


Work Engagement of Nursery School Nurses and Its Related Factors in Japan

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Abstract

Purpose: This study aimed to clarify nursery school nurses' work engagement and their pertinent related factors. **Method:** We conducted a survey of 136 nursery school nurses using an anonymous, self-administered questionnaire. Questionnaires were distributed to 186 people at licensed daycare centers in Ibaraki Prefecture. The following conclusions were obtained by analyzing 136 participants, excluding deficiencies: A multiple regression analysis (forced entry method) was performed. **Results:** The survey results show that most of the nurses in the nursery school were female, about 90% were married, and about 70% had children. Work engagement was generally high compared with other occupations. Moreover, it was influenced by their work-self balance (positive), the meaning of their work, and the leadership of bosses. It was suggested that there is a need for an environment where nurses can maintain a work-life balance, a place where childcare health activities can be carried out, and opportunities to participate in training and liaison meetings for nursery nurses to further enhance work engagement. **Conclusion:** It was influenced by work self-balance (positive), the meaning of their work, and boss leadership. It is suggested that nursery nurses further enhance their work engagement, and they need an environment where they can maintain a work-life balance, a place where they can engage in health activities in childcare, and opportunities for training and liaison meetings.

Keywords

Nursery School, Nurse, Work Engagement

1. Introduction

Nursing staff working in nursery schools (hereinafter referred to as nursery

school nurses) are expected to be health professionals in nursery schools' "nursing" scene. At present, it is necessary to take measures to make the best use of nursery school nurses' expertise [1] [2].

It has been clarified that nursery school nurses play various roles in actual health activities in childcare (*i.e.*, general health activities that emphasize the physical and mental health and safety of children and their families, excluding childcare activities for nursery school children). These roles include growth management, infectious disease prevention measures, health education, and guidance for nursery teachers [2] [3]. Additionally, more than 80% of nursery schools only have one nursery school nurse assigned to them. Moreover, 70% or more of nursery nurses are assigned to a fixed number of nursery teachers, and many of them also provide daily childcare. Nursery school nurses in such an environment are less satisfied with the "quality of care as a nurse" [4] [5]. Furthermore, they believe that they are not fully involved in the care of abused or developmentally disabled children [6].

It is essential for nursery school nurses to have positive feelings about working and to work more vigorously, so that they may better demonstrate their expertise. Work engagement is related to the connection between work and psychology. It is defined as a positive and satisfying psychological state toward working [7]. Currently, research is being conducted on work engagement among ward nurses, caregivers, and nursery teachers. However, research on work engagement among nursery school nurses is yet to be conducted.

It is conceivable that nursery school nurses have low work engagement because the environment they are working in is not well developed. For this reason, their work satisfaction levels are low. Obtaining suggestions on the working environment by examining the factors related to the background of high work engagement is vital for nursery nurses to work more actively.

2. Methods

2.1. Aim

This study aimed to clarify nursery school nurses' work engagement and their pertinent related factors. The present study will provide suggestions to help nursery school nurses increase their work engagement and work more vigorously.

2.2. Study Design and Setting

This was a cross-sectional survey using an anonymous, self-administered questionnaire. An anonymous self-administered questionnaire survey was conducted from June 2021 to October. The participants were nurses working in licensed daycare centers in Ibaraki Prefecture.

2.3. Sampling of Participants

This study used a convenience sampling method. Nurses aged 20 years and over

and working at a licensed nursery school in Ibaraki Prefecture were included in the sample. The exclusion criteria were: 1) difficulty communicating in Japanese, 2) nursery school nurses who had difficulty in reading and writing, and 3) nursery school nurses who had been diagnosed with a mental illness and are concerned about the possible deterioration of their illness due to their participation in this study.

The sample size was calculated using the G-power software. In the multiple regression analysis, the sample size was 131 for an effect size of 0.35, power of 0.8, and significance level < 5% [8] [9]. We first obtained approval from the Institutional Review Board of the University of Tsukuba, Faculty of Medicine to conduct the study. Following this, we contacted the department in charge of the licensed daycare center in Ibaraki Prefecture and the licensed daycare center by telephone to confirm whether the nursery school nurses were working. After confirmation, we sent them an anonymous self-administered questionnaire pertinent to this study.

