whether they have had experience in caring for children who require medical care, 19(6.3%) are currently in charge, and 198(66.0%) had no experience in taking charge, with the largest number of the respondents having no experience in taking caring.

2.3 Measurement method

2.3.1 The Stressor Scale in Inclusive Education

We employed the Scale in Inclusive Education (SSIE), which was developed by the authors. The scale comprises five questions ranging from “I do not feel stress at all” to “I feel very stressed” when assuming stressful situations in inclusive education. The questionnaire consists of 21 items, including “difficulty in dealing with children” (eight items), “human relations with parents and other children in the class” (seven items), “insufficient self-expertise” (two items), “burden of keeping childcare records” (two items), and “insufficient support from colleagues” (two items). This scale has Cronbach’s reliability coefficients of $\alpha = .84$ to $.93$, which ensures internal consistency, based on a survey of 211 nursery school teachers. On the basis of the results of confirmatory factor analysis, the goodness of

Table 1 Experience in caring for children with special needs

Experience in caring for children with special needs	Currently in charge		Have experience in caring		No experience in caring	
	N	%	N	%	N	%
(1) Children diagnosed as having disabilities	62	20.7	162	54.0	76	25.3
(2) Children without a diagnosis but having special developmental needs	129	43.0	133	44.3	38	12.7
(3) Children experiencing poverty	32	10.7	99	33.0	169	56.3
(4) Children with needs for support due to their family environment	72	24.0	149	49.7	79	26.3
(5) Children having been abused	31	10.3	99	33.0	170	56.7
(6) Children requiring language support due to foreign nationality	40	13.3	110	36.7	150	50.0
(7) Children requiring medical care	19	6.3	83	27.7	198	66.0

fit of the model is $X^2=384.144$, $df = 197$, $GFI = .869$, $AGFI = .832$, $CFI = .919$, $RMSEA = .067$, and $AIC = 469.144$, and the validity can be verified (Shiratori & Kojima, 2022). Nonetheless, as this scale was designed for nursery school teachers in five prefectures, mainly in the Kanto region, out of the 47 prefectures in Japan, it must be verified whether the factor structure can be replicated for nursery school teachers in a wider range of regions.

2.3.2 Burnout scale

The Maslach Burnout Inventory, which was translated into Japanese by Tao and Kubo was utilized (Kubo and Tao, 1992; Maslach and Jackson, 1981). J-MBI has also been studied with nursery school teachers, and its reliability and validity have been verified (Akagawa and Kimura, 2019; Kiso, 2016). The questionnaire consists of 17 items, with three subscales, namely, “emotional exhaustion” (five items), which includes feeling mentally fatigued at work and wanting to quit work, “depersonalization” (six items), which includes avoiding contact with colleagues and children and feeling less meaningful at work, and “decreased sense of personal accomplishment” (six items), which includes feeling joyful, enthusiastic, and satisfied at work. The survey also comprises three subscales. The responses were based on a five-point scale (1–5) ranging from “always” to “never.” The total score for “personal accomplishment” was reversed to “decreased personal accomplishment,” with a higher total score indicating higher burnout symptoms.

2.3.3 Mental health level

The “WHO-five Well-Being Index Japanese Version (J-WHO-5)” developed by the World Health Organization (WHO) was employed. The responses were based on a six-point scale (0–5) ranging from “never” to “always.” A total score of 13 or more points indicates good mental health, and a score of 13 or less indicates poor mental health (Awata et al., 2007). A total score of 13 or higher indicates good mental health, while a score of 13 or lower indicates poor mental health to create a stress scale for nursery school teachers and to examine its reliability and validity.

2.3.4 Assertiveness scale

J-RAS, translated by Suzuki et al. (2004) and completed after a review by several researchers, including a translator from the U.S., was used (Rathus, 1973; Suzuki et al., 2004). Seventeen of the 30 items are reversed items, and the higher the total score after processing the reversed items, the more assertive the respondents. After processing the reversed items, the higher the total score, the more assertive the respondents. The minimum and maximum score ranges are from -90 to $+90$. In the current study, the nursing students were surveyed, and the mean of the J-RAS total score was $-12.0 (\pm 20.2)$ (Suzuki et al., 2004).

2.4 Analysis method

For SSIE and J-MBI, the appropriateness of the factor structure was confirmed, and confirmatory factor analysis was conducted with each item as the observed variable and the measurement of each item as the latent variable.

For J-MBI, we conducted confirmatory factor analysis with each item as the observed variable and each item as the latent variable. Multiple comparisons (Games–Howell method) were performed. The results of these comparisons were shown only if differences were found.

