Research

Factors affecting intensive care units' nurses' job satisfaction based on Herzberg two factors theory at the National Hospital Kandy, Sri Lanka

P S Kumari[1]

International Journal of Nursing & Health Sciences, 2025; **1**: 32-48

Abstract

Nurses all over the world are working in a very stressful and draining working environment. Being a developing country with strained resources, Sri Lankan nurses' working environment too faces difficulties. This study was done to identify factors influencing ICU nurses' job satisfaction at the National Hospital, in Kandy, Sri Lanka by using Hertzberg's two-factor theory. A quantitative descriptive survey method with purposive sampling was conducted from April to November 2022. Motivational factors significantly predicted job satisfaction (β=0.261, p=0.001), and hygienic factors did not significantly predict job satisfaction (β=-0.081, p=0.186) in the ICU nurses working at the National Hospital Kandy. Furthermore, the results suggested that 7.9% of the variance in job satisfaction. The respondents were not satisfied with their salary and welfare facilities (51.8%), and higher management appreciation (43.1%). This study also agrees with Hertzberg's two-factor theory that motivational and hygiene factors influence nurses' level of job satisfaction. The sample of 174 nurses, was limited and within the COVID-19 situation and the sudden economic crisis, the social impact of the nursing profession and foreign demand for nursing vacancies increased, therefore self-motivation and nurses' attitudes changed, and healthcare facilities declined than before in Sri Lanka. Further studies with a large number of participants in many hospitals as possible is recommended.

Key words: Nurses' job satisfaction, Herzberg's two-factor theory, motivational factors, hygiene factors, intensive care units

Introduction

Job satisfaction is the individual's willingness to work effectively and efficiently to attain personal and organizational goals [1]. It is the individual feelings and process [2]. Job satisfaction is a key aspect in contributing to positive consequences that enhance the delivery of high-quality health care. Nurses constitute a majority of the health service workforce, and they stay with the patient more than any other health professional and have the most frequent direct contact with patients. For these reasons, assessing factors affecting nurses' job satisfaction is crucial for the assurance of the quality of care. Herzberg's two-factor theory is one of the most significant theories related to job satisfaction [3]. Internationally many researchers have used this theory to determine and identify the level of job satisfaction among nurses and other health-related or any other work fields [4]. In 1959, Herzberg, Mausner, and Snyderman published the two-factor model of job satisfaction and developed the motivation-hygiene theory, which was influenced by Maslow's hierarchy of needs [5]. Herzberg created a two-dimensional paradigm of factors influencing people's attitudes toward work. Initially, Herzberg and his colleagues developed a hypothesis that satisfaction and dissatisfaction with a job were affected by two different sets of consequent factors [6]. Studies on job satisfaction were conducted to decide which factor in an employee's work environment caused satisfaction or dissatisfaction, according to Herzberg (1959) the

[1] *Nursing Officer Grade 1 (Education), Nursing Training School, Kandy, Sri Lanka.*

E-mail: p.samakumari@gmail.com

presence of motivational factors can produce job satisfaction, but their absence leads to no job satisfaction. Therefore, poor hygiene factors can cause job dissatisfaction, while better hygiene factors can reduce dissatisfaction but cannot improve job satisfaction. There is a cross-relationship between motivation and hygenic factors.

By observation, nurses are not happy in the workplace and always mention their difficulties and frustration about their job, and with the COVID situation, these incidents have increased rapidly [7]. At National Hospital, Kandy, Sri Lanka, many nurses request personal leave or absent frequently from the workplace, and most of the nurses are planning to migrate. And some female nurses leave their jobs after marriage. Lesser numbers are applying for nursing, so the government has planned to reduce the levels of educational qualifications for trainee nurses. With all these problems, trade unions are demanding the government to increase salary, upgrade the educational requirement for trainee nurses to a basic degree, reduce the work-load and night shifts, improve working facilities and equipment, etc. But all these activities were neglected by the government policymakers. Therefore, all these activities have created an unpleasant environment at the workplace among nurses. Meanwhile, as critically ill patients are cared in intensive care units (ICUs) that are staffed by specialist personnel who are trained to operate the range of life-saving equipment. In other words, specialized procedures and equipment are managed by skilled healthcare practitioners who can heal and sustain life that would otherwise be threatened [8]. And ICU nurses have to make life-saving decisions requiring sound theoretical knowledge and critical thinking skills [8]. Also, intensive care unit nurses have to do a lot of work and with the COVID-19 situation their workload, level of stress, and other personal problems increased rapidly. During the economic crisis, environmental facilities were reduced. Therefore, this study helped assess factors affecting job satisfaction in ICU nurses in the National Hospital, Kandy, using Herzberg's two factors theory.

Materials and methods

Research design

This study was conducted as a descriptive cross-sectional study. The purposive sampling method was used for the survey. Herzberg's theory of motivation (Herzberg et al.,1959) was used as a conceptual framework for collecting and analyzing data. The target participants was all registered nurses employed in the ICUs of the National Hospital, Kandy, Sri Lanka. The total nursing staff of all ICUs was about 224 nurses during the study period. And all of them had been included in the research study. Therefore, the sample size was 224. According to inclusion and exclusion criteria, 190 questionnaires were handed out, only 174 completed questionnaires were returned. The response rate of the research was 91.57%.

Inclusion criteria

All nurses who are attached to ICUs were included in the study. Both male and female nurses were eligible for the study.

Exclusion criteria

Nurses with less than six months of working experience in ICUs were excluded and, on sick leave, or any other type of leave were also excluded. Managerial-level staff was not included for the study.