2.4. Instruments

In this study, we referred to the JD-R model developed by Bakker and Demerouti [10] and created by the Ministry of Health, Labor, and Welfare [11]. We investigated the individuals' attributes in the questionnaire. These attributes include gender, age, previous work history, years of service, marital status, and the presence or absence of children being raised. We investigated the nursery school's attributes, such as the number of children enrolled in the nursery school, the nursery school's operation form, and nurses' placement form. Further, we looked into their personal resources, job demands, job resources, and work engagement. Additionally, we added questions specific to nursery school nurses.

2.4.1. Personal Resources

In this study, we defined individual resources as the ability to overcome difficulties in performing work and grow even in a difficult environment. As such, we used the S-H resilience test created by Sukemune [12]. The S-H resilience test consists of 27 items: 12 items for "social support", 10 items for "self-efficacy", and 5 items for "sociality."

These were simply added to each item's grades which ranged from 1 to 5 points. Higher scores indicate higher resilience. Reliability and validity were examined by the test used in the work of Sato and Sukemune [13], and the Cronbach's α coefficients were 0.85, 0.81, and 0.77, respectively.

2.4.2. Job Demands and Job Resources

In this study, "job demands" is defined as the burden of work that could cause stress if the employee's adaptability was exceeded. Conversely, "job resources" is defined as a work environment that is a positive factor in working.

For these items, we used the simple occupational stress questionnaire (new version, recommended scale set shortened version) developed by Kawakami *et*

al. It measures the workplace's psychosocial factors, the work resources, and the workers' positive involvement. The total score of the items for each scale was divided by the number of items. This was calculated so that the score was distributed from 1 to 4 points, the state where a high score is desirable [14].

In this study, we extracted and used the scales that apply to "job demands" and "job resources" since the dependent variable was work engagement. To this end, items specific to nursery school nurses and the sufficiency of human resources were added.

2.4.3. Work Engagement

Work engagement is a positive and satisfying psychological state consisting of consciousness of "vitality," "enthusiasm," and "immersion" [7].

The work engagement of nursery school nurses in this study was evaluated using a shortened version of the Utrecht Work Engagement Scale-Japanese (UWES-J). This scale was developed by Schaufeli *et al.* [7] and translated by Shimazu *et al.* [15]. A shortened version of nine items is appropriate when this scale is translated into Japanese [15]. It consists of three subscales: 1) Vigor, 2) Dedication, and 3) Absorption. The answers to all nine items are inputted on a 7-point Likert scale.

The reliability and validity of the shortened version of the UWES-J were verified [15]. The Cronbach's α coefficients is 0.91 for "Vigor," 0.97 for "Dedication," and 0.87 for "Absorption," showing high values of 0.97. This measure can be used for free for research.

2.5. Statistical Analyses

The data obtained in this study were analyzed through statistical analysis using SPSS (version 26.0) for Windows. The significance level was set to 5%.

All continuous variables' simple tabulation results are shown for the attributes of individuals and nursery schools. Subsequently, the variable for which a significant difference was found in the t-test, or the variable in which the Pearson correlation coefficient, was $r > 0.4$. The Pearson correlation between the variables was $r < 0.5$ and was used as the independent variable. Conversely, the UWES-J score was used as the dependent variable. A multiple regression analysis (forced entry method) was performed. Variance Inflation Factor (VIF) was used to confirm multicollinearity.

2.6. Ethical Considerations

This study was conducted after obtaining approval from the research ethics review board of the Faculty of Medicine, University of Tsukuba (approval number: 1643).

It was explained to the participants beforehand that the names of research cooperation facilities and collaborators will not be disclosed. The explanatory document clarifies that the nursery school and their nurses gave voluntary consent. Moreover, it was explained that there would be no disadvantage if they did

not cooperate. The researchers' contact information was specified in the explanatory document so that they could be contacted at any time.

3. Results

Questionnaires were sent to 186 people from 139 facilities. A total of 137 returned the questionnaires, achieving the recovery rate of 73.6%. Of all the participants, one participant who had a deficiency in the description was excluded. Thus, only 136 subjects were analyzed in this study, achieving a valid response rate of 73.1%.

Table 1 describes the nursery school nurses' individual attributes. From this table, it can be seen that the 1.5% of the participants were male (two people). Moreover, 23.5% (32 people) were in their 30s, while 39% (53 people) were in their 40s. Multiple answers were possible for previous work history, but only 1.5% (two people) had no previous work history.