An analysis of covariance structure was conducted with the factors of SSIE, J-WHO-5, J-MBI, and J-RAS as latent variables and the subscales of each scale as observed variables. Among the paths between the assumed latent variables, those for which no significant path coefficients were obtained were sequentially deleted one by one, starting with those with the smallest path coefficients (standard estimates). Thereafter, the deletion was repeated while checking the significance level of

the other path coefficients, and the process was terminated when all the paths between latent variables became significant. The appropriateness of the model was judged comprehensively from the three indices of goodness of fit index (GFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA).

Statistical analysis was performed using SPSS 27.0 and AMOS 26.0.

3. Results

3.1 Factor structure and total score of SSIE and J-MBI

Table 2 presents the mean values and standard deviations of SSIE and J-MBI. The Cronbach alpha coefficients were calculated to be high, ranging from $\alpha = .870$ to $.917$ for SSIE and $\alpha = .789$ to $.879$ for J-MBI. The GFI (.823–.859), CFI (.881–.896), and RMSEA (.088–.089). On the basis of a comprehensive review of the results, the factor structure of each scale was judged to be generally appropriate.

3.2 Relationship between the personal attributes of nursery school teachers and SSIE, J-MBI, and J-WHO-5

A t-test, one-way analysis of variance, and multiple comparisons using the Tukey method were conducted to clarify the relationship between the basic attributes of nursery school teachers and SSIE, J-MBI, and J-WHO-5.

Table 3 exhibits the relationship between basic attributes and SSIE. Significant differences were found in the age of nursery school teachers and “insufficient self-expertise” ($p = .006$ – $.027$). There was a significant difference between SSIE and the two subscales of “human relations with parents and other children in the class” and “burden of keeping childcare records” in terms of the relationship with the establishment of the childcare center ($p = .002$ – $.024$).

I would like to examine the relationship between J-MBI. There was a significant difference between the age of the nursery school teachers and “emotional exhaustion” and “depersonalization” ($p = .004$ – $.048$). In “depersonalization,” there was a significant difference in the relationship between the type of employment and the establishment entity ($p = .006$ – $.013$) (Table 4).

For J-WHO-5, the maximum value was 25, the minimum value was 1, and the overall mean value was 12.8 (SD = 5.28). The mental health of the nursery school teachers was below the 13 points that are in good mental health. This value is lower than the results of the study by Akada (2010),

Table 2 Results of the confirmatory factor analysis of SSIE and J-MBI and the mean values of subscales

Scale	Fitness Index	Subscale	<i>M</i>	<i>SD</i>
SSIE	GFI=. 823	Difficulty in dealing with children (8 items)	25. 85	6. 53
		Human relations with parents and other children in the class (7 items)	20. 78	5. 55
	RMSEA=. 089	Insufficient self expertise (2 items)	6. 59	1. 80
		Burden of keeping childcare records (2 items)	6. 72	2. 05
J-MBI	GFI=. 859	Insufficient support from colleagues (2 items)	5. 53	2. 05
		Emotional exhaustion (5 itemes)	13. 48	4. 54
	CFI=. 881	Depersonalization (6 itemes)	21. 35	5. 76
		Decreased sense of personal accomplishment (6 itemes)	17. 35	4. 51

Table 3 Relationship between the basic attributes of nursery school teachers and J-MBI