Instruments

Data were collected by using a pre-validated self-administered questionnaire. It consisted of structured questions covering four main areas, section A included demographic data on gender, age, marital status, working experiences as a nursing officer, current workplace experience, higher educational qualifications, and monthly income level, in section B 10 questions were about nurses' attitudes towards their work, also through these questions it was tried to analyze the level of job satisfaction among the nurses. With section C, it was expected to analyze the motivation factors of the Herzberg two-factor theory separating factors such as achievement, recognition, responsibility, nature of work, advancement, and the possibility of growth, and hygiene factors in the Herzberg two-factor theory was analyzed through section D, by using separated factors related questions as policies and administration, salary and wellfare, working conditions, supervision, and interpersonal relationship. In section A, there was a rating scale and in sections, B, C, and D, used a five-point Likert scale as strongly agree, agree, uncertain, disagree, and strongly disagree. Validity and Reliability The questionnaire was prepared by analyzing the literature [9], and with a discussion of a panel of experts. A pilot study was conducted before the main

study. The questionnaire was piloted on 20 nurses working at the surgical units in the National Hospital, Kandy, Sri Lanka to determine the reliability of the instrument. These responses were not included in the main study. Cronbach alpha value of 0.84 to 0.9 was obtained from the pilot study indicating acceptable reliability. Then all items in the instrument remained and did not change.

Reliability was the measure of the internal consistency of the constructs in the study. A construct was reliable if the Alpha (α) value was greater than .70 [10]. A reliability test was performed to check the consistency and accuracy of the measurement scales. Table 1.2 showed that Cronbach's coefficient alpha results were satisfactory (between 0.70 and 0.84), indicating questions in each construct measuring a similar concept. As suggested by Cronbach (1951) and Nunnally (1978), the reliability coefficients between 0.70-0,90 were generally found to be internally consistent.

For more validation, an instrument developed for measuring job satisfaction based on Herzberg's two-factor theory was used in the study.

Therefore, in the current study construct reliability was assessed using Cronbach's Alpha.

The results revealed that the motivation scale with 32 items (α =.845) and the hygienic scale with 27 items (α=.909) was reliable. Similarly, the total job satisfaction scale with a total of 69 items was found to be reliable with Cronbach's alpha value at α=.917. Reliability results are summarized in Table 1.

Data analysis

The data was captured in Microsoft Excel and analyzed using Statistical Package for Social Sciences (SPSS) version 25. For the analysis, frequency analysis and correlations were followed.

Ethical considerations

The study was reviewed and approved by the Ethics Committee in the National Hospital, Kandy, Sri Lanka. Further permission had been obtained from the hospital's management committee the director, chief nursing officer, consultant anasthetist, and consultant surgeon in the National Hospital, Kandy, Sri Lanka. (Ref.No; NHK/ ERC/ 08 / 2022)

Results

Data were collected from eligible nurses for the study, then 174 eligible responses were considered for the analysis. (n=174). The results were based on the research objectives and data collected as demographic data, nurses' attitudes towards nursing, motivation factors influencing nurses' job satisfaction, and hygienic factors affecting nurses' job satisfaction.

Table 1. Reliability statistics of the scale – Testing reliability with Cronbach's coefficient alpha

Constructs	*No. of Items*	*Alpha (α)*	*Scale statistics*		
			Mean	*Variance Std.*	*Deviation*
Motivation Factors Scale	32	.845	109.49	141.631	11.901
Hygienic Factors Scale	27	.909	95.14	151.175	12.295
Factors affecting nurses' job satisfaction scale	69	.917	241.79	537.020	23.174

Table 2. Socio-demographic characteristics of the participants

Variable		*Frequency (N=174)*	*Percentage (%)*
1. Age	20 to 30	43	24.7
	31 to 40	79	45.4
	41 to 50	43	24.7
	51 to 60	9	5.2
2. Gender	Male	23	13.2
	Female	151	86.8
3. Marital status	Married	101	58.0
	Single	73	42.0
4. Educational qualification	Diploma in nursing	140	80.5
	B.Sc. nursing	31	17.8
	Masters in nursing	3	1.7
5. Experience as a nursing officer	<5	65	37.4
	5 - 10	50	28.7
	11-15	20	11.5
	16-20	32	18.4
	>20	7	4.0
6. Experience in the current organization	6 months to 1 year	13	7.4
	1 year to 5 years	77	44.3
	5 years to 10 years	43	24.7
	above 10 years	41	23.6
7. Monthly income of the participants	<50,000	16	9.2
	50,000 to 100,000	133	76.4
	100,000 to 150,000	25	14.4

Nurse' attitudes towards nursing

Table 3. Frequency and percentages of nurses' attitudes towards nursing

	Strongly agree N (%)	*Agree N (%)*	*Uncertain N (%)*	*Disagree N (%)*	*Strongly disagree N (%)*
1. You like nursing	34 (19.5)	132 (75.9)	8 (4.6)	0	0
2. Nurses have high social status	32 (18.4)	91 (52.3)	29 (16.7)	22 (12.6)	0
3. You are happy when you are working	32 (18.4)	104 (59.8)	24 (13.8)	13 (7.5)	1(0.6)
4. Your work is difficult and there's always a lot to do	37 (21.3)	115 (66.1)	18 (10.3)	4 (2.3)	0
5. You work very hard	42 (24.1)	109 (62.6)	18 (10.3)	5 (2.9)	0
6. You feel pressured because of work	34 (19.5)	114 (65.5)	13 (7.5)	13 (7.5)	0
7. You feel stressed when at work	31 (17.8)	97 (55.7)	28 (16.1)	15 (8.6)	3 (1.7)
8. You feel bored when at work	8 (4.8)	32 (18.4)	55 (31.6)	64 (36.8)	15 (8.6)
9. You have enough time to finish the work you are assigned	1 (0.6)	68 (39.1)	41 (23.6)	57 (32.8)	7 (4.0)
10. You feel distracted at work	6 (3.4)	51 (29.3)	32 (18.4)	76 (43.7)	9 (5.2)