Regarding marriage, 89% (121 people) were married and 70.6% (96 people) were raising children. **Table 2** shows the attributes of the facilities that the participants

Table 1. Attributes of individuals.

	Characteristics	n	%
Gender	Male	2	1.5
	Female	134	98.5
Age	0 - 29	9	6.6
	30 - 39	32	23.5
	40 - 49	53	39.0
	50 - 59	32	23.5
	60 and above	10	7.4
	Previous Work History (multiple answers allowed)	General ward (adult)	95
General ward (pediatric)		33	24.4
Outpatient (adult)		36	26.7
Outpatient (pediatric)		19	14.1
Facility for the elderly		13	9.6
Home-visit nursing		8	5.9
Corporation		4	3.0
No previous work history		2	1.5
others		27	20.0
Years of Service	Less than 1 year	20	14.7
	1 - 2 years	28	20.6
	3 - 4 years	21	15.4
	5 - 9 years	44	32.4
	10 - 20 years	21	15.4
	Over 20 years	2	1.5
Marital Status	Unmarried	14	10.3
	Married	121	89.0
	N/A	1	0.7
Children	Present	96	70.6
	Absent	39	28.7
	N/A	1	0.7

were aware of. A total of 63.2% (86 people) were assigned to a one-person placement. Moreover, 56.6% (77 people) were assigned as nurses with a childcare constant. Lastly, 47.1% (64%) were working part-time.

The mean score (SD) of the S-H resilience scale (Table 3) answered by nursery school nurses was 107.3 (8.62) points for all, 97.5 (20.51) points for men, and 107.5 (8.41) points for women.

Table 4 and Table 5 describe the new simple occupational stress questionnaire

Table 2. Attributes of the nursery school.

	Characteristics	n	%	Mean (SD)	Median
Number of Children n = 130				99.95 (48.212)	95
The Operation Form	Public	30	22.1		
	Public private	7	5.1		
	Private	93	68.4		
	N/A	6	4.4		
Number of Nurse Placement	One only	86	63.2		
	2 or more	49	36.0		
	N/A	1	0.7		
Placement of Childcare Constant	constant	77	56.6		
	Not constant	54	39.7		
	N/A	5	3.7		
Employment Status	Full-time	69	50.7		
	Part-time	64	47.1		
	N/A	3	2.2		
Children		96			
		39			
		1			

Table 3. The S-H resilience test score.

		n	Mean (SD)	Median	p	
Overall	Overall	134	107.3 (8.62)	108.0		
	Male	2	97.5 (20.51)	97.5	<0.001	***
	Female	132	107.5 (8.41)	108.0		
Social support	Overall	135	51.1 (5.06)	52.0		
	Male	2	44.0 (18.39)	44.0	0.001	**
	Female	133	51.2 (4.76)	52.0		
Self-efficacy	Overall	135	37.1 (4.74)	37.0		
	Male	2	43.0 (9.90)	43.0	<0.001	***
	Female	133	37.1 (4.65)	37.0		
Sociality	Overall	136	19.1 (2.99)	20.0		
	Male	2	10.5 (7.78)	10.5	0.535	
	Female	134	19.3 (2.74)	20.0		

a. *p < 0.05, **p < 0.01, ***p < 0.001.

Table 4. The simple occupational stress questionnaire score.