	N(%)	Factor I			Factor II			Factor III			Factor IV			Factor V		
		M	SD	p	M	SD	p	M	SD	p	M	SD	p	M	SD	p
Overall	300(100)	25.8	6.53		20.78	5.55		6.59	1.80		6.72	2.05		5.53	2	
Gender																
1 Male	14(4.7)	23.50	4.54	n.s.	21.21	2.89	1-2*	6.64	1.95	n.s.	7.50	2.35	n.s.	5.36	2.21	n.s.
2 Female	286(95.3)	25.96	6.59		20.76	5.65		6.58	1.80		6.68	2.03		5.54	2.04	
Age																
1 20s	65(21.7)	27.37	6.14		21.57	5.03		7.17	1.91		6.98	1.90		5.77	2.01	
2 30s	129(43.0)	25.46	6.84	n.s.	20.57	5.61	n.s.	6.41	1.82	1-2*	6.92	2.17	n.s.	5.57	2.05	n.s.
3 40s	66(22.0)	25.64	6.19		21.27	5.32		6.71	1.51	1-4**	6.47	2.00		5.26	2.06	
4 50s and older	40(13.3)	24.98	6.49		19.40	6.36		6.00	1.81		6.05	1.84		5.50	2.11	
Employment status																
1 Full-time employment	222(74.0)	26.19	6.69		21.22	5.77		6.69	1.87		6.95	2.03		5.66	2.15	
2 Part-time employment	18(6.0)	25.56	5.36	n.s.	19.39	4.13	n.s.	6.56	1.50	n.s.	5.94	2.46	1-2*	5.11	1.81	n.s.
3 Part-time job	59(20.0)	24.53	6.15		19.44	4.76		6.20	1.60		6.10	1.84		5.17	1.65	
4 Other	0(0.0)	-	-		-	-		-	-		-	-		-	-	
Final educational background																
1 Vocational school	43(14.3)	25.47	6.28		20.21	4.87		6.12	1.73		6.58	2.17		5.49	2.28	
2 Junior college	180(60.0)	25.93	6.54	n.s.	20.83	5.64	n.s.	6.52	1.73	3-1*	6.69	1.99	n.s.	5.52	1.96	n.s.
3 University	75(25.0)	25.87	6.64		21.15	5.71		7.07	1.93		6.92	2.15		5.64	2.12	
4 Other	2(0.7)	26.00	12.73		15.00	1.41		5.00	1.41		5.00	1.41		4.00	2.83	
Class in charge																
1 Infant class	186(62.0)	25.93	6.52		20.47	5.60		6.46	1.83		6.49	2.09		5.54	2.14	
2 Toddler class	100(33.3)	25.92	6.30	n.s.	21.51	5.42	n.s.	6.87	1.80	n.s.	7.30	1.87	1-2**	5.59	1.85	n.s.
3 Free charge	11(3.7)	25.09	8.85		20.18	5.81		6.18	1.40		5.82	2.04		5.27	2.37	
4 Other	3(1.0)	21.00	6.24		18.33	4.93		6.33	0.58		4.67	1.15		4.33	2.08	
Established																
1 Public	88(29.3)	26.19	6.97		21.91	4.57		6.88	1.86		7.10	2.01		5.30	1.80	
2 Social welfare service corporation	167(55.7)	25.64	6.44	n.s.	20.78	5.81	1-4**	6.48	1.77	n.s.	6.59	2.02	1-4*	5.67	2.11	n.s.
3 Joint-stock companies	32(10.7)	26.78	5.88		19.59	5.78	2-4*	6.53	1.76		6.91	2.19		5.88	2.24	
4 Other	13(4.3)	23.85	6.16		16.15	5.06		6.15	1.86		5.38	1.89		4.54	2.11	

Note: Factor I Difficulty in dealing with children, Factor II Human relations with parents and other children in the class, Factor III Insufficient self expertise, Factor IV Burden of keeping childcare records, Factor V Insufficient support from colleagues. Gender was subjected to t-test. Other items were subjected to one-way analysis of variance followed by the Tukey method as a subsequent test. * $p < .05$, ** $p < .01$.

Table 4 Basic attributes of nursery school teachers and their relationship to SSIE

		Factor I			Factor II			Factor III		
		<i>M</i>	<i>SD</i>	<i>p</i>	<i>M</i>	<i>SD</i>	<i>p</i>	<i>M</i>	<i>SD</i>	<i>p</i>
Overall		13.50	4.54		21.35	5.76		17.35	4.51	
Gender	1 Male	13.00	3.04	n. s.	20.50	4.07	n. s.	18.36	3.32	n. s.
	2 Female	13.51	4.60		21.39	5.83		17.30	4.56	
Age	1 20s	12.32	4.20	3-1* 4-2* 4-1**	19.85	5.12	3-1* 4-1*	17.06	4.11	n. s.
	2 30s	12.95	4.65		21.14	5.95		17.19	4.71	
	3 40s	14.52	4.14		22.35	5.89		17.70	4.59	
	4 50s and older	15.38	4.56		22.83	5.42		17.80	4.44	
Employment status	1 Full-time employment	12.96	4.53	3-1**	20.75	5.88	3-1*	17.21	4.63	n. s.
	2 Part-time employment	14.33	4.77		22.94	6.01		18.56	3.93	
	3 Part-time job	15.31	4.00		23.25	4.69		17.59	4.22	
	4 Other	-	-		-	-		-	-	
Final educational background	1 Vocational school	14.44	5.06	n. s.	23.07	5.61	n. s.	17.19	4.57	n. s.
	2 Junior college	13.36	4.49		21.41	5.82		17.09	4.35	
	3 University	13.13	4.15		20.27	5.40		18.13	4.77	
	4 Other	17.50	10.61		20.00	12.73		15.00	8.49	
Class in charge	1 Infant class	13.39	4.72	n. s.	21.40	5.99	n. s.	17.43	4.82	n. s.
	2 Toddler class	13.44	4.20		21.18	5.37		16.90	3.86	
	3 Free charge	15.09	4.83		22.18	5.62		18.91	3.67	
	4 Other	15.00	3.00		20.67	7.02		22.00	5.29	
Established	1 Public	13.33	4.72	n. s.	21.17	5.59	4-1* 4-2**	16.82	4.69	n. s.
	2 Social welfare service corporation	13.41	4.53		20.89	5.79		17.69	4.38	
	3 Joint-stock companies	13.28	3.70		22.25	5.96		16.66	4.79	
	4 Other	15.92	5.14		26.31	3.43		18.38	4.11	