Motivation factors influencing nurses' job satisfaction

Table 4. Achievements related to job satisfaction

	Strongly agree N (%)	*Agree N (%)*	*Uncertain N (%)*	*Strongly N (%)*	*Disagree disagree N (%)*	*Total N (%)*
1. I know those who do well on the job stand a fair chance of being promoted	10 (5.7)	93 (53.4)	39 (22.4)	21 (12.1)	11 (6.3)	174 (100.0)
2. Promotions are regular	8 (4.6)	39 (22.4)	67 (38.5)	48 (27.6)	12 (6.9)	174 (100.0)
3. Only experience is mostly considered for promotion	6 (3.4)	39 (22.4)	20 (11.5)	98 (56.3)	11 (6.3)	174 (100.0)
4. Qualifications are not considered for promotion	4 (2.3)	23 (13.2)	19 (10.9)	87 (50.0)	41 (23.6)	174 (100.0)

Table 5. Recognition related to job satisfaction

	Strongly agree N (%)	*Agree N (%)*	*Uncertain N (%)*	*Disagree N (%)*	*Strongly disagree N (%)*	*Total N (%)*
1. Additional qualifications are not recognized	3 (1.7)	67 (38.5)	43 (24.7)	54 (31.0)	7 (4.0)	174 (100.0)
2. More recognitions are of senior nurses	23 (13.2)	108 (62.1)	29 (16.7)	11 (6.3)	3 (1.7)	174 (100.0)
3. Nurses' opinions are valued by medical staff	13 (7.5)	92 (52.9)	43 (24.7)	25 (14.4)	1 (0.6)	174 (100.0)
4. I have a chance for career development in the hospital	11 (6.3)	90 (51.7)	29 (16.7)	35 (20.1)	9 (5.2)	174 (100.0)
5. The higher management of the hospital appreciates my work	3 (1.7)	46 (26.4)	50 (28.7)	65 (37.4)	10 (5.7)	174 (100.0)

Table 6. Responsibility related to job satisfaction

	Strongly agree N (%)	*Agree N (%)*	*Uncertain N (%)*	*Disagree N (%)*	*Strongly disagree N (%)*	*Total N (%)*
I have opportunities to make independent decisions in my work	5 (2.9)	39 (22.4)	31 (17.8)	82 (47.1)	17 (9.8)	174 (100.0)
I have opportunities to plan my work independently	1 (0.6)	37 (21.3)	43 (24.7)	80 (46.0)	13 (7.5)	174 (100.0)
I have a chance to influence decision-making in my unit	2 (1.1)	57 (32.8)	37 (21.3)	65 (37.4)	13 (7.5)	174 (100.0)
There is professional autonomy for nurses	9 (5.2)	73 (42.0)	43 (24.7)	36 (20.7)	13 (7.5)	174 (100.0)

Table 7. Nature of work itself related to job satisfaction

	Strongly agree N (%)	*Agree N (%)*	*Uncertain N (%)*	*Disagree N (%)*	*Strongly disagree N (%)*	*Total N (%)*
My work is interesting	28 (16.1)	98 (56.3)	33 (19.0)	14 (8.0)	1 (0.6)	174 (100.0)
There is usually enough staff in my unit	6 (3.4)	66 (37.9)	35 (20.1)	66 (37.9)	1 (0.6)	174 (100.0)
I do not find my work too stressful	2 (1.1)	74 (42.5)	44 (25.3)	40 (23.0)	14 (8.0)	174 (100.0)
I am satisfied with my working hours	8 (4.6)	99 (56.9)	25 (14.4)	31 (17.8)	11 (6.3)	174 (100.0)
The workload is distributed evenly in my unit	6 (3.4)	95 (54.6)	38 (21.8)	25 (14.4)	10 (5.7)	174 (100.0)

Table 8. Advancement of growth related to job satisfaction

	Strongly agree N (%)	*Agree N (%)*	*Uncertain N (%)*	*Disagree N (%)*	*Strongly disagree N (%)*	*Total N (%)*
I appreciate my work	32 (18.4)	124 (71.3)	8 (4.6)	8 (4.6)	2 (1.1)	174 (100.0)
Combining work and personal life is successful	21(12.1)	81 (46.6)	30 (17.2)	33 (19.0)	9 (5.2)	174 (100.0)
Combining work and studying is successful	11 (6.3)	93 (53.4)	38 (21.8)	26 (14.9)	6 (3.4)	174 (100.0)
I am active in developing myself professionally	20 (11.5)	114 (65.5)	32 (18.4)	8 (4.6)	0 (0.0)	174 (100.0)
My stress tolerance is good	20 (11.5)	84 (48.3)	57 (32.8)	10 (5.7)	3 (1.7)	174 (100.0)
I feel I am a competent employee	11 (6.3)	110 (63.2)	35 (20.1)	18 (10.3)	0 (0.0)	174 (100.0)
I am willing to work in this unit in the future	17 (9.8)	110 (63.2)	35 (20.1)	11 (6.3)	1 (0.6)	174 (100.0)

Table 9. Possibility of growth related to job satisfaction

	Strongly agree N (%)	*Agree N (%)*	*Uncertain N (%)*	*Disagree N (%)*	*Strongly disagree N (%)*	*Total N (%)*
I can apply a wide range of my skills and expertise in my work	12 (6.9)	120 (69.0)	31 (17.8)	11 (6.3)	0 (0.0)	174 (100.0)
My work tasks are suitably challenging	13 (7.5)	138 (79.3)	18 (10.3)	5 (2.9)	0 (0.0)	174 (100.0)
I feel I am a competent employee	6 (3.4)	124 (71.3)	30 (17.2)	14 (8.0)	0 (0.0)	174 (100.0)
I am active in developing myself professionally	11 (6.3)	131 (75.3)	25 (14.4)	6 (3.4)	1 (0.6)	174 (100.0)
The provisions for In-service training adequately meet my needs	14 (8.0)	90 (51.7)	35 (20.1)	33 (19.0)	2 (1.1)	174 (100.0)
There is sufficient support for nurses wanting to attend courses and seminars outside the hospital	9 (5.2)	79 (45.4)	37(21.3)	48 (27.6)	1 (0.6)	174 (100.0)
Client feedback motivates me in my work	40 (23.0)	99 (56.9)	23 (13.2)	12(6.9)	0 (0.0)	174 (100.0)

