

The Relationship between Head Nurses' Inclusive Leadership and Nurses' Work Engagement

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Abstract

Background: Today's health care organization face diversity of work place , which is a key challenge for leaders to enhance nurses' work engagement ; satisfy their basic needs for belongingness and uniqueness ; and encourage them to be more engaged in work. As well it creates a healthy work environment to support engagement. **Design:** A descriptive, correlational research design was utilized to conduct this study. **Setting:** The study was carried out in all in-patient units (medical and surgical) and ICUs at Itay El Baroud General Hospital. **Subjects:** Two groups of subjects were included; (a) All head nurses and their assistants (n=32), (b) Nurses were randomly selected (n=300). **Tools:** Two tools were used for data collection; inclusive leadership questionnaire and job engagement questionnaire. **Results:** There was positive highly statistical significant correlation between total head nurses' inclusive leadership and nurses' work engagement. **Conclusion:** There was positive highly statistical significant correlation between total head nurses' inclusive leadership and its dimensions and there was positive highly statistical significant correlation between nurses' work engagement and its dimensions. **Recommendations:** Introduce inclusive leadership style to nursing curriculum as the new style that suit the current work environment needs, conduct protocol between Faculty of Nursing Damanhour University and hospitals at El-Beheira Governorate to conduct workshops for nursing administrators to prepare them with the required knowledge and competencies to develop inclusive leadership abilities, implement mentorship program where more experienced nurses act as models and mentors to the new nurses in the profession to empower and motivate them to be engaged in their work, head nurses attend training programs, conferences and seminars about inclusive leadership styles, head nurses build belonging and authenticity in nursing staff by providing them with more authorities and responsibilities through applying delegation system, to encourage them to act in constructive and flexible manner and become role model for them and nurses attain and maintain positive workplace climate through working cooperatively and preserving team spirit.

Keywords: Health care organization, Inclusive leadership, Job engagement, Head nurses, Nurses.

Introduction

Today's in dynamic environment, the rapid growth of work force diversity among leaders and global working societies brings both opportunities and obstacles to leadership praxis (Dubrin,2022). Furthermore, motivating nurses' work engagement has emerged as one of the most significant drivers of high performance and achievement; and it became crucial in gaining a sustainable competitive advantage (Aslan, 2021). Leadership skills and styles affect the level of nurses' work engagement (Lee, 2019). The leaders' ability to lead a diverse group of people while demonstrating respect for each individual's unique characteristics without bias is the core value of Inclusive Leadership (IL) (Fang, 2019).

IL identified as: " an approach where all voices are heard, it means being curious and aware of differences at the same time; and it includes establishing high levels of trust, articulating a clear purpose and exploring different perspectives to make better decisions" (Salman and Zoromba 2022). IL can foster a trusting climate and individuals' engagement. Moreover, organizations that help in promoting individuals' work engagement can expect to derive significant benefits of high trust workplace that characterized by good working relationships and high individuals' performance (Goswami ,2018).

Inclusive leadership has eight dimensions, namely: (1) fair treatment, which is unbiased and transparent organizational practices and

equitable access to resources; (2) openness to difference, where respect for the diversity of all team members and recognition that others have different backgrounds, experiences and beliefs; (3) connection, where members are accepted by and connected to others whom they can rely on for support; (4) unique perspectives and expertise, where members share the belief that there are multiple ways of achieving the same objective and see the importance of seeking and leveraging diverse perspectives to accomplish goals; (5) shared understanding in communication, which is characterized by a shared expectation of what needs to be communicated, to whom when, and how to promote understanding; (6) belonging– group affection, it is a perceived positive valence that bond between an individual and a group; (7) authenticity, which is the extent to which group members perceive that they are allowed by the group to remain true to themselves; and finally, (8) leadership attributes, which characterize the actions of inclusive leaders, when these attributes are acted upon inclusive leaders create various impact on followers (Cohen, 2022).

Work Engagement (WE) is defined as: " a positive work-related state where nurses are fully connected with their job and is characterized by dedication, absorption and vigor. Dedication is defined as being strongly involved in ones' work; absorption is characterized by being fully concentrated and happily engrossed in work; and vigor is defined as high level of energy and mental resilience while working" (Mohamed, 2023). It has crucial role for organizational achievement measured in terms of monetary returns, productivity, and patients' satisfaction and enhancing nurses' capabilities, such as: taking initiative and being proactive.

WE has three dimensions, namely: (1) physical engagement, which reflects the effort and energy that individuals' invest in the performance of their job; (2) cognitive engagement that reflects the investment of one's cognitive resources through attentiveness, concentration and absorption during role performance; and lastly, (3) emotional engagement, which includes the expression of excitement, interest and enthusiasm in one's job role (Rich, 2010).

Significance of the study

Inclusive leadership seeks the generic goals of providing opportunities for nurses to develop, mentorship and role modeling with the aim of allowing fair treatment for all to take organizational responsibility and achieve their goals to engage and promote nurses perception of being valued, leading to increased productivity and stability, If they do not feel included in the organization, they are unlikely to reach their full potential. Inclusive leadership is relatively new leadership style to be investigated in nursing which became a necessity with changing demographics of the nursing workforce. In Egypt, and as regards the nursing field, research on inclusive leadership is limited and needs further investigation. However, despite the importance of inclusive leadership in predicting nurses' work engagement; almost limited study has been done to examine the effect inclusive leadership has on nurses' work engagement.

Aims of the Study

Determine the relationship between head nurses' inclusive leadership and nurses' work engagement at Itay El Baroud General Hospital.

Research Question

What is the relationship between head nurses' inclusive leadership and nurses' work engagement at Itay El Baroud General Hospital?

Materials and Methods

Design: A descriptive, correlational research design was utilized to conduct this study.

Setting: This study was conducted at Itay El Baroud General Hospital at El-Beheira Governorate, which is affiliated to the Ministry of Health and Population (MOHP), with bed capacity 220 beds. It included all inpatient units (medical and surgical) and Intensive Care Units (ICUs) (n=16), namely: (1) medical units (n=8), as follows: General Medical (Male and Female), Obstetric, Pediatric, Poison, Orthopedic, Neurosurgical and Dialysis units; (2) surgical units (n=3), as follows: General Surgical (Male and Female) and Operation

units; and finally ,(3) ICUs (n=5), as: General, Neonatal, Pediatric, Coronary Care and Emergency units.