Note: Factor I emotional exhaustion, Factor II depersonalization, Factor III Decreased sense of personal accomplishment. Gender was subjected to t-test. Other items were subjected to one-way analysis of variance followed by the Tukey method as a subsequent test. * $p < .05$, ** $p < .01$.

which revealed that the mental health status of nursery school teachers is deteriorating. The best mental health status was found in the free charge category, with a score of 17.64. By contrast, the worst mental health status was 11.71 for male nursery school teachers. Although there was a significant difference in mental health status depending on the class they were in charge of ($p = .009-.023$), there was no significant difference between the other basic attributes and J-WHO-5.

Finally, the relationship between J-RAS and the basic attributes: the maximum total score of J-RAS was 42, and the minimum was -63, with an overall mean of -3.49 (SD = 16.41). Compared with a study conducted on nurses in Japan, -6.6 (SD = 19.7) for managerial nurses and -12.4 (SD =

Table 5 Relationship between the basic attributes of nursery school teachers and J-WHO-5 and J-RAS

	J-WHO-5				J-MBI				J-RAS			
	<i>M</i>	<i>SD</i>	<i>p</i>		<i>M</i>	<i>SD</i>	<i>p</i>		<i>M</i>	<i>SD</i>	<i>p</i>	
Overall	12.82	5.28			49.01	9.61			-3.49	16.41		
Gender												
1 Male	11.71	4.25			48.57	6.80			0.50	19.65		n. s.
2 Female	12.88	5.32	n. s.		49.03	9.74	n. s.		-3.69	16.25		
Age												
1 20s	12.38	4.60			46.49	7.71			-7.86	17.13		
2 30s	12.74	5.51			48.28	10.54	3-1*		-3.01	17.36		n. s.
3 40s	13.02	5.30	n. s.		50.86	8.87	4-1*		-3.18	12.18		
4 50s and older	13.50	5.60			52.43	9.19			1.53	17.01		
Employment status												
1 Full-time employment	12.41	5.16			47.88	9.80			-3.58	16.71		
2 Part-time employment	13.00	4.89	3-1*		51.94	10.26			-3.71	16.13		n. s.
3 Part-time job	14.32	5.63			52.33	7.72			-0.09	17.14		
4 Other	-	-			-	-			-	-		
Final educational background												
1 Vocational school	12.44	5.75			51.47	9.30			-4.14	20.56		
2 Junior college	13.01	5.28			48.68	9.77			-2.57	15.39		n. s.
3 University	12.65	4.93	n. s.		48.39	8.95	n. s.		-5.79	16.05		
4 Other	11.00	11.31			50.00	25.46			13.50	13.44		
Class in charge												
1 Infant class	12.51	5.33			49.08	10.11			-4.14	20.56		
2 Toddler class	12.89	5.15	3-1**		48.52	8.69			-2.57	15.39		n. s.
3 Free charge	17.64	3.91	3-2*		51.55	8.66			-5.79	16.05		
4 Other	12.67	3.51			52.33	13.01			13.50	13.44		
Established												
1 Public	12.56	5.35			48.19	10.25			-4.36	18.66		
2 Social welfare service corporation	13.21	5.22	n. s.		48.90	9.22	n. s.		-2.71	15.50		n. s.
3 Joint-stock companies	11.84	4.95			48.94	9.48			-5.09	15.25		
Other	12.08	6.40			56.15	8.40			-3.77	15.60		

Gender was subjected to t-test. Other items were subjected to one-way analysis of variance followed by the Tukey method as a subsequent test. * $p < .05$, ** $p < .01$.

20.8) for new nurses (Suzuki et al., 2017), the assertiveness level of nursery school teachers was found to be higher than that of nurses (Table 5).

Finally, all the groups with very low J-RAS scores were in the J-WHO-5 low group. There was also a significant difference in J-WHO-5 high and low groups with low or slightly low J-RAS scores ($p < .001$) (Figure 1).