Table 10. Policies and administration related to job satisfaction

	Strongly agree N (%)	*Agree N (%)*	*Uncertain N (%)*	*Disagree N (%)*	*Strongly disagree N (%)*	*Total N (%)*
1. My managers are genuinely interested in the well-being of the staff	15 (8.6)	94 (54.0)	21 (12.1)	37 (21.3)	7(4.0)	174 (100.0)
2. My managers treat the staff fairly and equally	8 (4.6)	93 (53.4)	41 (23.6)	26 (14.9)	6 (3.4)	174 (100.0)
3. My managers encourage staff to take procedures	12 (6.9)	106 (60.9)	35 (20.1)	14 (8.0)	7 (4.0)	174 (100.0)
4. My managers provide the staff part in the planning of our unit's feedback to develop work	8 (4.6)	93 (53.4)	47 (27.0)	20 (11.5)	6 (3.4)	174 (100.0)
5. My managers inform me thoroughly about issues concerning my unit	13 (7.5)	106 (60.9)	34 (19.5)	19 (10.9)	0 (0.0)	174 (100.0)
6. My managers allow the continuous professional development of the staff	8 (4.6)	100 (57.5)	38 (21.8)	18 (10.3)	10 (5.7)	174 (100.0)
7. My managers are interested in work results and outcomes	6 (3.4)	121 (69.5)	27 (15.5)	6 (3.4)	14 (8.0)	174 (100.0)

Table 11. Salary and welfare related to job satisfaction

	Strongly agree N (%)	*Agree N (%)*	*Uncertain N (%)*	*Disagree N (%)*	*Strongly disagree N (%)*	*Total N (%)*
My salary is appropriate for the demands of my work	3 (1.7)	53 (30.5)	28(16.1)	49 (28.2)	41 (23.6)	174 (100.0)
There are some reward systems and risk allowances for considering	0 (0)	72 (41.4)	9 (5.2)	67 (38.5)	26 (14.9)	174 (100.0)
There are overtime expenditures and bonuses to encourage work better	5 (2.9)	69 (39.7)	29 (16.7)	47 (27.0)	24 (13.8)	174 (100.0)

Table 12. Working condition related to job satisfaction

	Strongly agree N (%)	*Agree N (%)*	*Uncertain N (%)*	*Disagree N (%)*	*Strongly disagree N (%)*	*Total N (%)*
My unit has appropriate work facilities	2 (1.1)	115 (66.1)	17 (9.8)	37 (21.3)	3 (1.7)	174 (100.0)
My work unit is comfortable	12 (6.9)	98 (56.3)	26 (14.9)	37 (21.3)	1 (0.6)	174 (100.0)
My unit has the appropriate equipment to ensure our quality of care	6 (3.4)	108 (62.1)	19 (10.9)	40 (23.0)	1 (0.6)	174 (100.0)
My work unit is safe and secure	13 (7.5)	110 (63.2)	25 (14.4)	26 (14.9)	0 (0.0)	174 (100.0)
My patients fully appreciate the care I have given them	11 (6.3)	133 (76.4)	23 (13.2)	4 (2.3)	3 (1.7)	174 (100.0)
Medical staff on my unit generally understand and appreciate what the nursing staff does	8 (4.6)	111 (63.8)	30 (17.2)	25 (14.4)	0 (0.0)	174 (100.0)
There is good communication between patients/relatives/and nurses on our unit	9 (5.2)	137 (78.7)	16 (9.2)	10 (5.7)	2 (1.1)	174 (100.0)

Table 13. Supervision related to job satisfaction

	Strongly agree N (%)	*Agree N (%)*	*Uncertain N (%)*	*Disagree N (%)*	*Strongly disagree N (%)*	*Total N (%)*
There are regular performance appraisals from supervisors	1 (0.6)	98 (56.3)	46 (26.4)	26 (14.9)	3 (1.7)	174 (100.0)
I feel that I am supervised more closely enough	3 (1.7)	88 (50.6)	58 (33.3)	24 (13.8)	1 (0.6)	174 (100.0)
Leave is fairly handled without personal bias	1 (0.6)	94 (54.0)	62 (35.6)	13 (7.5)	4 (2.3)	174 (100.0)
Staff rostering is flexible enough to suit my needs	5 (2.9)	84 (48.3)	42 (24.1)	40 (23.0)	3 (1.7)	174 (100.0)
I have a good working relationship with my charge nurse	9 (5.2)	130 (74.7)	31 (17.8)	1 (0.6)	3 (1.7)	174 (100.0)

Table 14. Interpersonal relationship related to job satisfaction

	Strongly agree N (%)	*Agree N (%)*	*Uncertain N (%)*	*Disagree N (%)*	*Strongly disagree N (%)*	*Total N (%)*
Group cohesion is good in our unit	13 (7.5)	143 (82.2)	16 (9.2)	2 (1.1)	0 (0.0)	174 (100.0)
There is a good community spirit in my unit	12 (6.9)	144 (82.8)	17 (9.8)	1 (0.6)	0 (0.0)	174 (100.0)
I trust the expertise of my colleagues	16 (9.2)	145 (83.3)	11 (6.3)	2 (1.1)	0 (0.0)	174 (100.0)
The flow of information works well in my unit	16 (9.2)	138 (79.3)	18 (10.3)	2 (1.1)	0 (0.0)	174 (100.0)
New employees are welcomed in my unit	17 (9.8)	131 (75.3)	25 (14.4)	1 (0.6)	0 (0.0)	174 (100.0)

