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## Relationship between nurses' perceptions of distance in-service training activities and job motivations

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### Abstract

**Background:** The use of innovative technologies in continuing education activities in nursing is important in terms of increasing the quality of care.

**Aim:** This study aimed to determine the relationship between nurses' perceptions of distance in-service training and job motivations.

**Study Design:** This study was designed as descriptive and correlational.

**Methods:** This study population consisted of nurses working in rooted education-research and state hospitals that continue distance in-service training activities. The study were conducted an 703 nurses between October 2020 and January 2021. Data were collected with the "Information Form", the "Distance In-Service Training Perception Scale" and the "Nurse Job Motivation Scale".


**Findings:** The nurses' total mean scale scores were  $3.21 \pm .97$  for the "Distance In-Service Training Perception Scale" and  $59.98 \pm 10.01$  for the "Nurse Job Motivation Scale". This showed that the nurses' perception towards distance in-service training and job motivations were positively above the average. Nurses' perception towards distance in-service training and job motivations were affected by gender, marital status, education level, type of institution, work years, type of employment, way of working, unit and choosing the profession and unit willingly. The nurses' perception towards distance in-service training weren't affected by distance or face-to-face education methods. It was determined that there was a weak positive relationship and a statistically highly significant relationship between the nurses' perception towards distance in-service training activities and job motivations.

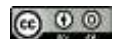
**Conclusion:** It is thought that the use of innovative teaching methods and materials in continuing training activities will contribute to the continuity of professional development and to increase job motivations.

**Keywords:** continuing training; distance in-service training; in-service training; job motivation; nursing education.

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## 1. Introduction

Worldwide developments in scientific, technological, social, and individual fields world are increasing day by day (Çiftçi, 2019, p.23). Lifelong education is an inevitable necessity to ensure this adaptation process and to enable individuals to develop their professional gains in their education life and follow their professional developments (Samancı & Ocakçı, 2017).

Institutions that want to adapt to the information age, support the educational needs and development of individuals to meet those needs and ensure continuity with in-service training activities (Çiftçi, 2019, p.94; Khan & Abdullah, 2019; Ay Türkmen & Kılıç, 2020). Examination of definitions regarding in-service training showed that the main point of the definitions is the educational activities carried out to ensure the continuity of the individual and professional development of individuals (Güngör & Tarhan, 2021). Individuals who develop and increase their competence with in-service training gain an increased motivation towards their institution and profession, through which quality service, environmental compatibility and competition are ensured (Mirrezaei et al., 2018; Ay Türkmen & Kılıç, 2020; Çiftçi, 2019, p.92). Nurses following professional developments helps them in gaining autonomy in their education and practice and improving their quality of care. Therefore, reasons such as reminding nurses of their knowledge after basic vocational training, and the need for renewal of such in the light of new developments, reveal the importance of nurses' participation in continuing education activities (Çiftçi, 2019, p.96; Savcı et al., 2021). In the report of the International Centre on Nurse Migration (ICNM) (2018), emphasis is placed on giving importance to in-service training activities and increasing job motivation to protect the workforce of nurses (ICNM, 2018). The American Nurses Credentialing Center (ANCC) reported that it is necessary for accredited hospitals to give importance to an appropriate working environment, career opportunities and in-service training for nurses to provide effective and quality care (American Association of Colleges of Nursing [AACN], 2020). In-service training has an important place in ensuring nurses' personal and professional development by following up-to-date information. However, the high number of individuals, the inability to be grouped according to qualifications, the inability to provide flexibility due to the location and working hours, the lack of clear indication of the purpose of education, the failure education to show its effect, of as a financial or career opportunity affect participation and motivation in education negatively. (Çiftçi, 2019, p.97; Ay Türkmen & Kılıç, 2020). Using technology in in-service training activities has made it possible to implement distance education models. The changes experienced directly affected nursing and nursing education, and especially with the COVID-19 pandemic, they have started to come life even more. Distance in-service training activities provide nurses with the opportunity to learn by themselves. It has brought flexibility and diversity to in-service training and provides professional development opportunities for nurses who are unable to participate in the training (Öztürk et al., 2019; Savcı et al., 2021). In the ICNM (2018) report it is suggested to determine and use the motivation tools of nurses, improve their opportunities, and increase their job motivation with evidence-based practices (ICNM, 2018).

## 2. Purpose

In this context the supportive role of job motivation is also very important in the reflection of current and innovative developments in nurses' professions to nursing practices with continuing education activities. Nurses following the developments in their profession at all stages of health care activities, them being pioneers in professional innovations, ensuring their professional development, increasing work motivation and them having independent roles is important for increasing the quality of continuing education activities, the diversification. Therefore, this study aimed to determine the relationship between nurses' perceptions of distance in-service training and job motivations. The following questions were sought to be answered in the research:

- How are nurses' perceptions of face to face and distance in-service training activities?
- What are the job motivation levels of nurses?