3.3 Relationship between experience in caring for children with special needs and SSIE, J-MBI, and J-WHO-5

A one-way analysis of variance was conducted to determine if there was a difference between SSIE and SSIE according to experience in caring for children with special needs. After the analysis of variance, the Tukey method was used for the multiple comparisons of equal variances, the Games-Howell method was employed for unequal variances, and significant differences were found only between those with and without experiences in caring for children with medical care needs and SSIE. For the SSIE subscale “human relations with parents and other children in the class,” there was a significant difference ($p = .010$) between the SSIE subscale “human relations with parents and other children in the class” and SSIE. For the SSIE subscale “insufficient self-expertise,” there was a significant difference between “have experience in caring childcare teachers” compared with “no experience as a caring childcare teacher” ($p = .031$) (Table 6).

Subsequently, a one-way analysis of variance was conducted to determine if there was a difference between J-BMI and experience in caring for children with special needs. As there were

Table 6 Relationship between SCIE and the childcare experiences of children requiring medical care

		SSIE	<i>M</i>	<i>SD</i>	<i>df</i>	<i>F</i>	<i>p</i>	Multiple comparison
Children requiring medical care	Factor I	1 Currently in caring	3.3	0.9	2.0	0.25	0.818	n. s.
		2 Have experience in caring	3.1	0.8				
		3 No experience in caring	3.2	0.8				
	Factor II	1 Currently in caring	3.3	0.5	2.0	3.01	0.011	1-2** 1-3*
		2 Have experience in caring	2.9	0.9				
		3 No experience in caring	3.0	0.7				
	Factor III	1 Currently in caring	3.5	1.0	2.0	3.61	0.034	2-3*
		2 Have experience in caring	3.1	0.9				
		3 No experience in caring	3.4	0.9				
	Factor IV	1 Currently in caring	3.7	0.7	2.0	1.89	0.070	n. s.
		2 Have experience in caring	3.2	1.0				
		3 No experience in caring	3.4	1.1				
	Factor V	1 Currently in caring	2.9	0.8	2.0	0.12	0.829	n. s.
		2 Have experience in caring	2.7	1.0				
		3 No experience in caring	2.8	1.1				

Note: Factor I Difficulty in dealing with children, Factor II Human relations with parents and other children in the class, Factor III Insufficient self expertise, Factor IV Burden of keeping childcare records, Factor V Insufficient support from colleagues.

After one-way analysis of variance, multiple comparison (Games-Howell) was used. * $p < .05$, ** $p < .01$.

Table 7 Relationship between J-MBI and children requiring language support due to foreign nationality

		J-BMI Factor	<i>M</i>	<i>SD</i>	<i>df</i>	<i>F</i>	<i>P</i>	Multiple comparison
Children requiring language support due to foreign nationality	I	1 Currently in caring	13.3	4.9				
		2 Have experience in caring	13.8	4.7	2.0	0.31	0.734	n. s.
		3 No experience in caring	13.3	4.4				
	II	1 Currently in caring	13.8	4.7	2.0	0.05	0.949	n. s.
		2 Have experience in caring	21.2	5.8				
		3 No experience in caring	17.6	4.7				
	III	1 Currently in caring	13.5	4.5	2.0	3.78	0.024	1-3*
		2 Have experience in caring	21.4	5.8				
		3 No experience in caring	17.4	4.5				

Note:Factor I Emotional exhaustion , Factor II Depersonalization , Factor III Decreased sense of personal accomplishment.After one-way analysis of variance, multiple comparison (Tukey) was used. * $p < .05$, ** $p < .01$.