Subjects: Two groups of subjects were included in this study.

- a) All head nurses and their assistants, who were working at the above-mentioned setting and who were available at the time of data collection, with at least one year of experience (n=32).
- b) Nurses were randomly selected (n=300), who were working in the previously mentioned setting; and who were available at the time of data collection and willing to participate in this study , with at least one year of experience. They were divided based on Epi Info (7), as follows: professional nurses (n=100) and technical nurses (n=200).

Tools: The study used two tools for data collection:

Tool (I): Inclusive Leadership Scale:

It was developed by (Cohen ,2022) to assess head nurses' inclusive leadership. It consists of eight dimensions (97 items), namely: (1) fair treatment (10-item), such as: enforces standards equally across all team members; (2) openness to difference (14-item), such as: empowers others to make decisions; (3) connection (19-item), such as: ensures all members feel a part of the team; (4) unique perspectives and expertise (15-item) , such as: ensures all sides of a problem have been heard; (5) shared understanding in communication (12-item), such as: encourages open discussion and conversation; (6) belonging (9-item), such as: cares for other; (7) authenticity (8-item), such as: encourages me to be authentic; and finally, (8) leadership attributes (10-item), such as: gives honest and thoughtful feedback.

Responses were measured using 7-point Likert scale, as follows: (1) strongly disagree, (2) disagree, (3) somewhat disagree, (4) neither agree nor disagree, (5) somewhat agree, (6) agree and (7) strongly agree. The overall score ranged from 97 to 679. The scoring system was categorized as follows: low level of inclusive leadership (97-290); moderate level (291-484); and high level (485-679).

Tool (II): Job Engagement Scale:

It was developed by (Rich, 2010) to assess nurses' work engagement. It consists of three dimensions with 18 items , as follows: (1) physical engagement (6-item) , such as: I exert my full effort to my job ; (2) cognitive engagement (6-item) , such as : at my work , I concentrate on my job; and finally, (3) emotional engagement (6-item) , such as: I feel energetic at my work .

Responses were measured using 5-point Likert scale, as follows: (1) strongly disagree, (2) somewhat disagree, (3) neither agree nor disagree, (4) somewhat agree and (5) strongly agree. The overall score ranged from 18 to 90. The scoring system was categorized as: low level of job engagement (18-41); moderate level of job engagement (42-65); and high level of job engagement (66-90).

In addition, a demographic characteristics data sheet was developed by the researcher to collect data from the study subjects, such as: age, gender, educational qualification, working unit, years of nursing experience, years of unit experience and marital status.

Methods

1. An official permission to conduct this study was obtained from the Dean of Faculty of Nursing, Damanshour University and the responsible authorities of the study setting, after explanation of the purpose of the study.
2. The two tools were translated into Arabic and were tested for its content validity and translation by a panel of five experts in the field of the study .
3. A pilot study was carried out on 10% of total sample size, head nurses and their assistants (n=3) and nurses (n=30), rather than study subjects , to check and ensure the clarity , applicability and feasibility of the tools ; identify obstacles and problems that may be encountered during data collection and the necessary modifications were done.
4. The two tools were tested for its reliability by using Cronbach's alpha co-efficient test. The tools were proved to be reliable where $\alpha = 0.946$ for tool I (Inclusive Leadership

Scale) and $\alpha = 0.892$ for tool II (Job Engagement Scale).

5. The date was collected on the presence of the researcher to explain the aim of the study; ensure the objectivity of the study subjects' responses and non-contamination of their opinions; and check that all items were answered. It was conducted through self-administered questionnaires to study subjects at their work settings. Every subject took approximately from 15 to 20 minutes to fill out the two tools. Data collection took a period of two months ranged from the beginning of June 2023 to the beginning of August 2023.
6. The two tools were delivered to both study subjects (head nurses and nurses); in order to promote self-evaluation and peer / subordinates' evaluation to ensure unbiased responses

Ethical Considerations

- The research approval was obtained from the Ethical Committee at the Faculty of Nursing-Damanhour University, prior to the start of the study.
- An informed written consent was obtained from the study subjects after explanation of the aim of study.
- Privacy and confidentiality of the collected data were maintained during implementation of the study.
- Anonymity regarding data collected was considered.
- The right to refuse to participate or withdraw from the study was assured during the study.

Statistical Analysis:

The collected data was revised, categorized, coded, computerized, tabulated and analyzed using Statistical Package for Social Sciences (SPSS) version 25.0. Reliability of the tools was determined by Cronbach's alpha. Data were presented using descriptive statistics in the form of frequency, percent, Mean \pm SD, Min-Max and mean percent score. P value ≤ 0.05 was considered statistically significant, and P value ≤ 0.01 was considered highly statistically significant.

Quantitative variables were presented using chi square test to examine relationship between variables. The Pearson correlation coefficient test was used to explore the relationship between the head nurse's inclusive leadership and nurses' work engagement.

Results

Table 1 shows that mean \pm SD of head nurses' age was 37.28 \pm 3.07; compared to 31.73 \pm 5.98 for nurses. The majority of head nurses (87.5 %) had from 30 to 40 years old; whereas, 27.3% of nurses had more than or equal 50 years old. In relation to working unit, half of head nurses were working in medical units (50 %), whereas, less than half of nurses were working in ICUs (46.7 %). Regarding gender, the majority of head nurses and nurses were female (100%, 93.3%), consecutively.

As for educational qualification, more than half of head nurses hold bachelor degree of sciences in nursing (53.1%); whereas, the highest percentage of nurses (65%) hold diploma of technical nursing institute. Pertaining to years of nursing experience, mean \pm SD of head nurses was 16.68 \pm 11.36 ; compared to 2.71 \pm 1.16 for nurses. Moreover, less than half of head nurses (46.9%) had from 10 to less than 15 years of this experience; whereas, above one third of nurses (35.7%) had more than or equal 15 years of the same experience.

According to years of unit experience, mean \pm SD of head nurses was (9.40 \pm 6.07); whereas, (5.95 \pm 4.41) for nurses. Half of head nurses (50%) had from 5 to less than 10 years of this experience; whereas, one third (33.6%) of nurses had from 5 to less than 10 years of the same experience. In relation to marital status, the majority of head nurses and nurses were married (96.8%, 87.6%), respectively.

Table 2 shows that there were no significant differences between Head nurses' and nurses' inclusive Leadership and its dimensions, where (P>0.05).