- Is there a relationship between nurses' perceptions of distance in-service training activities and their job motivation?
- Do nurses' perceptions of distance in-service training activities and job motivation towards make a difference between some variables?

### 3. Methods and Materials

#### 3.1 The place and time of the study

All nurses working in seventeen well-established hospitals according to their year of establishment, located in densely populated regions, continuing face-to-face and distance in-service training activities in Istanbul, Türkiye (N:7000). Participants were informed and the data were collected face-to-face through October, 2020 and January, 2021, by obtaining informed consent from the volunteers.

#### 3.2 Population and sample selection

The sample of the study consists of 703 nurses working in eight hospitals, which were calculated with 95% reliability (p), 5% power (q), +/- 3% sampling error (d) and statistical methods to represent the population on the European side of Istanbul (N:7000). Institutions to be included in the study were determined by stratified random sampling method from among the institutions that obtained permission (Erdoğan et al., 2018, p.56).

#### 3.3 Type of study

This study was designed as descriptive and correlational.

#### 3.4 Data collection

Information form: The form was created by the researchers according to the literature (Limon, 2014; Öztürk et al., 2019). The form consists of 18 questions to determine the nurses' sociodemographic (age, gender, educational status, etc.) and professional characteristics (willingly choosing the nursing, working years as a nurse, working unit etc.).

Distance in-service training perception scale (DISTPS): The DISTPS was developed by Limon (2014) to determine individuals' perceptions of face-to-face and distance in-service training activities. It is a five-point Likert-type scale consisting of 24 items and 3 sub-dimensions. The "Perception of Willingness to Participate" subscale Cronbach's Alpha (internal consistency coefficient) ( $\alpha$ ) was found as .883, the "Perception of Function" subscale  $\alpha$ : .948, the "Perception of Practice" subscale  $\alpha$ : .836. The  $\alpha$  of the whole scale was found as .954 (Limon, 2014).

Nurse job motivation scale (NJMS): The NJMS was created by Engin and Çam (2016) to determine the job motivation of nurses. It is a triple Likert-type scale, consisting of 25 items and four subscales. The scale's  $\alpha$  was found as .847. The maximum score to be obtained from the scale is 75 and the minimum is 25 (Engin & Çam 2016).

#### 3.5. Limitations of the study

The research was limited;

- who nurses was working in the sampled health institutions on the European side of Istanbul,
- data collection tools,
- health institutions that can be granted permission due to the COVID-19 pandemic.

#### 3.6. Research ethics

Data were collected face to face in accordance with COVID-19 measures between October 2020 and January 2021 after obtaining the necessary permissions from the Social Sciences Research Ethics Committee of Istanbul University Cerrahpaşa (13/05/2020-26138 date and number). Scale usage

permissions and from nurses working in institutions that carry out distance in-service training activities were obtained verbally and writing informed consents.

### 3.7. Evaluation of data

The data were entered and analyzed using frequencies, percentages, means and standard deviations with the SPSS (Statistical Package for the Social Sciences) software, version 26.0. The reliability of the scales used in the sample was calculated with the  $\alpha$  number. Saphiro Wilk test and Skewness and Kurtosis values were used to determine the distribution of scale scores, parametric Independent Groups t-test to determine whether there were significant differences, Tukey HSD forward analysis as Post Hoc forward analysis were used with One Way Analysis of Variance and non-parametric Mann Whitney U and Kruskal Wallis comparison analyzes, and Pearson Correlation test was used to determine the relationship between scale scores. Results were evaluated at a confidence interval of 95%, with a significance level of  $p < 0.05$ .

## 4. Results

### 4.1. Descriptive Characteristics

The mean age of the nurses was  $31.42 \pm 7$ , 86.5% were women, 53.5% were married, 56.8% did not have any children, and 74.3 had a Bachelor's degree. Of the nurses 51.6% worked in training and research hospitals, 38.7% in surgery clinics, 57.3% were service nurses, 54.9% were contracted nurses, and 69.8% were working in shifts. Of the nurses 71% were working in institutions, 53.3% were working in the profession for 5 years or shorter, 68.1% chose the profession willingly, and 54.3% did not chose the unit they worked in willingly. Of the nurses 64% were satisfied with their unit, and 82.5% were not a member of a professional association or organization. Of the nurses 90.8% had participated in both distance and face-to-face in-service training, and 63% were following professional developments.