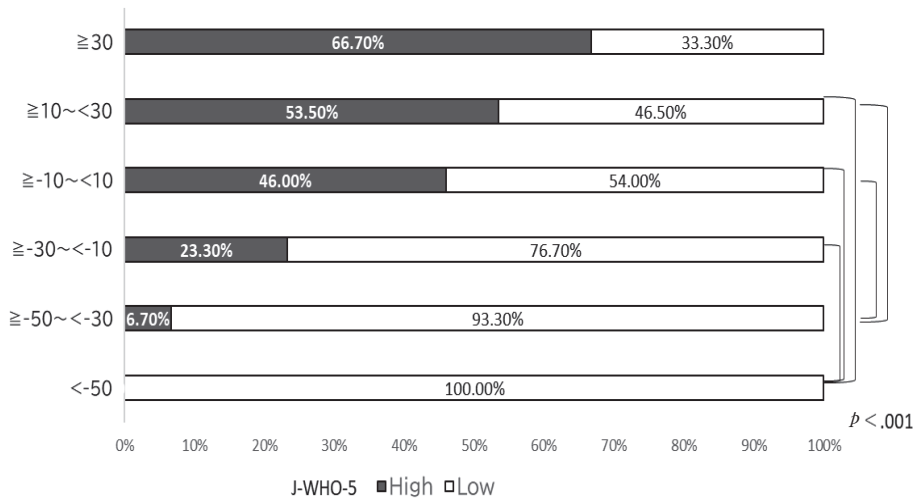


Figure 1 Distribution of J-RAS score in J-WHO-5 high and low groups

equal variances, the analysis of variance was followed by multiple comparisons (Tukey), and the results confirmed that nursery school teachers who had experience with “children requiring language support due to foreign nationality” were more likely to have “decreased sense of personal accomplishment” than their current counterparts ($p = .026$) (Table 7).

Finally, a t-test was conducted to determine if there was a difference between the 181(60.3%) children with good mental health status and the 119(39.7%) ones with poor mental health status in J-WHO-5 and experience in caring for children with special needs. Consequently, no significant differences were found in any of the items.

3.4 Examination of the model by covariance structure analysis

The SSIE, J-MBI, J-WHO-5, and J-RAS factors were used as latent variables, and the subscales of each factor were employed as observables. For J-RAS, the total score was calculated and utilized

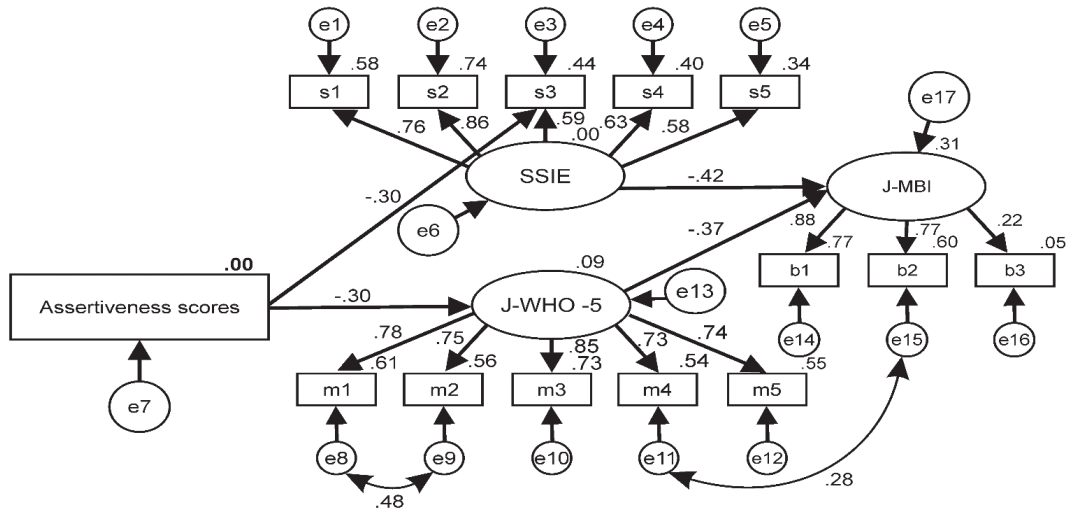


Figure 2 Model diagram of SSIE, J-MBI, J-WHO-5, and J-RAS

as an observational variable. According to previous studies, a model with a GFI of .94 or higher, an AGFI of .90 or higher, and an RMSEA of less than .01 is considered to have a good fit (Takagi and Tanaka, 2003). During the creation of the model, the corrections were made repeatedly by introducing error correlations based on correction indices. Consequently, the goodness of fit indices of the model that specified the interrelationships among the four scales showed acceptable fit values ($X^2 = 184.973$, $df = 72$, $GFI = .919$, $AGFI = .882$, $CFI = .937$, $RMSEA = .072$, and $AIC = 250.973$). Figure 2 illustrates that the path coefficients of the model demonstrated a direct effect from SSIE to J-MBI, but no path from SSIE to J-WHO-5. The J-RAS total score was significant for the SSIE subscale, insufficient self-expertise, and the direct effect to J-WHO-5.