Table 15. Calculation of job satisfaction factors among nurses

	Mean	*Median*	*Std. Deviation*	*Minimum*	*Maximum*
Nurses' attitudes towards nursing	3.7138	3.7000	0.27016	3.10	4.60
Motivation Factors influencing nurses' job satisfaction	3.4204	3.4375	0.36990	2.59	4.41
Hygienic factors affecting nurses' job motivation	3.5219	3.5385	0.45049	2.33	4.44

Table 16. Summary of mean values of Herzberg's two factors

		Mean	*Median*	*Std. Deviation*	*Mini-mum*	*Maxi-mum*
Motivation influencing Factors Nurses' Job satisfaction	Achievement	3.3793	3.5000	0.58546	1.75	4.75
	Recognition	3.2862	3.4000	0.53473	2.00	4.40
	Responsibility	2.8060	2.7500	0.77726	1.00	5.00
	Nature of work itself	3.3241	3.4000	0.64350	1.60	5.00
	Advancement	3.6765	3.7143	0.51057	2.29	4.86
	Possibility of growth	3.7011	3.7143	0.43588	2.43	5.00
Hygienic influencing Factors Nurses' Job satisfaction	Policies and Administration	3.5041	3.7143	0.71129	1.29	5.00
	Salary and welfare	2.7414	2.6667	0.97570	1.00	4.33
	Working condition	3.6034	3.7857	0.55788	2.00	4.57
	Supervision	3.4557	3.6000	0.54859	1.40	5.00
	Interpersonal relationship	3.9667	4.0000	0.34075	2.80	5.00

Correlation analysis for two factors

Table 6 presents the correlation matrix of motivational factors and job satisfaction. It appeared that Recognition (r=0.261), Advancement (r= 0.344), and Possibility of growth (r=0.305) were statistically significantly correlated to job satisfaction at the 0.01 level. Only the Nature of work itself (r=0.169) was statistically significantly correlated to job satisfaction at the 0.05 level. As far as hygiene factors were concerned Policies and Administrations (r=0.159) were significantly and positively associated with satisfaction.

Table 17. Correlations

	Achievement	Recognition	Responsibility	Nature of work itself	Advancement	Possibility of growth	Policies & Administrations	Salary & welfare	Working conditio	Supervision	Interpersonal
Job satisfaction											
Achievement	0.028										
Recognition	.261**	.189*									
Responsibility	-0.117	0.055	.345*								
Nature of work itself	.169*	.266*	.253*	.323*							
Advancement	.344**	.215*	.412*	0.050	.358*						
Possibility of growth	.305**	.378*	.474*	.212*	.501*.	639*					
Policies & administrations	.159*	.551*	.500*	.251*	.530*	.492*	.625*				
Salary & welfare	0.025	.204*	.381*	.386*	.271*	0.077	.274*	.511*			
Working condition	0.013	.223*	.407*`	.176*	.406*	.249*	.430*	.545*	.329*		
Supervision	0.113	.171*	.422*	.269*	.235*	.178*	.337*	.435*	.408*	.567*	
Interpersonal relationships	0.088	0.142	.395*	0.087	0.025	.382*	.412*	.303*	0.059	.446*	.324*

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Regression analysis for two factors

Regression analysis was conducted to determine the relationship between Herzberg's two-factor and job satisfaction among the ICU nurses working in the National Hospital Kandy. To assess whether the regression suffers from the problem of multicollinearity, the variance inflation factor (VIF) was calculated. As indicated in Table 7. All VIF values were less than 5, indicating there was no multicollinearity problem in the model.

Table 18. Coefficients for two factors

Model	*Unstandardized Coefficients*		*Standardized Coefficients*		*Collinearity*	*Statistics*
	β	*Std. Error*	*β*	*Sig.*	*Tolerance*	*VIF*
Constant	3.107	.188		16.495	.000	
Motivational factors	.261	.075	.358	3.503	.001 .517	1.934
Hygienic factors	-.081	.061	-.136	-1.329	.186 .517	1.934

[a.] *Dependent Variable: Job satisfaction*

Multiple linear regression was used to test if Herzberg's motivational factors and hygiene factors significantly predicted job satisfaction in the ICU nurses working in the National Hospital Kandy. The fitted regression model was Job satisfaction = 3.107+0.261 *(Motivational factors) – 0.081* (Hygienic factors).

Table 19. Model summary of Two Factors Theory

R	*R Square*	*Std. The error in* the Estimate	*Durbin-Watson*	*F*	*Sig.*
.281[a]	.079	1.041	7.316	.001[b]	.26081

[a.] *Predictors: (Constant), Motivational factors, Hygienic factors*
[b.] *Dependent Variable: Job satisfaction*

Further analysis was conducted to determine the relationship between each variable in Herzberg's two factors separately and job satisfaction in the ICU nurses working in the National Hospital Kandy. Again, to assess whether the regression suffers from the problem of multicollinearity, the variance inflation factor (VIF) was calculated. As indicated in Table 8, all VIF values are less than 5, indicating there is no multicollinearity problem in the model. The results suggested that Herzberg's motivational and hygiene factors could explain 24% of the variance in job satisfaction among ICU nurses. The F-ratio of 11,162 ($p<0.00$) indicated that the regression model of job satisfaction on the variables assessed was statistically significant. The results also revealed that only two (Responsibility and Recognition) of the six motivational variables and one of the five hygiene factors (working condition) were found to be significant ($p<0.05$) in the current study context. The analysis demonstrated that the main motivational variable of job satisfaction was Responsibility, indicating that the ICU nurses working in the National Hospital Kandy value more on responsibility. However, the beta value for Responsibility ($\beta=-0.276$, $p=0.001$) is negative, interpreting that job satisfaction will increase when responsibility decreases. Further recognition was the second main factor, followed by working conditions, and the possibility of growth. Similarly, the positive beta value for Recognition ($\beta=0.257$, $p=0.005$) interprets a positive significance between the variables. When recognition increases, job satisfaction will also increase. Therefore, it is sufficiently evident to conclude that Motivation factors are more effective than hygienic factors in motivating ICU nurses working at the National Hospital Kandy.