### 4.2. DISTPS Total, Subscale Scores and NJMS Score

The nurses' mean DISTPS score was  $3.21 \pm .97$ , and their mean NJMS score was  $59.98 \pm 10.01$ . Of the DISTPS subscale, the lowest mean score was obtained in the "Perception of Willingness to Participate" subscale ( $2.78 \pm .86$ ), and the highest mean score in the "Perception of Function" subscale ( $3.21 \pm .90$ ) (Table 1).

**Table 1.** DISTPS total, subscale scores and NJMS score (N=703)

Scales and Subscale Scores	Minimum	Maksimum	Mean	SD	$\alpha$
Distance In-Service Training Perception Scale	1.00	5.00	3.21	.97	.967
• Perception of willingness to participate	1.00	4.93	2.78	.86	.896
• Perception of function	1.00	5.00	3.21	.90	.957
• Perception of practice	1.00	4.87	3.06	.82	.703
Nurse Job Motivation Scale	28.00	75.00	59.98	10.01	.934

Note:  $\alpha$ : Cronbach's Alpha, SD: Standard Deviation.

### 4.3. Distribution of DISTPS and NJMS Scores by Personel and Professional Characteristics

The following was determined when examining whether the nurses' DISTPS and NJMS scores differed according to personal or professional characteristics: significant differences ( $p < 0.05$ ) between subscales and both scales were found according to gender, working years in the institution, working years as a nurse, marital status, having children, ways of working, unit, in which the nurse is appointed to, task, unit, in which the nurse works, being married, types of employment, willingly choosing the profession, and being a member of a professional association. Also, although there were differences in the subscales and the total of both scales according to the type of in-service training

activity attended by the nurses, there was no significant difference ( $p>0.05$ ) in the face-to-face or distance in-service training type (Table 2).

**Table 2:** Distribution of DISTPS and NJMS scores by personel and professional characteristics (N=703)

Variables	n	DISTPS				NJMS Mean±SD
		DISTPS Mean±SD	Perception of willingness to participate Mean±SD	Perception of function Mean±SD	Perception of practice Mean±SD	
<b>Gender</b>						
Women	608	<b>3.10±.79</b>	<b>3.25±.94</b>	<b>2.82±.83</b>	3.23±.88	<b>60.44±9.56</b>
Men	95	2.84±.98	2.94±1.15	2.51±.98	3.07±.96	57.04±12.17
Test ve p score		<i>t:2.504</i> <i>p:.014*</i>	<i>t:2.557</i> <i>p:.012*</i>	<i>t:2.970</i> <i>p:.004**</i>	<i>t:1.635</i> <i>p:.102</i>	<i>t:2.600</i> <i>p:.011*</i>
<b>Marital Status</b>						
Married	376	<b>3.14±.75</b>	3.27±.92	<b>2.87±.80</b>	<b>3.27±.86</b>	<b>61.19±9.34</b>