4. Discussion

4.1 Relationship between the childcare experience of children with special needs and the SSIE, J-MBI, and J-WHO-5 of nursery school teachers

Children with special needs were categorized into seven items, and the relationship between their childcare experience and stress-related factors was clarified. The results validated that there was no significant difference between SSIE, J-MBI, and J-WHO-5 for the items other than (6) children requiring language support due to foreign nationality and (7) children requiring medical care. There was no significant difference between SSIE, J-MBI, and J-WHO-5. This result was partially directed by the results of Sahbaz and Kocer (2017), who affirmed that the presence of children with special needs did not affect the burnout level of caregivers. Conversely, the results were different from those of Kiso (2013) and Yoshikane and Hayashi (2010) and other studies conducted in Japan, which argued that burnout was affected when caring for developmentally disabled children or children with developmental tendencies (Kiso, 2013; Yoshikane and Hayashi, 2010). In Japan, it has been reported that approximately 80% of nursery schools have children with special needs (MHLW, 2019b), and it is expected that children with disabilities and developmental disabilities, even among those with special needs, are now expected to spend time together in regular classes. Since the Salamanca Declaration, there has been a change in the awareness of nursery school

teachers toward inclusive education and research on the practice in Japan (Hori, 2017). We believe that this may be because nursery school teachers have accumulated knowledge about disabilities and childcare practices that are no longer directly connected to SSIE and J-MBI.

Contrarily, there was a significant difference between the SSIE subscales “human relations with parents and other children in the class” and “insufficient self-expertise” and the experience of caring for children with medical care needs. In Japan, since Act for Eliminating Discrimination against Persons with Disabilities in 2016, the Child Welfare Law has been amended, and the number of children requiring medical care in nursery schools has increased dramatically (MHLW, 2020b). According to a case study on children with medical care who use nursery schools, the inclusion of children with medical care needs, children with disabilities, and healthy children in a class brings out diverse needs and increases the number of difficult situations for day-care practices (Ueda et al., 2020). In addition, according to a questionnaire survey of nurses at nursery school caring for children who require medical care, training for nursery school teachers is necessary because nursery school teachers are currently providing medical care together with nurses (Sorata, 2014). The burden and risk of providing safe and secure medical care in a non-medical nursery school is great, and the importance of supporting nursery school teachers in dealing with tension and accidents is required (Ueda et al., 2020). As revealed in the results of the present research, there are many nursery school teachers who have no experience with the need for medical care in nursery schools, and childcare practices and issues involving children with medical care have not been sufficiently accumulated (Matsumoto et al., 2019). Thus, the entire preschool must establish a system to prevent the burden from becoming too great only on the nursery school teachers who oversee children with medical care, to accumulate childcare practices, and to improve the skills of nursery school teachers by enhancing training. It has also been elucidated that there is a chronic shortage of nurses in nursery schools and that they do not adequately accept children who require medical care (Sorata, 2014). Deciding for the placement of not only nursery school teachers but also nurses is crucial.

Similarly, there was a significant difference between the childcare experience of children requiring language support due to foreign nationality and J-MBI’s “decreased sense of personal accomplishment.” Hayashi (2021) affirmed that in caring for children who need language support due to their foreign nationality, understanding the difficulties of communication with children and parents and their culture is necessary. This is not a problem that can be solved by simply communicating in the language, but it is expected that the inability to communicate due to differences in the mother tongue leads to a decrease in the sense of personal accomplishment of the nursery school teachers. There are some reports that translation and dissemination applications are used to supplement linguistic communication with parents, but there is a large disparity in the dispatch of interpreters among local governments, and the actual situation is that it is left to the efforts of the nursery school teachers to respond (Hayashi, 2021). In a national survey report, the following issues were also identified as challenges in caring for children with foreign nationality: “It is difficult to communicate the detailed nuances of concerns to parents” and “It is difficult to understand the specific problems and needs of children with foreign roots and their parents” (MHLW, 2019a). This suggests that it is not a problem that can be solved simply by being able to communicate in a language, but that the inability to communicate due to differences in native languages leads to a decline in the personal sense of accomplishment of nursery school teachers. In the future, utilizing foreign nursery school teachers who understand multicultural childcare, accumulating practical experience in the childcare field, and training nursery school teachers in multicultural understanding and communication will be essential.

According to Fukushima and Shimizu (2017), who examined knowledge about developmental disabilities and the factors that influence burnout among nursery school teachers, it was noted that the level of knowledge about developmental disabilities depends on whether nursery school teachers are aware of it or not. In this study, the importance of the balance between personal knowledge and social support is highlighted as stress is higher when nursery school teachers' knowledge of inclusive education is high but social support from colleagues in the workplace is low (Fukushima and Shimizu, 2017). The importance of balancing personal knowledge and social support is affirmed. In addition, Friedman-Krauss et al. (2014) asserted that teachers who reported higher levels of child behavior problems also reported higher levels of stress from their work and that this relationship was statistically significant. This relationship is statistically significant (Friedman-Krauss et al, 2014). Therefore, future research should focus on nursery school teachers who feel strongly about SSIE and additionally investigate the reasons for this and their working environment.