Table 3 portrays that total inclusive leadership and its dimensions got high mean percent scores, namely: Fair treatment, openness to difference, connection, unique perspectives and expertise, shared understanding in communication, belonging,

authenticity and leadership attributes. (71.9%, 76.15%, 73.7%, 74.9%, 77%, 75% , 74.3%,73.4%), respectively.

Figure 1 explains that the highest percentage of IL was related to shared understanding in communication and belonging dimensions (72.9%, 64.2%) ,respectively, followed by fair treatment, openness to differences and connection (60.2%, 59.9%, 58.1%), consequently, whereas the lowest percentage was related to unique perspectives and expertise, leadership attributes and authenticity (56.9%, 55.7%, 55.1%) , consequently. Moreover, nearly two thirds of the studied subjects had high level of inclusive leadership (63.3%) ; compared to above one third of studied subjects had moderate level of inclusive leadership (36.7%).

Table 4 shows that there were no differences between head nurses and nurses work engagement and its dimensions, where ($P>0.05$).

Table 5 shows that total nurses' work engagement and its dimensions got high mean percent scores, namely: physical engagement, emotional engagement and cognitive engagement. (80.7%, 88.3%, 91%), respectively.

Figure 2 explains that the highest percentage of WE was related to emotional engagement and cognitive engagement dimensions (60.5%, 50.3%) ,respectively , whereas the lowest percentage was related to physical engagement (30.7%). Moreover, the majority of the studied subjects got high level of work engagement (93.7%); compared to less than one quarter of studied subjects got moderate level of work engagement (6.3%).

Table 6 states that there was positive highly statistical significant correlation

between total head nurses' inclusive leadership and its dimensions and there was positive highly statistical significant correlation between nurses' work engagement and its dimensions, where ($P=0.000$). However, there was positive highly statistical significant correlation between total head nurses' inclusive leadership and nurses' work engagement, where ($P=0.000$).

Table 7 represents the result of multiple regression analysis between head nurses' inclusive leadership as independent variable and IL dimensions, age , working unit, gender, qualification, years of experiences in nursing ,years of experiences in nursing unit and marital status as predictors, where adjusted $R^2=0.909$. Where the model is significant ($F = 192.607, P = 0.000$).

However, coefficients table of regression analysis has displayed that openness to difference, connection and shared understanding in communication are significant predictors of head nurses' inclusive leadership, where ($P=.015, .000, 0.000$), respectively.

Table 8 represents the result of multiple regression analysis between nurses' work engagement as dependent variable and WE dimensions, age , working unit, gender, qualification, years of experiences in nursing ,years of experiences in nursing unit and marital status as predictors, where adjusted $R^2=0.730$. Where the model is significant ($F = 124.491, P = 0.000$).

However, coefficients table of regression analysis has displayed that physical engagement, emotional engagement and cognitive engagement are significant predictors of nurses' work engagement, where ($P=.000,.000,.000$), respectively.

Table (1): Demographic characteristics of studied subjects' working at Itay El Baroud General Hospital (N=332).

Demographic characteristics	Head nurses (N= 32)		nurses (N= 300)		Total (N= 332)	
	No	%	No	%	No	%
1) Age in years						
• 20-	0	0.0	66	22.0	66	19.9
• 30-	28	87.5	72	24.0	100	30.1
• 40-	4	12.5	80	26.7	84	25.3
• ≥50	0	0.0	82	27.3	82	24.7
Min max	31-42		24-53		24-53	
Mean ±SD	37.28±3.07		31.73± 5.98		32.21± 5.99	
2)Working Unit						
• Medical	16	50.0	120	40.0	136	40.9
• Surgical	6	18.8	40	13.3	46	13.9
• ICUs	10	31.2	140	46.7	150	45.2
3)Gender						
• Male	0	0.0	20	6.67	20	6.1
• Female	32	100	280	93.3	312	93.9
4)Educational qualifications:						
• Diploma Secondary Technical Nursing School	0	0.0	5	1.7	5	1.6
• Diploma Technical Nursing Institute	0	0.0	195	65	195	58.7
• Bachelor of science in nursing	17	53.1	97	32.3	114	34.3
• Post graduate studies	15	46.9	3	1.0	18	5.4
5)Years of nursing experience:						
• < 5	2	6.2	66	22.0	68	20.5
• ≥5-	3	9.4	63	21.0	66	19.9
• ≥10-	15	46.9	64	21.3	79	23.8
• ≥15	12	37.5	107	35.7	119	35.8
Mean ±SD	16.68±11.36		2.71±1.16		2.75±1.15	
6)Years of unit experience:						
• < 5	8	25.0	79	26.4	87	26.2
• ≥5-	16	50.0	101	33.6	117	35.2
• ≥10-	5	15.6	82	27.3	87	26.2
• ≥15	3	9.4	38	12.7	41	12.4
Mean ±SD	9.40±6.07		5.95±4.41		6.25±4.69	
7)Marital status						
• Single	0	0.0	27	9.0	27	8.1
• Married	31	96.8	263	87.6	294	88.5
• Widow	1	3.2	7	2.4	8	2.5
• Divorced	0	0.0	3	1.0	3	0.9

Table (2): mean scores of inclusive leadership among head nurses and nurses, working at Itay El Baroud General Hospital (N=332).

Inclusive leadership Dimensions	Head nurse No= 32			nurses No= 300			T / p
	Min	Max	Mean± SD	Min	Max	Mean± SD	
Fair treatment (10-item)	40	67	53.30±8.270	40	67	54.21±8.260	0.002 0.964
Openness to difference (14-item)	54	95	74.51±12.507	54	95	75.81±12.086	0.108 0.743
Connection (19-item)	78	119	97.74±12.086	78	126	100.40±13.904	0.930 0.336
Unique perspectives and expertise (15-item)	60	96	78.43±12.315	58	99	80.56±11.494	2.611 0.107
Shared understanding in communication (12-item)	48	81	64.56±9.827	48	81	65.84±9.510	1.657 0.199
Belonging (9-item)	36	57	47.14±5.973	36	60	48.18±6.864	2.463 0.118
Authenticity (8-item)	32	51	41.52±5.320	32	53	42.56±6.095	2.443 0.119
Leadership attributes (10-item)	40	654	51.21±6.807	38	67	52.65±7.715	2.290 0.131
Total Inclusive Leadership dimensions	46	90	520.250±71.0483	604	643	508.440±59.2520	2.684 0.102

** High significant at $p \leq 0.01$; *Significant at $P \leq 0.05$; Not Significant at $P > 0.05$

Table (3): Mean percent scores of head nurses' inclusive leadership among studied subjects, working at Itay El Baroud General Hospital (N=332).