Single	327	2.98±.89	3.14±1.03	2.67±.91	3.13±.93	58.60±10.58
Test ve p score		<i>t:2.494</i> <i>p:.013*</i>	<i>t:1.813</i> <i>p:.070</i>	<i>t:3.098</i> <i>p:.002**</i>	<i>t:1.983</i> <i>p:.048*</i>	<i>t:3.421</i> <i>p:.001**</i>
<b>Status of Having a Child</b>						
Yes	399	<b>3.15±.80</b>	3.27±.94	<b>2.91±.81</b>	<b>3.28±.92</b>	<b>62.30±9.14</b>
No	304	3.00±.84	3.16±1.00	2.68±.88	3.15±.87	58.22±10.30
Test ve p score		<i>t:2.509</i> <i>p:.012*</i>	<i>t:1.486</i> <i>p:.138</i>	<i>t:3.492</i> <i>p:.001**</i>	<i>t:1.970</i> <i>p:.049*</i>	<i>t:5.543</i> <i>p&lt;.001***</i>
<b>Educational Level</b>						
High School <sup>a</sup>	38	2.58±.97	2.64±1.09	2.33±.92	2.76±1.01	58.71±10.92
Associate Degree <sup>b</sup>	58	2.91±.86	3.01±.58	2.74±.85	2.98±1.04	60.84±9.60
Bachelor's Degree <sup>c</sup>	522	3.05±.78	3.17±.94	2.77±.81	3.21±.84	59.30±10.21
Graduate <sup>d</sup>	85	<b>3.46±.83</b>	<b>3.82±.85</b>	<b>3.04±1.00</b>	<b>3.52±.98</b>	<b>64.15±7.41</b>
Test ve p score		<i>F:12.276</i> <i>p&lt;.001***</i> <i>a&lt;c&lt;d;b&lt;d</i>	<i>F:17.837</i> <i>p&lt;.001***</i> <i>a&lt;c,d</i>	<i>F:6.353</i> <i>p&lt;.001***</i> <i>a,c&lt;d</i>	<i>F:7.986</i> <i>p&lt;.001***</i> <i>a&lt;c&lt;d</i>	<i>F:6.204</i> <i>p&lt;.001***</i> <i>a,c&lt;d</i>
<b>Follow Professional Developments</b>						
Yes	260	<b>3.31±.80</b>	<b>3.44±.95</b>	<b>3.00±.83</b>	<b>3.48±.88</b>	<b>63.86±8.04</b>
No	443	2.92±.80	3.07±.96	2.64±.84	3.05±.87	<b>57.71±10.36</b>
Test ve p score		<i>t:6.157</i> <i>p&lt;.001***</i>	<i>t:4.967</i> <i>p&lt;.001***</i>	<i>t:5.487</i> <i>p&lt;.001***</i>	<i>t:6.257</i> <i>p&lt;.001***</i>	<i>t:8.776</i> <i>p&lt;.001***</i>
<b>Type of Institution</b>						
Training and Research Hospitals	363	<b>3.10±.79</b>	<b>3.25±.94</b>	<b>2.82±.83</b>	<b>3.23±.88</b>	<b>60.44±9.56</b>
State Hospital	340	2.84±.98	2.94±1.15	2.51±.98	3.07±.96	57.04±12.17
Test ve p score		<i>t:2.504</i> <i>p:.014*</i>	<i>t:2.557</i> <i>p:.012*</i>	<i>t:2.970</i> <i>p:.004**</i>	<i>t:1.635</i> <i>p:.102</i>	<i>t:2.600</i> <i>p:.011*</i>
<b>Working Hours</b>						
Daytime <sup>a</sup>	201	<b>3.20±.81</b>	<b>3.36±.96</b>	<b>2.89±.82</b>	<b>3.36±.92</b>	<b>64.09±8.72</b>
Night <sup>b</sup>	11	2.70±.98	2.94±1.05	2.36±.89	2.79±1.11	60.64±4.78
Working in Shifts <sup>c</sup>	491	3.02±.82	3.15±.97	2.74±.87	3.15±.87	58.29±10.12
Test ve p score		<i>KW:11.181</i> <i>p:.004**</i> <i>a&gt;b,c</i>	<i>KW:9.707</i> <i>p:.008**</i> <i>a&gt;b,c</i>	<i>KW:5.817</i> <i>p:.055</i>	<i>KW:10.708</i> <i>p:.005**</i> <i>a&gt;b,c</i>	<i>KW:51.716</i> <i>p:.001***</i> <i>a&gt;b,c</i>