	n	Mean (SD)	Median	p	
Overall	136	2.6 (0.44)	2.7	0.300	
Quantitative burden of the work	136	2.3 (0.69)	2.3	0.359	
Qualitative burden of the work	136	2.2 (0.56)	2.3	0.001	**
Physical burden	136	1.8 (0.78)	2.0	0.690	
Job Demands Interpersonal relationships at work	134	2.9 (0.63)	3.0	0.004	**
Work environment	136	3.1 (0.85)	3.0	0.035	*
Emotional burden	136	2.7 (0.75)	3.0	0.007	**
Role conflict	136	2.8 (0.87)	3.0	0.006	**
Work-self balance (negative)	136	3.2 (0.74)	3.0	0.075	
Overall	136	2.8 (0.45)	2.9	<0.001	***
Job control	135	2.5 (0.71)	2.3	<0.001	***
Work aptitude	135	3.0 (0.65)	3.0	<0.001	***
Use of skills	136	2.8 (0.82)	3.0	<0.001	***
Meaning of work	136	3.1 (0.69)	3.0	<0.001	***
Role clarity	136	3.3 (0.57)	3.0	<0.001	***
Growth opportunity	135	2.8 (0.75)	3.0	<0.001	***
Support from boss	136	2.6 (0.73)	2.7	<0.001	***
Support from colleague	136	2.9 (0.66)	3.0	<0.001	***
Family/friend support	136	3.5 (0.66)	3.7	0.132	
Economic and status compensation	136	2.6 (0.72)	3.0	0.024	*
Job Resources Respected compensation	135	2.8 (0.68)	3.0	<0.001	***
Stable compensation	135	3.4 (0.71)	4.0	0.041	*
leadership of the boss	136	2.6 (0.80)	3.0	<0.001	***
Fair attitude	136	3.0 (0.79)	3.0	<0.001	***
A workplace where you can be complimented	136	3.0 (0.86)	3.0	<0.001	***
A workplace that admits failure	136	2.9 (0.72)	3.0	<0.001	***
Trustful relationship with the management layer	134	2.6 (0.81)	3.0	0.002	**
Responding to change	134	2.6 (0.80)	3.0	<0.001	***
Respect of individuals	136	2.6 (0.77)	3.0	<0.001	***
Fair personnel evaluation	135	2.3 (0.84)	2.0	0.002	**
Correspondence of diverse workers	136	3.0 (0.89)	3.0	0.004	**
Career development	136	2.6 (0.80)	3.0	<0.001	***
Work-self balance (positive)	136	2.6 (0.79)	3.0	<0.001	***

a. *p < 0.05, **p < 0.01, ***p < 0.001.

Table 5. Way of working for nursery school nurses.

	Mean (SD)	Median	p	
Labor shortage	2.0 (0.87)	2.0	0.199	
Compatibility of childcare and nursing	2.7 (0.79)	3.0	<0.001	***
Ease of one person assigned	2.2 (0.80)	2.0	<0.001	***
Easy-to-teach environment	2.6 (0.66)	3.0	0.001	**
Enough time to do health activity	2.4 (0.85)	2.0	0.001	**
Initiatives for the entire facility	2.9 (0.68)	3.0	<0.001	***
Sufficient ability	2.6 (0.67)	3.0	<0.001	***

a. *p < 0.05, **p < 0.01, ***p < 0.001.

and the work styles of nursery school nurses, respectively. These refer to unique items. The mean score (SD) of job demand on the New Occupational Stress Simple Questionnaire Recommendation Scale was 2.6 (0.44), with a median of 2.33. The mean score (SD) for items used as job resources was 2.8 (0.45), with a median of 2.88.

The mean score (SD) of the Work Engagement Score (WES) (**Table 6**) in UWES-J was 3.4 (1.16) points, and the median was 3.3 points.

Table 7 shows the results of the multiple regression analysis using nursery school nurses' WES as the dependent variable.

Factors related to nursery school nurses are "work self-balance (positive)" ($\beta = 0.350$, $p < 0.001$), "meaning of work" ($\beta = 0.299$, $p < 0.001$), and "boss leadership" ($\beta = 0.156$, $p = 0.025$). The fit indicators for the final model were $R = 0.715$, $R^2 = 0.591$, and adjusted $R^2 = 0.496$. No multicollinearity was observed.

4. Discussion

4.1. Current Status of Nursery School Nurses

There are 118 public (26.2%) and 331 private (73.7%) nursery schools in the Ibaraki Prefecture, reflecting the current situation of the prefecture [16].

According to a survey by the [17], 7.8% of working male nurses and 82.2% of all nurses were regularly employed. However, literature shows that only 47.1% of nursery school nurses work part-time (Tsuda and Kimura 2015). From this result, it was found that a higher percentage of nursery school nurses worked as part-time nurses.

Compared to all nurses [17], the percentage of the nursery school nurses in their 20s was low. The number of nursery school nurses in their 40s was higher

Table 6. Work engagement score.

	β	p-value	VIF
Work-self balance (positive)	0.350	<0.001	1.443
Meaning of work	0.299	<0.001	1.465
Leadership of the boss	0.156	0.025	1.261
Growth opportunity	0.127	0.102	1.586
Multiple correlation coefficient (R)	0.715		
Coefficient of determination (R^2)	0.511		
Adjusted R-square (R^2)	0.496		

Table 7. Multiple linear regression analysis.