Inclusive leadership dimensions	studied subjects (N=332)			
	Min	Max	Mean± SD	Mean% Score
• Fair treatment (10-item)	40	67	53.39±8.26	71.9
• Openness to difference (14-item)	54	95	74.63±12.45	76.15
• Connection (19-item)	78	126	97.99±12.47	73.7
• Unique perspectives and expertise (15-item)	58	99	78.63±10.00	74.9
• Shared understanding in communication (12-item)	48	81	64.68±8.38	77.0
• Belonging (9-item)	36	81	47.24±6.06	75.0
• Authenticity (8-item)	32	53	41.62±5.39	74.3
• Leadership attributes (10-item)	38	67	51.35±6.90	73.4
Total mean score of inclusive leadership (97 items)	404	643	508.57±60.46	74.9

Low score: $0 < 33.3\%$; moderate score $\geq 33.3\% < 66.6\%$; high score $\geq 66.6\% - 100.0\%$

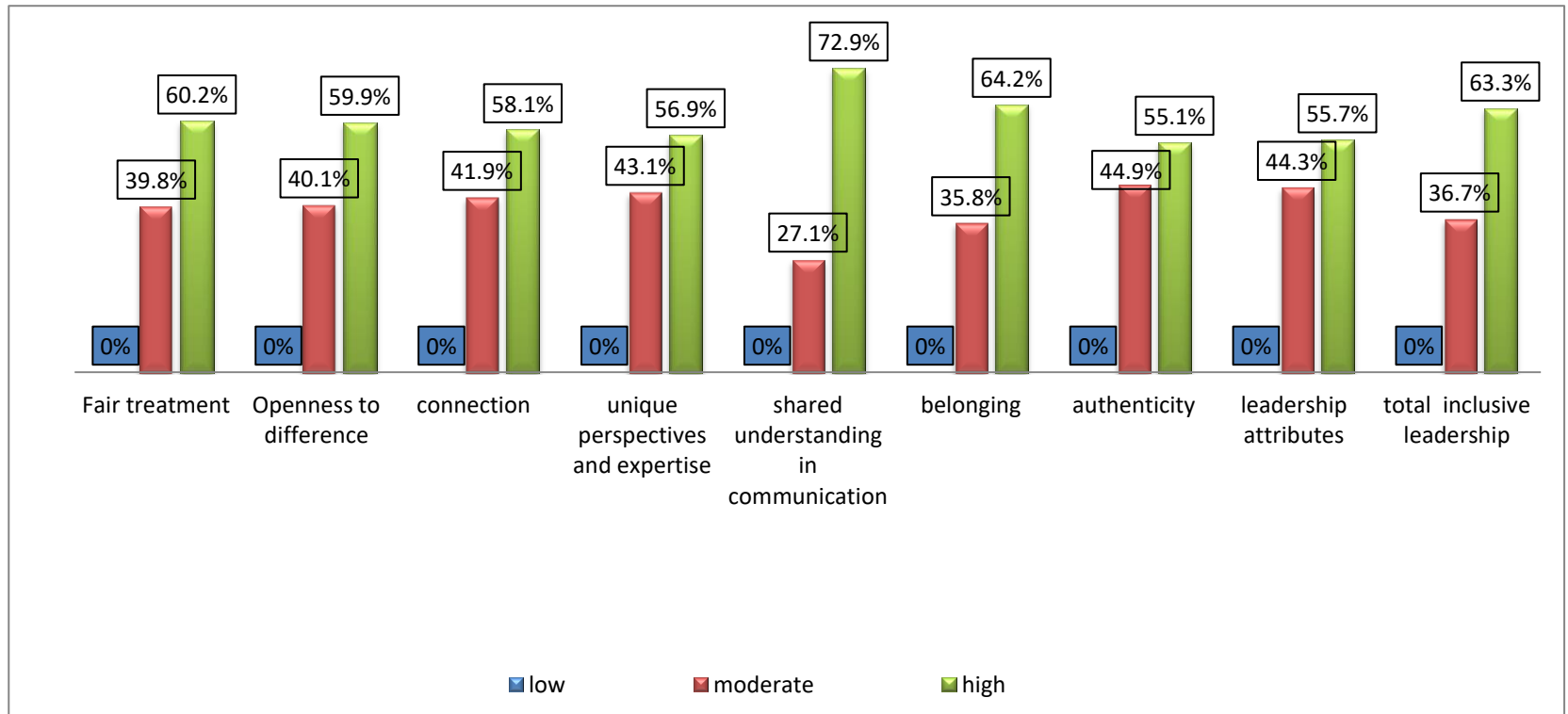


Figure (1): Distribution of head nurses’ inclusive leadership among studied subjects, working at Itay El Baroud General Hospital (N=332).

Table (4): Mean scores of work engagement among head nurses and nurses, working at Itay El Baroud General Hospital (N=332).