**Table 2:** Distribution of DISTPS and NJMS scores by personel and professional characteristics (N=703) (more)

Variables	n	DISTPS			NJMS Mean±SD	
		DISTPS Mean±SD	Perception of willingness to participate Mean±SD	Perception of function Mean±SD		Perception of practice Mean±SD
<b>Working Years in the Institution</b>						
0-5 Years <sup>a</sup>	499	3.00±.83	3.12±1.00	2.74±.86	3.00±.83	58.60±10.03
6-10 Years <sup>b</sup>	132	3.19±.84	3.36±.93	2.92±.85	3.19±.84	62.20±9.53
11-15 Years <sup>c</sup>	56	3.27±.63	3.66±.65	2.73±.85	3.27±.63	<b>65.86±7.94</b>
16-20 Years <sup>d</sup>	5	3.66±.47	<b>3.93±.64</b>	3.52±.70	3.66±.47	63.00±3.00
21 Years and Above <sup>e</sup>	11	<b>3.98±.88</b>	3.06±1.03	2.74±.79	3.14±.90	64.73±10.16
Test ve p score		<i>KW:10.929</i> <i>p: .027*</i> a<d,e	<i>KW:23.2657</i> <i>p&lt;.001***</i> a,e<d	<i>KW:8.144</i> <i>p: .086</i>	<i>KW:8.954</i> <i>p: .062</i>	<i>KW:40.691</i> <i>p&lt;.001***</i> a<c,e
<b>Working Years as a Nurse</b>						
0-5 Years <sup>a</sup>	375	3.01±.83	3.14±1.01	2.72±.87	3.17±.83	58.00±10.04
6-10 Years <sup>b</sup>	114	2.99±.78	3.05±.91	2.25±.79	3.17±.89	58.88±9.84
11-15 Years <sup>c</sup>	62	3.14±.82	3.55±.87	2.77±.97	3.09±1.03	62.71±8.66
16-20 Years <sup>d</sup>	59	<b>3.44±.81</b>	<b>3.71±.83</b>	3.06±.87	<b>3.56±.97</b>	<b>68.32±7.14</b>
21 Years and Above <sup>e</sup>	93	3.09±.82	3.13±.91	2.86±.79	3.26±.97	62.23±9.08
Test ve p score		<i>F:3.898</i> <i>p:.004**</i> a,b< d	<i>F:7.361</i> <i>p&lt;.001***</i> a,b,e<c,d	<i>F:2.267</i> <i>p:.061</i>	<i>F:2.823</i> <i>p:.024*</i> a,b,c< d	<i>F:18.194</i> <i>p&lt;.001***</i> a<c.e.b< d
<b>Willingly Choosing the Nursing</b>						
Yes	458	<b>3.37±.71</b>	<b>3.54±.84</b>	<b>3.10±.74</b>	<b>3.47±.82</b>	<b>63.99±7.45</b>
No	245	2.50±.71	2.60±.91	2.17±.72	2.72±.83	52.49±9.90
Test ve p score		<i>t:15.454</i> <i>p&lt;.001***</i>	<i>t:13.380</i> <i>p&lt;.001***</i>	<i>t:15.915</i> <i>p&lt;.001***</i>	<i>t:11.469</i> <i>p&lt;.001***</i>	<i>t:15.933</i> <i>p&lt;.001***</i>
<b>Satisfied with Their Unit</b>						
Yes	450	<b>3.23±.76</b>	<b>3.37±.89</b>	<b>2.95±.79</b>	<b>3.37±.87</b>	<b>63.54±7.78</b>
No	253	2.77±.85	2.92±1.05	2.47±.89	2.91±.87	53.66±10.42
Test ve p score		<i>t:7.223</i> <i>p&lt;.001***</i>	<i>t:5.809</i> <i>p&lt;.001***</i>	<i>t:7.262</i> <i>p&lt;.001***</i>	<i>t:6.676</i> <i>p&lt;.001***</i>	<i>t:13.152</i> <i>p&lt;.001***</i>
<b>Working Unit</b>						
Surgical Unit <sup>a</sup>	272	2.98±.80	3.16±.99	2.68±.81	3.09±.90	59.04±9.85
Internal Unit <sup>b</sup>	181	3.10±.77	3.15±.95	2.92±.83	3.21±.81	60.85±9.24
Administrative Unit <sup>c</sup>	40	<b>3.46±.86</b>	<b>3.54±.96</b>	<b>3.10±.84</b>	<b>3.73±.98</b>	<b>64.60±9.32</b>
Special Unit <sup>d</sup>						
Othere	154	3.05±.85	3.24±.94	2.67±.91	3.26±.92	58.66±11.20
Test ve p score	56	3.14±.90	3.35±1.02	2.84±.92	3.23±.91	62.09±8.92
		<i>KW:3.265</i> <i>p: .011*</i> a,d<c	<i>KW:1.827</i> <i>p:122</i>	<i>KW:4.372</i> <i>p: .002**</i> a<b,c d<c	<i>KW:4.677</i> <i>p&lt;.001***</i> a,b,d,e<c	<i>KW:4.445</i> <i>p&lt;.001***</i> a,d<c