Table 20. Coefficients with all factors

Model	*Unstandardized Coefficients*		*Standardized Coefficients*			*Correlations*			*Collinearity Statisticsts*	
	β	*Std. Error*	*β*	*Sig.*		*Zero-*	*Partial*	*Part*	*Tolerance*	*VIF*
(Constant)	3.112	.260		11.958	.000					
Achievement	-.043	.039	-.093	-1.096	.275	.028	-.086	-.075	.653	1.532
Recognition	.130	046	.257**	2.828	.005**	.261	.217	.194	.566	1.766
Responsibility	-.096	.028	-.276**	-3.425	.001**	-.117	-.260	-.234	.722	1.385
Nature of work itself	.062	.039	.149	1.587	.114	.169	.124	.109	.533	1.876
Advancement	.088	.052	.166	1.684	.094	.344	.131	.115	.484	2.066
Possibility of growth	.128	.067	.207	1.910	.058	.305	.148	.131	.398	2.510
Policies and administrations	-.019	.048	-.050	-.396	.693	.159	-.031	-.027	.297	3.370
Salary and welfare	-.002	.025	-.006	-.071	.943	.025	-.006	-.005	.584	1.714
Working condition	-.115	.049	-.238*	-2.372	.019*	.013	-.183	-.162	.466	2.147
Supervision	.067	.044	.136	1.521	.130	.113	.119	.104	.589	1.699
Interpersonal relationships	-.041	.071	-.051	-.577	.565	.088	-.045	-.039	.591	1.692
Supervision	.067	.044	.136	1.521	.130	.113	.119	.104	.589	1.699
Interpersonal relationships	-.041	.071	-.051	-.577	.565	.088	-.045	-.039	.591	1.692

[a] *Dependent Variable: Job satisfaction*
Note: * *significant at the 0.05 level*: ** *significant at the 0.01 level*

Table 21. Regression analysis (Dependent variable: job satisfaction)

Model Summary

Model	*R*	*Square*	*Adjusted R Square*	*Std. The error in the Estimate*	*Change Statistics R*				
					R Square Change	*F Change*	*df1*	*df2*	*Sig.*
1	.492[a]	.242	.190	.24312	.242	4.694	11	162	.000

[a] *Predictors: (Constant): Achievement, Recognition, Responsibility, Nature of work itself. Advancement, Possibility of growth, Policies and administrations, Salary and welfare, Working conditions, Supervision, Interpersonal Relationships*

[b] *Dependent Variable: Job satisfaction*

Table 22. Hypothesis results

Hypothesis	*Regression weights*	*β*	*t*	*P value*	*Regression*
H1	MF ⟶ JS	.261	3.503	.001*	Supported
H2	HF ⟶ JS	.081	-1.329	.186	Reected
R	.79				
F (2,171)	7.316				

*Note: *p<0.05, MF: Motivational factors, HF: hygienic factors JS: job satisfaction)*

Discussion

The study pursued to investigate the association between factors described in Herzberg's two-factor theory and the current level of job satisfaction among the ICU nurses working in the National Hospital Kandy. The following hypothesis was proposed as 'There is a significant impact of Herzberg's motivational factors on the current level of job satisfaction' (H1), and 'There is a significant impact of Herzberg's hygienic factors on the current level of job satisfaction' (H2) among the ICU nurses working in the National Hospital Kandy. The dependent variable (Job satisfaction) was regressed on predicting variables of Herzberg's motivational factors and hygienic factors. The independent variable significantly predicted job satisfaction, F (2,171) =7.316, p<.001, which indicated that the two factors under study had a significant impact on job satisfaction. Moreover, the R^2 = .079 depicts that the model explains 7.9% of the variance in job satisfaction. Additionally, coefficients were further assessed to ascertain the influence of each of the factors on the criterion variable (job satisfaction). H1 evaluated whether Herzberg's motivational factors significantly and positively affected the current level of job satisfaction among the ICU nurses working in the National Hospital Kandy. The results revealed that Herzberg's motivational factors have a significant and positive impact on the current level of job satisfaction (β=.261, t=3.503, p=0.001). Therefore, H1 was supported. H2 evaluates whether Herzberg's hygienic factors had a significantly positive effect on the current level of job satisfaction among the ICU nurses working in the National Hospital Kandy. The results revealed that Herzberg's hygienic factors do not have a significant or positive impact on the current level of job satisfaction (β=-0.081, t=-1.329, p=0.186). Consequently, H2 was rejected.

Demographic characteristics of the study participants

Table 1.1 shows the profile of the respondents. The age range of the participants was from 20 to 60 years. Most of the respondents were aged 31-40 years (45.4%, n=79), followed by those aged 20-30 years and aged 40-50 years equally (24.7%, n=43), and aged 50-60 years were the least. (5.2%, n=9). Among the respondents 86.8% (n=151) were females and 13.2% (n=23) were males. In terms of the number of years of working experience, most of the respondents were between 0-5 years (37.4%, n=65): followed by 5-10 years (28.7%, n=50), and 10-15 years (11.5%, n=20), 15-20 years (18.4%, n=18.4) and above 20 years of experience is (7%, n=7) respectively. Thirty of the participants (37.4%, n=65) had less than 5 years of experience as a Nursing Officer. A major part of the respondents had a diploma in nursing as their professional qualification (80.5%, n=140). 17.8% (n=31) were bachelor of science degree holders and 1.7% (n=3) of all of them had a master's in nursing. 58% of the respondents (n=101) were presently married. The better part of the study population (44.3%, n=77) had more than 1 year but less than 5 years of tenure as a nurse in the current organization. The percentage of respondents with more than 5 years but less than 10 years of tenure in the current organization was 24.7% (n=43). Most of the research participants (76.4%, n=133) had Rs.50,000/= to 100,000/= monthly income.