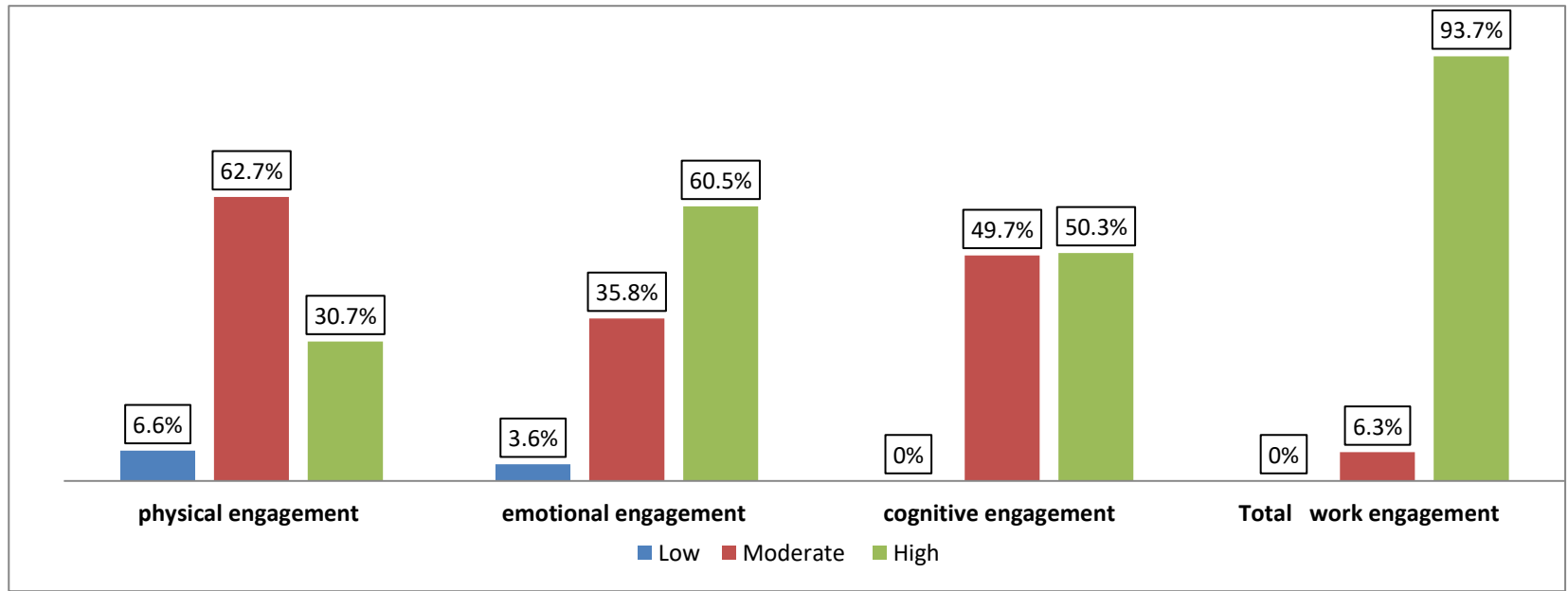
Work Engagement dimensions	Head nurse No= 32			nurses No= 300			T/p
	Min	Max	Mean± SD	Min	Max	Mean± SD	
Physical engagement (6-item)	8	32	24.23±5.082	18	32	24.06±5.934	0.852 0.357
Emotional engagement (6-item)	13	30	26.51±3.002	13	30	26.25±3.565	0.230 0.632
Cognitive engagement (6-item)	24	30	27.29±2.326	24	30	27.37±2.338	0.022 0.881
Total Nurses' Work Engagement	46	90	77.687±10.2970	46-	90	78.043±8.9783	0.487 0.210

** High significant at $p \leq 0.01$; *Significant at $P \leq 0.05$; Not Significant at $P > 0.05$

Table (5): Mean percent scores of nurses' work engagement among studied subjects, working at Itay El Baroud General Hospital (N=332).

work engagement dimensions	Min	Max	Mean± SD	Mean %Score
• Physical engagement (6-item)	8	32	24.21±5.16	80.7
• Emotional engagement (6-item)	13	30	26.48±3.05	88.3
• Cognitive engagement (6-item)	24	30	27.30±2.32	91.0
Total mean score work engagement (18 items)	46	90	78.00±9.09	86.7

Low score: 0-<33.3%; moderate score $\geq 33.3\%$ -<66.6%; high score $\geq 66.6\%$ - 100.0%



Low score: 0-<33.3%; moderate score ≥33.3%-<66.6%; high score ≥66.6%- 100.0%

Figure 2: Distribution of nurses' work engagement among studied subjects, working at Itay El Baroud General Hospital (N=332).

Table (6): Correlation matrix among head nurses' inclusive leadership and nurses' work engagement, working at Itay El Baroud General Hospital (N=332).

Correlation matrix		Inclusive Leadership								Work Engagement				
		Dimensio n 1	Dimensio n 2	Dimensio n 3	Dimensio n 4	Dimensio n 5	Dimensio n 6	Dimensio n 7	Dimensio n 8	Total Inclusive Leadershi p	Dimensio n 1	Dimensio n 2	Dimensio n 3	Total Work Engagemen t
Fair treatment(1)	r	1	.977	.841	.699	.575	.569	.494	.403	.854	-.029	-.050	-.062	-.049
	P		.000**	.000**	.000**	.000**	.000**	.000**	.000**	.000**	.603	.365	.263	.376
Openness to difference(2)	r		1	.756	.592	.496	.477	.400	.307	.781	-.025	-.032	-.051	-.038
	P			.000**	.000**	.000**	.000**	.000**	.000**	.000**	.648	.564	.356	.491
Connection (3)	r			1	.931	.675	.733	.708	.669	.938	-.029	-.089	-.081	-.067
	P				.000**	.000**	.000**	.000**	.000**	.000**	.594	.104	.140	.220
Unique perspectives and expertise(4)	r				1	.778	.808	.803	.781	.925	-.020	-.079	-.065	-.055
	P					.000**	.000**	.000**	.000**	.000**	.714	.149	.235	.320
Shared understanding in communication(5)	r					1	.944	.915	.846	.860	.041	.015	.003	.029
	P						.000**	.000**	.000**	.000**	.453	.791	.963	.598
Belonging(6)	r						1	.984	.949	.888	.017	-.035	-.032	-.010
	P							.000**	.000**	.000**	.757	.530	.558	.853
Authenticity(7)	r							1	.979	.855	.018	-.041	-.030	-.011
	P								.000**	.000**	.742	.460	.582	.840
Leadership attributes(8)	r								1	.800	.012	-.052	-.034	-.020
	P									.000**	.830	.345	.534	.723
Total Inclusive Leadership	r									1	-.008	-.056	-.056	-.038
	P										.883	.309	.309	.494
Physical(1)	r										1	.738	.423	.923
	P											.000**	.000**	.000**
Emotional(2)	r											1	.561**	.898
	P												.000**	.000**
Cognitive(3)	r												1	.684
	P													.000**
Total work Engagement	r													1
	P													

r : Pearson Correlation *Significant P≤0.05 ** High significant p≤0.01 Interpretation of r: Weak (0.1-0.24); Intermediate (0.25-0.74); Strong (0.75-0.99) ; Perfect (1)

Table (7): Multivariate regression analysis of head nurses' inclusive leadership among studied subjects, working at Itay El Baroud General Hospital (N=332).