	Mean (SD)	Median
WES	3.4 (1.16)	3.3
Vigor	3.4 (1.26)	3.3
Dedication	3.7 (1.13)	3.7
Absorption	2.9 (1.34)	3.0

a. Forced Entry Method; Dependent variable: Work Engagement Score (WES).

by about 10%. Additionally, only two respondents answered that they had no prior work history. Moreover, 89% of the respondents were married. In previous literature, 92% of nursery school nurses had work experience at medical institutions. Furthermore, 67.8% said that they chose to work at a nursery school because they offered “only day shifts” [18]. From this finding, it is conceivable that many nurses who initially worked at hospitals shifted to become nursery nurses who had fewer night and weekend shifts. This was often due to their marriage and childbirth.

4.2. Personal Resources

The standard values for the S-H resilience test are discussed in this section. The score of 108 points or more for men and 110 points or more for women are considered “high.” On the other hand, 95 points to 107 points for men and 98 points to 109 points for women are “normal.” Lastly, 94 points or less for men and 97 points or less for women are “low” [12]. The mean score of the nursery school nurses’ S-H resilience test was slightly higher than the standard value.

“Achievement experience” has been cited as the most important factor in creating self-efficacy [19]. Nursery nurses must carry out health activities in childcare on a daily basis. This is different from their previous duties and is more difficult than expected [6]. There is a tendency to believe that problems can be solved by accumulating experience by completing such health activities in childcare. Women’s sociality was higher than the standard value of 18.1 points. Furthermore, nursery school nurses are viewed as highly social because they have many opportunities to interact with various people.

4.3. Job Demands

Among the job demands of the new occupational stress simple questionnaire, the one with the lowest mean score was “physical burden.” This was followed by “qualitative burden,” “quantitative burden,” and “emotional burden” of work. It has been found that most nursery school nurses are involved in childcare in the same way as nursery school teachers. Moreover, they also treat dealing with illnesses and injuries as childcare health activities [20]. It is conceivable that such a burden would be heavy because it is necessary to perform sudden health work while also doing childcare work.

The highest mean score for job demands was “work-self balance (negative).” Nurses handling preschoolers are juggling their focus on work, housework, and childcare to maintain a work-life balance. Furthermore, they are conscious of time management and the switching of their feelings [21]. It is possible that work and personal life can be balanced because many nursery nurses raise children.

As a way of working for nursery school nurses, “labor shortage” was the lowest among the original items. Since childcare work consumes the most time for each work of nursery school nurses [22], it can be said that nursery school

nurses work in many aspects to cover for the small number of staff. The current situation of labor shortages in all Japanese nursery schools is also shown in this survey.

4.4. Job Resources

Among the job resources of the new simple occupational stress questionnaire, the one with the lowest mean score was “fair personnel evaluation.” Many of nursery school nurses’ tasks, such as the prevention of infectious diseases [23], are difficult to perform when they are in daily childcare. Additionally, many nursery school nurses felt that the evaluation was not performed properly because there was no person who evaluated them from a professional point of view as a nurse. Moreover, only one person was assigned to them.

The item with the highest mean score was “family/friend support.” Support from their cohabitants and friends is a component of work-life balance for nurses working while raising children [21]. It was previously seen that work-life balance is maintained with the support of family and friends. Additionally, nursery school nurses may find it easier to schedule time with friends and family and receive support because they do not have night shifts and only a few weekend shifts.

Among the original items, the one with the highest mean score was “facility-wide efforts.” It seems that the nursery school nurses are also working on the entire facility. In fact, the nursery school receives the opinions of the nursery staff who do childcare.

4.5. Work Engagement

The mean WES for nurses working in hospitals was 2.44 points [24]. Conversely, the mean WES for all working adults was 2.9 points [25]. Female nurses who have multiple roles (e.g., marriage and parenting) have significantly higher work engagement than females who do not have multiple roles [26]. Based on factors related to work engagement in nursery nurses, nurses who were female, married, and had high child-rearing rates can all be considered to have high work engagement. Furthermore, it is important that nursery school staffs understand child rearing and that the environment is easy to use in various systems.