Nurses' attitudes towards nursing

According to Armstrony (2006) positive and favorable attitudes toward work indicate job satisfaction, and also negative and unfavorable attitudes indicate job dissatisfaction, there are some positive and negative attitudes toward job satisfaction. It is similar to the findings of the research by most of the nurses who

like nursing (95.4%) and stated that they have high social status (70.7%). They are working with happiness (78.2%). Their work is difficult and has to do a lot of work (87.3%) also work is very tough and feels pressure (88.7%, 85%). Feel stress when at work 73.5% but they are not bored at work 55.4% and have enough time to finish work – agree 39.7%, disagree 36.8%, uncertain 23.6% only 32.7% feel distracted at work. However, their work is difficult, and have to do a lot (87.3%), and feel stressed (73.5%) but only feel distracted at work 32.7%. It is evident that the majority of nurses have negative attitudes due to stressful situations. According to the study of Al-Ahmadi, (2009) [11]. Similarly, nurses have investigated factors influencing job satisfaction and showed that stress has no significant relationship with job satisfaction and job performance. Also, this study shows that in stressful situations they work with less distraction (32-7%) and a higher number of work likely (95.4%).

Influence of motivational factors on job satisfaction

According to Hertzberg's two-factor theory, this study also has a relationship between motivational factors and job satisfaction. It appeared that Recognition (r=0.261), Advancement (r=0.344), and Possibility of growth (r=0.305) were statistically significantly correlated to job satisfaction at the 0.01 level. Only the Nature of work itself (r=0.169) was statistically significantly correlated to job satisfaction at the 0.05 level.

In the study there was no regular promotion system (27%), only experience was considered for promotion (62.6%), and qualifications were not considered (73.6%) but had a fair chance of promotion (59.1%). These findings indicated that nurses had a lack of satisfaction with the regularity of the promotion and, to a lesser extent, the importance of qualifications. According to Purchit B., et. al, (2016), achievement-related promotion was the most important motivational factor [12]. Similarly, in health workers' motivation, promotion was also very important, as discovered by Monika E. von Bonsdorf, (2011) [13]. Due to this situation, Zinnen V, et. al. (2012) concluded that the lack of promotion and mishandling of the promotion system were considered demotivating factors among nurses and also other workers. Therefore, this study proved that conclusion [14].

There is a positive beta value for Recognition (β=0.257, p=0.005) interprets a positive significance between the variables. When Recognition increases, job satisfaction will also increase. Campbell et. al (2004) suggested that nurses needed more recognition to satisfy their need to respect others which eventually increases self-esteem. There was good recognition for the senior nurse (75.3%) and valued the nurses' opinions of medical staff (60.4%) also had a chance of career development at the hospital (58%), but only 28.1% agreed with upper management appreciation, that is a weak point in management [15].

According to motivational factors, Responsibility has a negative beta value (β=-0.276, p=0.001) interpreting that job satisfaction will increase when responsibility decreases. It is similiar to Hertzberg theory [6]. But, with the study done by May A. A, (2008) explained that nurses feel motivated when they have Responsibility. Also, in the study only 25.5% of nurses were satisfied 56.9% were not satisfied with the opportunities to make independent decisions in work and 53.5% were not satisfied with planning their work independently [16]. In the study conducted in Iran, Akbar J (2016) concluded that decision making is an important motivating factor in the healthcare organization. In this study, they were not satisfied with decision-making which reduced their job satisfaction by presenting a negative beta value [17].

Perreira T A (2016) mentioned that providing autonomy to the nurse has been getting higher levels of motivation. This study presented details about professional autonomy as 47.2% were satisfied 28.% were not satisfied also 24.7% had no idea [18]. Therefore, statistically, they were slightly at a satisfactory level. The nature of work itself which belonged to motivational factors, was statistically significantly correlated to job satisfaction at the 0.05 level (r=0.169). Due to that reason their work was interesting (72.4%) and 41.1% agreed with that staff also 31% were stressed about their work. 61.5% were satisfied with their working hours and satisfied with workload distribution (58%).

According to motivational factor Advancement, nurses appreciate their own work 87.7%. 58.7% had combined work and personal life successfully, also 59.7% had successful work and study combination. They had a good stress tolerance level of 59.8%, also 77% were active in developing their profession. Most nurses had felt competent about their job 69.5% and were willing to stay in their unit in the future 73%. As in Advancement, the Possibility of growth also had in good satisfactory level. They were able to apply their

skills and experience in their work 75.9% and had challenging work tasks 86.8 % and they felt confident 74.7% and active in developing their own profession 81.6% also were satisfied with Inservice training 59.7% and 50.6% for outside supportive program. They had good client feedback 79.9%. Advancement (r= 0.344) and possibility of growth (r=0.305) were statistically significantly correlated to job satisfaction at the 0.01 level and also were significant motivators.

Influence of hygienic factors on job satisfaction

With the hygiene factor, the majority of the nurses did not agree that their salary was appropriate for the demands of work (51.8%). Yin and Yang (2002) mentioned that nurses who were well paid in terms of salary and welfare were satisfied [19]. And also, Lu H, et.al (2005) said that salary increment was considered the main aspect which increases job satisfaction [20]. According to the study results, they did not agree with a salary which means they were dissatisfied with the salary. The results revealed that Herzberg's hygienic factors do not have a significant or positive impact on the current level of job satisfaction (β= -0.081, t=-1.329, p=0.186). Therefore, there was no significant impact of Herzberg's hygienic factors on the current level of job satisfaction among the ICU nurses working in the National Hospital Kandy, Sri Lanka.