Dimensions	Unstandardized Coefficients	Standardized Coefficients	t	p	
	B	p			
(Constant)	-.153		-1.846	.066	
• Fair treatment	-.120	-.122	-.988	.324	
• Openness to difference	.291	.295	2.446	.015*	
• Connection	.584	.597	11.755	.000*	
• Unique perspectives and expertise	-.053	-.055	-1.115	.266	
• Shared understanding in communication	.235	.216	5.321	.000*	
• Belonging	.024	.024	.411	.682	
• Authenticity	.028	.028	.439	.661	
• Leadership attributes	.078	.080	1.595	.112	
• Age	9.720	.179	1.040	.299	
• working unit	1.852	.019	.238	.812	
• gender	9.475	.037	.644	.520	
• Qualification	2.291	.021	.245	.807	
• years of experiences in nursing	-10.273	-.195	-.958	.339	
• Years of experiences in nursing unit	1.431	.023	.228	.820	
• Marital status	3.304	.020	.254	.800	
ANOVA^a					
• Model	R²	df	Mean Square	F	p
• Regression	0.909	8	7.974	192.607	0.000*

*Significant $P \leq 0.05$ Low score: 0-<33.3%; moderate score $\geq 33.3\%$ -<66.6%; high score $\geq 66.6\%$ - 100.0%

Table (8): Multivariate regression analysis of nurses' work engagement among studied subjects, working at Itay El Baroud General Hospital (N=332).

Dimensions	Unstandardized Coefficients	Standardized Coefficients	t	p	
	B	p			
(Constant)	2.498		49.426	.000*	
• Physical engagement	.212	.489	9.787	.000*	
• Emotional engagement	.234	.542	9.745	.000*	
• Cognitive engagement	-.255	-.523	-10.614	.000*	
• Age	-1.274	-.155	-.917	.360	
• working unit	.530	.036	.459	.646	
• gender	2.981	.078	1.363	.174	
• Qualification	-.128	-.008	-.092	.927	
• years of experiences in nursing	-.679	-.086	-.425	.671	
• Years of experiences in nursing unit	2.475	.267	2.653	.008	
• Marital status	1.755	.072	.907	.365	
ANOVA^a					
• Model	R²	df	Mean Square	F	t
• Regression	0.730	3	3.491	124.491	.000*

* Significant $P \leq 0.05$ Low score: 0-<33.3%; moderate score $\geq 33.3\%$ -<66.6%; high score $\geq 66.6\%$ - 100.0%

Discussion

In health care organizations, the ultimately diverse nursing body with their wide ranges of qualification levels, ages and experiences along ; and the highly demanding working environment that imposes integration and efficient communication to improve patient outcomes, present significant challenges in accordance to the importance of individuals' inclusion in their working environment. Hence, high diversity situations are expected to promote creativity in the workplace, encourage team members to behave authentically and enhance cooperative workplace behavior (Ocloo et al.,2021) . Inclusive leaders stimulate nurses to be highly effective in the work tasks as the working environment where nurses feel that their skills are optimized and they receive personal recognition for their contribution make them to feel that they are being valuable; more energetic to do their job; and have more positive feeling and helpful resources (Baljoon et al.,2018 and Roberson,2022) .

Inclusive leadership appreciates each nurse' talent without keeping in consideration his/her background or the ability to perform (Peesker et al.,2019). In a healthy organization, nurses work around a common goal; and leaders provide nurses with the tactics, training and support to achieve the tasks and continue to build capacity for continued performance (Siegel et al.,2015). Consequently, it will encourage nurses to reciprocate the resources given by the leader through devoting themselves cognitively, emotionally and physically in tasks and organizations which will result in a greater work engagement (Cudjor, 2022) . Nurses who engaged in their work are more motivated to remain committed to their employer, stay focused on achieving organizational goals and drive towards a better organization's future (Yarbrough et al.,2017). Disengaged nurses can make turbulence in the organization and affect patient satisfaction, quality of care, productivity, nurses' retention and other important project areas (Lee et al.,2020). Hence, this study aimed to determine the relationship between head nurses' inclusive leadership and nurses' work engagement.

The findings of the present study revealed that there were no statistical significant

differences between head nurses' and nurses' inclusive leadership and its dimensions. This may be related to head nurses and nurses feel respected, supported, shared in decisions, equally valued and empowered by hospital rules and policies at their working units. Moreover, head nurses might have delegated power to nurses, with high autonomy to do their work activities on their way and appreciated the presence of all nurses at the work settings. This is in the same line with (García-Sierra and Fernández-Castro , 2018) who revealed that the practice of hospital empowerment regarding rules and polices is fundamental for professional growth and positively affects the quality of patient care. Moreover, (Elsayed , Abdel-Ghani and Ibrahim ,2020) found that there was no statistical significant difference between comprehensiveness, belonging and inclusion among studied subjects due to workplace support of comprehensiveness and belonging . Furthermore, (Wang et al., 2020) reported that there was no statistical significant difference due to inclusive leadership behaviors that consider individual's personality and values, belonging and unique perspectives among studied subjects.

Contradictory with this result (Hu, Wang and Shi ,2020) highlighted that delegation contributes to increased stress among individuals' potentially leading to burnout and disengagement. Furthermore, (Smith and Johnson , 2022) concluded that delegation can negatively affect staff intentions to stay at work, particularly when it leads to job dissatisfaction, frustration and stress.

Additionally, the total inclusive leadership got high mean percent scores among studied subjects. Moreover, inclusive leadership dimensions got high mean percent scores. This may be because of head nurses' awareness about the positive impact of inclusive leadership as about half of them hold higher educational qualification; and nurses cooperate with head nurses to be included at their work due to one third of them hold bachelor degree in nursing. Also, this may be related to top level management support to head nurses which in turn reflect on the way of their management and interaction with nurses.

These goes in line with (Adams and Chamberlain ,2019) reported that head nurses support from top level management affect positively nurses wellbeing. Furthermore, this is consistent with (salman and Zoromba ,2022) and (Abdelaziz, Abdeen and Mohamed ,2023) who reported that the inclusive leadership dimensions got high mean percent score. On the other hand, (Noor et al., 2023) also revealed administrative support is positively associated with person-related hostility.

The findings of the present study revealed that there were no statistical significant differences between head nurses' and nurses' work engagement and its dimensions among studied subjects. This may be because of head nurses' support can improve nurses' psychological ownership level and reduce their turnover intention by treating them fairly, providing them with opportunities for self-development, paying attention to communication with them, increasing their sense of belonging, self-efficacy and self-identity and engaging them at their working units . This result is in harmony with (González-Gancedo et al., 2019) and (Abd Elhamed and Hassan ,2020) who reported that three dimensions of work engagement was significantly correlated with no differences among studied subjects due to head nurses support nurses' engagement at work.