**Table 2:** Distribution of DISTPS and NJMS scores by personel and professional characteristics (N=703) (more)

Variables	n	DISTPS				NJMS Mean±SD
		DISTPS Mean±SD	Perception of willingness to participate Mean±SD	Perception of function Mean±SD	Perception of practice Mean±SD	
<b>Task</b>						
Sevice Nurse <sup>a</sup>	403	2.96±.81	3.07±.99	2.73±.83	3.08±.87	59.15±9.79
Responsible Nurse <sup>b</sup>	40	3.28±.74	3.54±.86	2.89±.81	3.41±.92	<b>65.78±7.68</b>
Special Unit Nurse <sup>c</sup>	138	2.99±.85	3.16±.94	2.61±.91	3.20±.91	57.09±10.81
Administrative Unit Nurse <sup>d</sup>	38	3.41±.86	3.53±.94	3.06±.86	3.65±.99	64.95±9.26
Education Nurse <sup>e</sup>	43	<b>3.59±.67</b>	<b>3.86±.68</b>	<b>3.21±.75</b>	<b>3.68±.84</b>	65.74±6.68
Other <sup>f</sup>	41	3.26±.77	3.50±.89	2.93±.85	3.35±.76	61.61±9.01
Test ve p score		F:7.666 <i>p</i> <.001*** a,c<d,e	F:8.564 <i>p</i> <.001*** a<b<c	F:4.837 <i>p</i> <.001*** a<e c<d <e	F:6.725 <i>p</i> <.001*** a,c<d,e	F:11.237 <i>p</i> <.001*** a,c<b,d,e
<b>Type of Employment</b>						
Permanently Employed	317	<b>3.19±.79</b>	<b>3.36±.89</b>	<b>2.86±.84</b>	<b>3.33±.94</b>	<b>62.08±9.63</b>
Contracted	386	2.96±.83	3.09±1.02	2.71±.87	3.10±.84	58.26±10.00
Test ve p score		<i>t</i> :3.586 <i>p</i> <.001***	<i>t</i> :3.843 <i>p</i> <.001***	<i>t</i> :2.459 <i>p</i> :.014*	<i>t</i> :3.368 <i>p</i> <.001***	<i>t</i> :5.127 <i>p</i> <.001***
<b>Willingly Choosing the Working Unit</b>						
Yes	321	<b>3.31±.80</b>	<b>3.47±.92</b>	<b>2.99±.83</b>	<b>3.46±.88</b>	<b>63.26±8.44</b>
No	382	2.86±.79	2.99±.97	2.60±.84	2.99±.85	57.23±10.40
Test ve p score		<i>t</i> :7.433 <i>p</i> <.001***	<i>t</i> :6.768 <i>p</i> <.001***	<i>t</i> :6.207 <i>p</i> <.001***	<i>t</i> :7.093 <i>p</i> <.001***	<i>t</i> :8.480 <i>p</i> <.001***
<b>Being a Member of a Professional Association</b>						
Yes	123	<b>3.42±.79</b>	<b>3.56±.89</b>	<b>3.11±.83</b>	<b>3.57±.86</b>	<b>63.50±8.58</b>
No	580	2.99±.81	3.14±.98	2.71±.85	3.13±.89	59.24±10.14
Test ve p score		<i>t</i> :5.304 <i>p</i> <.001***	<i>t</i> :4.707 <i>p</i> <.001***	<i>t</i> :4.860 <i>p</i> <.001***	<i>t</i> :5.194 <i>p</i> <.001***	<i>t</i> :4.836 <i>p</i> <.001***
<b>The Type of In-Service Training Activity Attended</b>						
Face to Face <sup>a</sup>	6	3.02±.85	3.17±1.17	2.82±.32	3.08±1.25	61.50±11.33
Distance <sup>d</sup>	59	3.03±.64	3.20±.85	2.77±.78	3.12±.72	61.27±8.14
Both of Them <sup>c</sup>	638	3.07±.84	3.21±.95	2.78±.87	3.22±.91	59.85±10.16
Test ve p score		KW: .866 <i>p</i> : .649	KW: .075 <i>p</i> : .963	KW: .004 <i>p</i> : .998	KW: 1.672 <i>p</i> : .4333	KW: .493 <i>p</i> : .782

Note: DISTPS: Distance In-Service Training Perception Scale. NJMS: Nurse Job Motivation Scale. SD: Standard Deviation. n: Sample. p: Significance Vaule \**p*<.050, \*\**p*<.010, \*\*\**p*<.001. Test Score: KW; t; F.

#### 4.4. The Correlation between DISTPS and NJMS

Examination of the nurses' total mean DISTPS and subscale, and NJMS scores showed that there was a weak, positive, statistically very significant relationship between the two scales (*r*: .446, .456, .4398, .493, *p*<0.001) (Table 3).

**Table 3:** The correlation between DISTPS and NJMS (N=703)

	DISTPS
Perception of willingness to participate	.446*
Perception of function	.456*
Perception of practice	.438*
<b>NJMS</b>	<b>.493*</b>

Note: DISTPS: Distance In-Service Training Perception Scale. NJMS: Nurse Job Motivation Scale. p: Significance Value, \*p<0.001

## 5. Discussion

In the study, the relationship between nurses' perceptions of distance in-service training activities and their job motivation was examined and evaluated for some variables. Examination of the nurses' perception towards distance in-service training showed that they have an above-average positive perception. In addition, the subscale "Perception of willingness to participate" received the lowest and the subscale "Perception of function" the highest mean score. It was determined that the job motivation of the nurses was higher than the average (Table 1). In a previous study on the use of distance education method during the COVID-19 pandemic, participants stated that they viewed distance education positively because of its benefits (Liu et al., 2020). Similar studies found that distance education is preferred due to reasons such as time flexibility, space flexibility, career opportunity, and professional development (Gümüş & Fırat, 2016; Güngör & Tarhan, 2021). This result, although the nurses' perception of distance in-service training activities is positive, the low "Perception of willingness to participate" score causes a cautious attitude towards distance education, and the high "Perception of practice" and "Perception of function" scores showed that the benefits of distance education such as its equitable structure, contribution to cost and efficiency, providing space independence and fast accessibility are considered. In this respect, it was thought that it would be beneficial to create distance in-service training activities that can be combined with the face-to-face training method. It was observed that the job motivation of nurses was mostly high in similar study (Engelbrecht et al., 2019). Areas where nurses are motivated were determined as social rights, safety, education, and success, while they are least motivated in the fields of wage, working conditions, career, effective communication, transport, and tools of appreciation. It should be focused on important motivational tools that can affect the job motivation of nurses (Emory et al., 2022). Other studies conducted in this field found that more than half of the nurses were satisfied with their profession but their job satisfaction and motivation were determined as moderate or below average (Bahar et al., 2015; Özşaker et al., 2020). Although these findings were obtained during the COVID-19 pandemic, where nurses faced increasing difficulties, they carried out their work with pleasure and love, and it is thought that their motivation increased with the use of psycho-social motivational tools such as being held valuable and appreciated in the society. The reason for different results in previous studies is thought to be due to the difference in sample, time and, method.