The overall regression was statistically significant (R^2 =0.079, F (2,171) =7.32, p=0.001). It was found that Motivational factors altogether significantly predicted job satisfaction in the ICU nurses working in the National Hospital Kandy (β=0.261, p=0.001). and hygienic factors altogether did not significantly predict job satisfaction in the ICU nurses working in the National Hospital Kandy (β=-0.081, p=0.186). Furthermore, the results suggested that 7.9% of the variance in job satisfaction in the ICU nurses working in the National Hospital Kandy could be explained by Herzberg's motivational and hygiene factors when taken as a whole.

Limitations of the study

The sample size was limited as the study targeted only ICU nurses' job satisfaction. Therefore, the findings of the study are not able to represent the population of nurses working in the National Hospital Kandy Sri Lanka. During the COVID-19 situation, there were difficulties in data collection as more nurses got medical and personal leave on and off. The busy schedule of the nursing staff was another factor that affected data collection.

Conclusion

Motivational factors significantly predicted job satisfaction (β=0.261, p=0.001). and hygienic factors altogether did not significantly predict job satisfaction (β=-0.081, p=0.186) in the ICU nurses working in the National Hospital Kandy. Furthermore, the results suggested that 7.9% of the variance in job satisfaction in the ICU nurses working in the National Hospital Kandy could be explained by Herzberg's motivational and hygiene factors when taken as a whole. According to all these results nurses valued motivational factors as compared to hygiene factors, therefore this study also ties in with Herzberg's theory which said motivation factors highly led to job satisfaction compared to hygiene factors with dissatisfaction, Herzberg. F, (1987). According to this result, administrators can focus on motivation factors then nurses intrinsically promoting and recognizing them, and also on salary increments needed as necessary to improve job satisfaction. This study was done at the beginning of the economic crisis but presently there is a low level of hygiene factors, therefore these results may change in the future.

References

1. Mbindyo PM, Blaauw D, Gilson L, English M. Developing a Tool to Measure Health Worker Motivation in District Hospitals in Kenya. *Human Resources for Health.* 2009; **7**: 40-10.
2. Franco S, Bennett R, Kanfer. Health sector reform and public sector health worker motivation: A conceptual framework. *Social Science and Medicine* 2002; **54**(8): 1255-66.
3. Herzberg F. One more time: How do you motivate employees? *Harvard Business Review* 2003; **81**(1): 86.
4. Rathavoot Ruthankoon, Stephen Olu Ogunlana, "Testing Herzberg's two? factor theory in the Thai construction industry". *Engineering, Construction, and Architectural Management* 2003; **10**(5): 333-41. DOI: 10.1108/09699980310502946
5. Jones TL. (2011). Effects of motivating and hygiene factors on job satisfaction among school nurses. Ph.D. thesis, Walden University, Minneapolis, MN.
6. Herzberg F, Mausner, B, Snydermann B. (1959). The motivation to work. New York: Wiley. 8 Herzberg, F. (1966). Work and the nature of man. New York: World Publishing.

7. Bartzik M, Aust F, Peifer C. Negative effects of the COVID-19 pandemic on nurses can be buffered by a sense of humor and appreciation. *BMC Nurs.* 2001; **20**: 257. https://doi.org/10.1186/s12912-021-00770-5

8. Morton D, Bowers C, Wessels L, Koen A, Obias J. Job satisfaction of registered nurses in a private critical care unit in the Eastern Cape: A pilot study, Health SA Gesondheid 2020; **25**(0): a1345. https://doi.org/10.4102/hsag.v25i0.1345

9. Negussie BB, Oliksa GB. Factors influence nurses' job motivation at governmental health institutions of Jimma Town, South-west Ethiopia. *International Journal of Africa Nursing Sciences* 2020; **13**: 100253.

10. Nawi FAM, Tambi AMA, Samat MF, Mustapha WMW. A Review on The Internal Consistency of a Scale: The Empirical Example of The Influence of Human Capital Investment on Malcom Baldridge Quality Principles in TVET Institutions. *Asian People Journal* 2020; **3**(1): 19-29.

11. Al-Ahmadi, H. (2009). Factors affecting the performance of hospital nurses in Riyadh Region, Saudi Arabia. International Journal of health care quality assurance

12. Purohit B, Maneskar A, Saxena D. Developing a tool to assess motivation among health service providers working with public health system in India. *Hum Resour Health* 2016; https://doi.org/10.1186/s12960-016-0111-1

13. Monika E. von Bonsdorff. Age-related differences in reward preferences, *The International Journal of Human Resource Management* 2011; **22**(6): 1262-76. DOI: 10.1080/09585192.2011.559098

14. Zinnen V, Paul E, Mwisongo A, Nyato D, Robert A, (2012). Motivation of human resources for health: a case study at the rural district level in Tanzania https://doi.org/10.1002/hpm.2117

15. Campbell SL, Fowles ER, Weber BJ. Organizational Structure and Job Satisfaction in Public Health Nursing. *Public Health Nurs.* 2004; **2**: 564-71.

16. May AA. (2008) A study of nurse practitioner job satisfaction in Florida. Unpublished nurse's thesis. Fla State Univ Coll Nurs.

17. Akbari J. The Study of Motivating Factors in the Nursing Staff of Shahid Ansari Hospital of Rudsar. *International Journal of Humanities and Social Sciences* 2016; **1**: 1589-97.

18. Perreira TA, Innis J, Berta WB. Work motivation in health care: a scoping literature review. *International Journal of Evidence-Based Healthcare* 2016; **14**: 175-82.

19. Yin JCT, Yang KPA. Nursing Turnover in Taiwan: A Meta-Analysis of Related Factors. *International Journal of Nursing Studies* 2002; **39**: 573-81. https://doi.org/10.1016/S0020-7489(01)00018-9

20. Lu H, While K, Bariball K. Job satisfaction among nurses: a literature review. *Int J Nurs Stud.* 2005; **42**: 211-27. doi: 10.1016/j.ijnurstu.2004.09.003