On the other side, (Aboshaiqah et al., 2021) revealed that there was significant differences of work engagement among nurses due to educational qualifications differences. Moreover, (Chan et al., 2021) indicated that there was significant differences of emotional engagement among nurses due to head nurses focusing on cognitive and physical engagement rather than emotional engagement

As well as the total nurses' work engagement and its dimensions got high mean percent scores. This may be related to open door strategy between head nurses and nurses, good team work and hospital administrator motivation and support. Moreover; more than one third of nurses had more than 15 years of nursing experiences. This result is in line with (Abou Hashish, Abdel All and Mousa , 2018) who revealed that work engagement

got high mean percent score due to majority of studied subjects had high years of experience in nursing. This result is contradicted (Wan et al., 2018) and (Attia, Abo Gad and Shokir ,2020) who reported that work engagement dimensions got low mean percent score because of the sub-optimally decent work conditions constrain nurses' engagement and learning.

Moreover, the highest percentage of WE was related to cognitive engagement and emotional engagement dimensions, respectively, whereas the lowest percentage was related to physical engagement. This might be due to nurses' experienced full concentration and absorbed at work, which lead to feel happy, interested and engrossed in work so that time seems to pass quickly more than recognizing physical effort. This is parallel to the finding of (Mohammed et al., 2021) who reported that the highest means scores was related to absorption due to nurses were well prepared cognitively about workplace risks and how to adapt with it. In addition, (Weigelt et al., 2021) concluded that work engagement was found to be related to greater positive affect as well as reduced negative affect.

This result is contradicted with (Diab and El Deeb, 2020) , who reported that nurses experienced absorption as the lowest work engagement factor followed by vigor and lastly dedication due to lack of organizational support and motivation for innovative behaviors. (Pace and Sciotto, 2021) also revealed that making physical effort and performing extra mental activities negatively affect work engagement.

Concerning the relationship between head nurses' inclusive leadership and nurses' work engagement, the present study proved that there was positive highly statistical significant correlations between total head nurses' inclusive leadership and nurses' work engagement. This might be explained as when head nurses or leaders practice inclusive leadership behaviors by being open to discuss nurses' needs, available for teamwork and accessible for more information in respect of new problems, nurses are psychologically, intellectually and emotionally interested in their job duties and responsibilities and exhibit high levels of work engagement.

This result is correspondent with (**Bannay, Hadi and Amanah, 2020**) who indicated that inclusive leadership behaviors such as openness, accessibility and availability lead to subordinates motivation to be more engaged in their work. (**Aslan , Mert and Sen ,2021**) also revealed that inclusive leadership is a strong predictor for work engagement.

Contradictory with this results, a study by (**Sprouse, 2021**) that suggested no statistically positive association between inclusive leadership and nurses' work engagement as long as individuals often operate within specific protocols and guidelines that may not allow as much flexibility or autonomy and limit the impact of inclusive leadership on their work engagement. (**Cohen, 2022**) reported that IL is not related to cognitive engagement because of cognitive engagement is often driven by intrinsic motivation and individuals' personal interest in the work.

Besides, the present study revealed that openness to difference, connection and shared understanding in communication were significant predictors of IL. This may be related to when head nurses foster nurses' connection, it makes them feel heard and understood and gives them a sense of belonging, which characterized by a shared expectation of what needs to be communicated, to whom, when and how to promote understanding, it includes using verbal and nonverbal communication skills along with active listening.

This is in line with (**Zhu, Xu and Zhang ,2019**) who revealed that connection is IL predictor that had a significantly effect on psychological safety and creativity as long as when leaders actively connect with their team members, they foster trust and create an environment where individuals feel valued and respected. This emotional bond encourages open communication, make team members feel comfortable, share their ideas, concerns and perspectives.

In addition to physical, emotional and cognitive engagement were significant predictors of work engagement. This may be related to nurses' exert effort and energy that invest in the performance of their job to achieve hospital goals. Head nurses invest

nurses' cognitive resources through attentiveness, concentration and absorption during role performance and expression of excitement, interest and enthusiasm in one's job role. Thus, nurses with positive attitude are quickly involved in their work and adjust to changes in the work environment showing behavioral engagement. This is in line with (**Obied , Behilak and Osman, 2023**) who reported that cognitive parameter is predictor of work engagement for the reason that individuals who are engaged cognitively tend to invest more concentration and mental energy in finding innovative solutions and mastering tasks. On the other hand, (**Kuok and Taormina, 2017**) reported that emotional engagement is not predictor of work engagement due to in high-pressure or highly structured environments, the primary demands are focused on task completion rather than emotional connection to the work.

Conclusion

The findings of the present study concluded that there was positive highly statistical significant correlation between total head nurses' inclusive leadership and nurses' work engagement at Itay El Baroud General Hospital. However, there was positive highly statistical significant correlation between total head nurses' inclusive leadership and its dimensions and there was positive highly statistical significant correlation between nurses' work engagement and its dimensions.

Recommendations

Based on the findings of the current study, the following recommendations are suggested:

A. Faculty of nursing should:

- Introduce inclusive leadership style to nursing curriculum as the new style that suit the current work environment needs.
- Conduct protocol between Faculty of Nursing Damanhour University and hospitals at El-Beheira Governorate to conduct workshops for nursing administrators to prepare them with the required knowledge and competencies to develop inclusive leadership abilities.

- Foster future research about inclusive leadership and work engagement in different Egyptian hospitals to provide more rigorous results.

B. Hospital administrators should:

- Conduct training programs and conferences for head nurses to enhance their inclusive leadership skills for positive relationships with nurses through being available, accessible and demonstrating open door strategy.
- Implement mentorship program where more experienced nurses act as models and mentors to the new nurses in the profession to empower and motivate them to be engaged in their work.
- Communicate clear goals and expectations to head nurses, through sharing new ideas, which make them motivated and give them a sense of trust to maintain their work engagement.
- Conduct regular meetings with head nurses to promote work engagement, team work, effective interpersonal communications, solving problems and fulfill their needs.
- Apply training program to monitor level of work engagement of nurses through providing constructive feedback, encourage engagement and provide a competitive advantage.
- Foster a positive work climate for nurses to participate in decision making process and problem solving in order to promote working environment to enhance their work engagement.
- Develop healthy supporting social networks in the workplace.