4.2 Related models of SSIE, J-MBI, J-WHO-5, and J-RAS

The relationship between SSIE, which is a stressor in caring for children with special needs, J-MBI and J-WHO-5, which are stress responses, and J-RAS, which is a personal factor, was analyzed by covariance structure analysis. Additionally, the relationship between SSIE, a stressor in caring for children with special needs, the stress responses, J-MBI and J-WHO-5, and the personal factor, J-RAS, was analyzed by covariance structure analysis. The results confirmed that although SSIE directly affected burnout, there was no direct path between SSIE and J-WHO-5. In addition, a direct path was found from J-RAS to the stressors insufficient self-expertise and mental health. This suggests that an increase in the assertiveness total score may reduce the stressor, increase mental health, and reduce burnout tendencies. This result supported a study by Jovanović et al. (2019), which examined the special needs of teachers working with children with developmental disabilities, and the assertiveness level is a stressor and stress response to burnout and mental health. It was found to be one of the personal factors that influence (Jovanović et al, 2019).

4.3 Mental health and assertiveness of nursery school teachers

It is worth noting that 181(60.33%) of the nursery school teachers were considered to have poor mental health, with an overall mean of 12.82 (SD = 5.28) in J-WHO-5. In Japan, there is a serious problem of early turnover and shortage of nursery school teachers (Kiso, 2018). Stress and burnout among nursery school teachers are problems in many countries (Grant et al., 2019; Lim and Kim, 2014), and efforts to reduce the burden on nursery school teachers and create a comfortable work environment are required. In addition, according to a study conducted by the OECD in 2020, nursery school teachers are more likely to feel stressed when the percentage of children with special needs exceeds 11% of the class (OECD, 2020). The results of the present study corroborated that employment condition part-time employees are more likely to suffer from emotional exhaustion on the burnout scale compared with full-time employees. These hard aspects, such as the number of children, working conditions, and environment, cannot be improved by individual nursery school teachers. Efforts to improve mental health should not be left to the efforts of individual nursery school teachers but should include a preschool-wide support system, training initiatives, working conditions, and class sizes.

I would also like to discuss the assertiveness scores of nursery school teachers. The mean assertiveness score of the nursery school teachers was -3.49 (SD: 0.97). The higher the J-RAS score, the higher was the value of mental health. Conversely, a study of nurses indicated that a J-RAS

score of -10 to $+10$ was unlikely to lead to burnout, and that too high a score can also lead to burnout (Suzuki et al., 2006). Suzuki et al. (2007), who investigated the relationship between assertiveness and burnout among new nurses, argued that a J-RAS score of 10 to $+10$ was less likely to lead to burnout (Suzuki et al., 2007). Nevertheless, it has been highlighted that nurses have very low assertiveness scores because they are required to act as a mediator between doctors and patients and because they are in a profession where medical accidents directly affect human lives (Suzuki et al., 2017). Accordingly, comparing the assertiveness scores of nurses and nursery school teachers is difficult. As there have been very few studies on assertiveness in nursery school teachers (Shiratori et al., 2021), a comparative study on mental health and burnout is an area for future investigation.

4.4 Limitations of this study and future issues

It is good to note that by using an online questionnaire, we were able to obtain responses from all 47 prefectures, covering all nursery school teachers. However, a certain amount of bias must be considered as the target audience was users registered as monitors with the research company. Since it has been pointed out that it is very difficult to accurately grasp the concerns in promoting inclusive childcare (Park et al., 2018), cross-sectional surveys have their limitations. It is important to conduct additional research, such as interviews, on the relationship between stress among nursery school teachers and caring for children with special needs and stress among nursery school teachers.

Let us talk about future issues. Assertiveness is strongly associated with self-trust, self-disclosure, etc., and is deeply related to stress in interpersonal relationships (Hiraki, 1993). According to Park et al. (2018), early childhood teachers' concerns about inclusive education are mediated by teachers' background variable "confidence," and training to improve confidence is of paramount importance (Park et al., 2018). This is the most important factor. The acquisition of assertive communication is expected to lead to self-belief and self-confidence, which, in turn, will improve the mental health of nursery school teachers. Assertion training for nursery school teachers in the future must be developed as there have been no research reports on assertion training for nursery school teachers in Japan.

Statements and declarations

Competing interests

The authors have no relevant financial or nonfinancial interests to disclose.

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