4.6. Factors Related to Work Engagement in Nursery Nurses

It became clear that women in the age group who are married and those who are raising children work as nursery nurses. These women place importance on balancing their personal lives and work. Therefore, this study found that the influence of work self-balance (positive) on work engagement is strong. Studies on nurses have shown that the ability to use new systems, such as shorter working hours, leads to improved work engagement [27]. Therefore, it is necessary to establish a new system and provide an environment that considers its ease of use so that nursery school nurses will have higher work engagement.

Accordingly, even work engagement increased when nursery nurses felt the meaning of their work. It has been found that the work engagement of nurses who were also mothers is enhanced by a work environment where they can demonstrate their nursing expertise [27]. In this circumstance, work engagement will increase because it is possible for them to feel that their work is meaningful if they have an opportunity to demonstrate more nursing expertise and a position as a nursery school nurse is established. Additionally, it is possible that they can use their previous work experience as a comparison to their present work, helping them find the meaning of their present work.

Regarding the leadership of their bosses, this study does not clearly define who nursery school nurses' bosses were. However, many nursery school nurses answered that their boss was either the facility manager or the chief. Based on the survey results, it is clear that childcare workers feel that they do not know where or how the results will be achieved when it comes to health-related activities [28]. Therefore, work engagement would be enhanced by having a boss who approves health-related activities in childcare. Additionally, it is possible that the boss is regarded as another nursery school nurse in a facility with multiple nursery school nurses. It is necessary for nursery school nurse heads to take the lead in activities where the results are difficult to see. For this purpose, it is necessary to acquire knowledge and skills for them to be able to demonstrate their expertise as nursery school nurses. Finally, it was found that participants referred to those who have knowledge and skills regarding health activities in childcare outside the facility as bosses. The difficulty of a single occupation has been clarified in previous literature [3]. It is important for nursery nurses who have few people to consult to acquire knowledge and skills from outside the facility. In this study, the influence of the leadership of bosses on work engagement was strongly influenced by the various backgrounds of human relations and nursery staff in nursery schools.

4.7. Suggestions for Enhancing Work Engagement for Nursery Nurses

One of the measures by which nursery nurses can enhance work engagement is to create a system that is easy to use and carry out health activities in childcare. It is necessary to secure personnel and shift to a comfortable working environment. They must also be able to work on multiple placements and placements outside childcare fixed numbers.

Support is crucial for nursery nurses to help them improve their knowledge and skills and actively engage in health activities in childcare. However, at present, nursery nurses only have a few times each year to participate in training [29]. Thus, engagement with other facilities at liaison meetings and workshops, sharing of information, and acquiring and utilizing new knowledge is vital. To aid in this, guidelines and manuals are also required [6]. Particularly, it is necessary to create and disseminate unified manuals and guidelines regarding nursery school nurses' duties.

Finally, it is pointed out that nursery nurses have different opinions with nursery center managers and colleagues. Moreover, they have differences in their perceptions of health and hygiene behavior [30]. Therefore, it is necessary to encourage nursery school nurses' cooperation with other occupations. For this purpose, it is important to show colleagues and facility managers nursery school nurses' roles and necessity and gain a better understanding of how to go about working together.

4.8. Research Limitations and Future Challenges

The present study has some limitations and challenges that may be addressed in future studies. First, it may be difficult to generalize the findings of this study to apply to other regions because this study was not conducted nationwide. Second, it was inferred that the group had a bias in the number of people. Third, although work engagement is a stable concept, it is possible that this situation was affected by COVID-19 spread during the time the survey was conducted.

In the future, it will be necessary to conduct a survey based on nursery school nurses' characteristics. Moreover, it is necessary to consider whether improving nursery school nurses' work engagement will improve the quality of childcare and nursing in nursery schools.

5. Conclusion

This study aimed to clarify the factors related to nursery school nurses' work engagement. To do this, questionnaires were distributed to 186 people at licensed daycare centers in Ibaraki Prefecture. The following conclusions were obtained by analyzing 136 participants, excluding deficiencies:

- 1) From the results, 98.5% were female, about 90% were married, and about 70% had children.
- 2) Nursery school nurses' work engagement was generally higher than that of nurses in other occupations. Moreover, it was influenced by work self-balance (positive), the meaning of their work, and boss leadership.
- 3) It is suggested that nursery nurses further enhance their work engagement, and they need an environment where they can maintain a work-life balance, a place where they can engage in health activities in childcare, and opportunities for training and liaison meetings.

Founding

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Conflicts of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential con-

flict of interest.

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