Perceptions of nurses towards distance in-service training and their motivation was affected by gender, working year, educational level, marital status, type of institution, and type of employment (Table 2). Perceptions of nurses towards distance in-service training activities differed significantly in women in the subscales of "Perception of willingness to participate" and "Perception of function". Examination of the nurses' job motivations showed that women's job motivation scores were high. Although no significant difference between genders was found in some previous studies in the literature (Yeşilçınar et al., 2020; Gaki et al., 2013; Kundak et al., 2015), there are similar studies to ours (Özşaker et al., 2020). Evaluation of these findings together suggested that women's behaviors such as emotional commitment, commitment to work and having a sense of responsibility were effective in increasing their job motivation, and that their sensitive perspectives affected their willingness to participate in distance in-service trainings and them finding these activities to be functional. While no significant difference was found in the subscale of "Perception of willingness to



participate” according to marital status and having children, a significant difference was found in the other subscales and both mean scale scores in terms of being married and having children. Thus, it was thought that nurses who have more roles and responsibilities outside of work, such as being married and having children, have more positive perceptions of distance in-service training activities. It was determined that as the education level of nurses increased, their perceptions and job motivations towards distance in-service training activities increased, and that graduate nurses had the highest mean scores. It was seen in the literature that graduate nurses participated more in in-service training activities and that their job motivation was high. (Hakmal et al., 2012; Gaki et al., 2013; Öztürk et al., 2019). In the literature found that nurses with a bachelor's degree adopted education, career, existence of goals, delegation of authority and responsibility, participation in decisions, communication, and autonomy more than other education levels and that these affected job motivation (Hakmal et al., 2012). The study results, which are parallel with the literature, were evaluated as a pleasing and promising result for the nursing profession. It was found that nurses working in the training and research hospitals had high subscale scores, except for “Perception of practice” and high total mean scores for both scales. Since training and research hospitals are denser institutions in terms of beds, patients, and nurses, it is an expected result that most nurses are more willing to participate in distance in-service training activities. It was thought that as training and research hospitals have more personal and professional development opportunities, they create positive opinions about the functionality of distance education, and that institutions are motivating and effective in diversifying the managerial and educational positions of nurses. It was determined that nurses' perceptions of distance in-service training activities were high enough to make a difference among nurses working between 16-20 years. On the other hand, it was determined that the nurses working for 16-20 years got the highest score, while the nurses working for 0-5 years got the lowest score. Similar studies found that those with less professional working time had lower job motivation and job satisfaction (Yeşilçınar et al., 2020; Kundak et al., 2015; Xing et al., 2018). These results were interpreted that the tendency to distance in-service training may be higher in the age group of nurses who have higher professional competence, experience and a better relationship with technology, and that nurses with fewer working years may have lower job motivation due to factors such as the uncertainty of their professional career and expectations as they are new to the profession, having started the profession during the COVID-19 pandemic, and lack of motivating tools. It was determined that the perceptions towards distance in-service training activities and job motivations of permanently employed and day nurses were significantly higher. Also, other studies conducted with nurses found that daytime shifts increased their job motivation and job satisfaction (Bahar et al. 2015; Özşaker et al., 2020; Kundak et al., 2015). In a study on in-service training, it was found that the participation and willingness to participate of day workers were higher (Buğdaylı & Akyürek, 2017). In addition, another study (Öztürk et al., 2019) determined that most of the nurses were unable to participate in in-service training activities because they were during working hours, they were not informed about the training activities or they coincided with their busy working hours. These results, which are similar to the literature, suggest that the difference in personnel rights of permanently employed nurses caused their job motivation to be high, and that the perception of distance in-service training activities of daytime nurses was high due to the independence and accessibility of distance education from time and place. Considering the bio-psychosocial benefits of daytime work, especially for individuals with regular family life, were thought to have a motivating effect for nurses.

Nurses' perceptions towards distance in-service training and job motivations were also affected by type of duty, having willingly chosen the profession, having willingly chosen the unit, and monitoring professional developments (Table 2). It was found that the perceptions towards distance in-service training activities and job motivations of nurses working in the administrative unit were high. Gaki et al. (2013) and Bahar et al. (2015) attribute that the job satisfaction and job motivation of the nurses who took on administrative duties were found to be higher than the nurses working in the clinic. Another similar study determined that educator nurses participated in distance education activities at a higher rate than nurses working in the clinic (Xing et al., 2018). These results are in

agreement with the literature and it was thought that nurses working in the education and administrative units are meeting the educational needs of both themselves and other colleagues, need to rapidly adapt to updated information and innovations, perform more specific roles and responsibilities than service nurses, and are effective in terms of using career and personal development opportunities. It was determined that nurses who willingly chose the profession, were satisfied with their unit, and those who followed professional developments had high perceptions of distance in-service training activities and job motivation. In addition, it was found that they constantly followed the training activities, participated in the in-service training activities and felt more competent. Doing the profession/work lovingly, placing importance on professional development, following innovations, and choosing the professions willingly are the most effective of the job motivation tools. The results are similar to the literature (Engin & Çam, 2016; Yeşilçınar et al., 2020; Limon, 2014). It was found that nurses, who attached importance to their professional and individual development, loved their profession, and were open to innovation and development, had positive perceptions and motivations towards distance in-service training activities. This shows that institutional, national, individual, and professional development activities for nurses should be supported.

No significant difference in the subscales and both total scale scores was found in the comparisons made according to the nurses' participation in face-to-face, distance, or both in-service training activities, and it was determined that nurses' perceptions of distance in-service training activities were not affected by the teaching method used (Table 2). Lahti et al., (2012) found no significant difference between the distance education activities of nurses and face-to-face education activities and distance education was thought to be an effective and alternative method. Learning with time-space flexibility, ease of use and, rapid reach up-to-date information had an effect on the highest scores in a study conducted with nurses who obtained their graduate degree via distance education. It was found that the use of distance education method in adult education is effective due to flexibility and increases motivation (Karaman et al., 2014). This result did not create a significant difference in the sample since both methods were used in the institutions, which made us think that in cases where in-service training activities cannot be given face-to-face, it would be efficient to conduct distance education. It was determined that there was a weak positive relationship and a statistically highly significant relationship between the nurses' perception of distance in-service training activities and job motivations (Table 3). Isfahani et al., (2020) attribute a positive and significant relationship between nurses' access to and sharing of updated information while fulfilling their roles and responsibilities, their participation in in-service training activities, and their job motivation. Other studies determined that nurses use the internet and communication technology at a high and significant rate to reach professional information and that it might be useful to use distance in-service training activities (Reeves et al., 2017; Savcı et al., 2021; Güngör & Tarhan, 2021). The necessity, prevalence and usefulness of distance education came to the fore with the COVID-19 pandemic. Distance education is not a new concept in nursing but the use of continuing distance education activities is becoming widespread. Daneshkohan et al. (2015) found the following ranking of motivation tools of health workers: career development, being appreciated, and continued education. It is important to increase continued distance education activities, and to use, develop, and widespread these in the right way, considering the nurses' positive perceptions of distance in-service training activities and the linear and meaningful relationship to their job motivation, and it is thought that the job motivation of nurses will increase with the use of common job motivation tools.

## 6. Conclusions

The study results showed that nurses' perceptions of distance in-service training activities were positive, that their job motivation was high, and that an increase in their perceptions of distance in-service training activities would further increase their job motivation. In line with these results;

- To increase the willingness of nurses to participate in distance in-service training, the benefits of distance in-service training, ease of use, and necessity for following up-to-date information and innovations should be explained.
- Motivation tools should be used effectively to increase the participation and functionality of distance in-service training activities.
- Innovative teaching methods and materials should be used in continuing education activities, and the methods and materials used should be further developed.

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### Author contribution

Study desing: S. Akgöz Çolak, G. Bodur; Data collection: S. Akgöz Çolak, G. Bodur; Data analysis: S. Akgöz Çolak, G. Bodur; Study supervision: G. Bodur; Results, interpretation and drafting the manuscript: S. Akgöz Çolak, G. Bodur; Manuscript writing: S. Akgöz Çolak, G. Bodur; Critical revisions for important intellectual content, G. Bodur. All authors approved the final version for submission.

### Conflict of interest

The authors declare no conflict of interest with respect to the research, authorship, and/or publication of this article.

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