C. Head nurses should:

- Attend training programs, conferences and seminars about inclusive leadership styles.
- Encourage nurses' active participation in the decision-making process and pursuing continuous professional development activities seem to be promising strategies to

create a healthy work climate that improves nurses' work engagement levels.

- Help nurses to set work goals, lead change and maintain optimistic.
- Build belonging and authenticity in nursing staff by providing them with more authorities and responsibilities through applying delegation system, to encourage them to act in constructive and flexible manner and become role model for them.
- Increase nurses' satisfaction to increase their work engagement through regular scheduling incentives, encourage team spirit and establish regular meetings to discuss their problems.
- Provide nurses with continuous positive feedback about their performance to boost their self-confidence and stimulate feeling of belonging to organization to increase their work engagement.
- Foster positive work environment through encouraging team building and team work to improve workflow, which positively will impact their work engagement.

D. Nurses should:

- Communicate openly with their head nurses to discuss their needs.
- Attain training programs to improve their abilities and skills to work effectively; thus, increase work engagement.
- Attain and maintain positive workplace climate through working cooperatively and preserving team spirit.

Further studies:

- Impact of head nurses' inclusive leadership on nursing staff performance.
- Relationship between inclusive leadership and productivity of work.
- Relationship between nurses' work engagement and their turnover.
- Relationship between nurses' work engagement and psychological wellbeing.

References

- Abdelaziz, N. N., Abdeen, M. A., & Mohamed, H. M. (2023). Effect of Inclusive Leadership on Nurses' Work Engagement at Zagazig University Hospitals. *Zagazig Nursing Journal*, 19(2), 13-25.
- Aboshaiqah, A. E., Hamadi, H. Y., Salem, O. A., & Zakari, N. M. (2021). The work engagement of nurses in multiple hospital sectors in Saudi Arabia: a comparative study. *Journal of nursing management*, 24(4), 540-548.
- Abou Hashish, E., Abdel All, N., & Mousa, A. (2018). Nurses' perception of psychological empowerment and its relationship to work engagement and job insecurity. *Journal of Nursing Education and Practice*, 8(9), 36-44.
- Adams, A. M. N., Chamberlain, D., & Giles, T. M. (2019). The perceived and experienced role of the nurse unit manager in supporting the wellbeing of intensive care unit nurses: An integrative literature review. *Australian Critical Care*, 32(4), 319-329.
- Aslan, H., MERT, I. S., & SEN, C. (2021). The effect of inclusive leadership on the work engagement: an empirical study from Turkey. *The Journal of Asian Finance, Economics and Business*, 8(11), 169-178.
- Attia, A. A. M., Abo Gad, R. A. E. F., & Shokir, M. E. (2020). Workplace bullying and its effect on staff nurses' work engagement. *Tanta Scientific Nursing Journal*, 18(1), 83-109.
- Baljoon, R. A., Banjar, H. E., & Banakhar, M. A. (2018). Nurses' work motivation and the factors affecting It: A scoping review. *International Journal of Nursing & Clinical Practices*, 5(1), 277.
- Bannay, D. F., Hadi, M. J., & Amanah, A. A. (2020). The impact of inclusive leadership behaviors on innovative workplace behavior with an emphasis on the mediating role of work engagement. *Problems and Perspectives in Management*, 18(3), 479.
- Chan, S. L., Lin, C. C., Chau, P. H., Takemura, N., & Fung, J. T. C. (2021). Evaluating online learning engagement of nursing students. *Nurse Education Today*, 104, 104985.
- Cohen, R. F. (2022). The relationships between dimensions of inclusive leadership and aspects of employee engagement: Crucial connections for organizational success. Antioch University.
- Cudjor, S. K. (2022). Employee Rewards and Performance of Public Sector Nurses in Ghana: Mediating Roles of Psychological Conditions, Employee Engagement and Causality Orientations (Doctoral dissertation, University of Cape Coast).
- Diab, G. M. A. E., & Eldeeb, G. A. E. A. (2020). Effect of organizational support and knowledge sharing on nurses' innovative behavior. *Int J Nurs Sci*, 10, 51-61.
- Dubrin, A. J. (2022). Leadership research findings, practice and skills. Dreamtech Press.
- Elsayed, W. A., Abdel-ghani, A. M., & Ibrahim, A. A. M. (2020). The Role of Work Locus of Control and Inclusive Leadership on Nurses' innovative Work Behavior. *Assiut Scientific Nursing Journal*, 8(20.0), 124-133.
- Fang, Y. C., Chen, J. Y., Wang, M. J., & Chen, C. Y. (2019). The impact of inclusive leadership on employees' innovative behaviors: the mediation of psychological capital. *Frontiers in psychology*, 10, 1803.
- García-Sierra, R., & Fernández-Castro, J. (2018). Relationships between leadership, structural empowerment, and engagement in nurses. *Journal of advanced nursing*, 74(12), 2809-2819.
- González-Gancedo, J., Fernández-Martínez, E., & Rodríguez-Borrego, M. A. (2019). Relationships among general health, job satisfaction, work engagement and job features in nurses working in a public hospital: A cross-sectional study. *Journal of clinical nursing*, 28(7-8), 1273-1288.

- Goswami, S., & Goswami, B. K. (2018). Exploring the relationship between workforce diversity, inclusion and employee engagement. *Drishtikon: A Management Journal*, 9(1), 65-89.
- Hu, X., Wang, Y., & Shi, J. (2020). The impact of delegation on employee stress and well-being: A moderated mediation model. *Journal of Occupational Health Psychology*, 25(2), 165-176.
- Kuok, A. C., & Taormina, R. J. (2017). Work engagement: Evolution of the concept and a new inventory. *Psychological Thought*, 10(2).
- Lee, K., Mileski, M., Fohn, J., Frye, L., & Brooks, L. (2020, September). Facilitators and barriers surrounding the role of administration in employee job satisfaction in long-term care facilities: A systematic review. In *Healthcare* (Vol. 8, No. 4, p. 360). MDPI.
- Lee, M. C. C., Idris, M. A., & Tuckey, M. (2019). Supervisory coaching and performance feedback as mediators of the relationships between leadership styles, work engagement, and turnover intention. *Human Resource Development International*, 22(3), 257-282.
- Mohamed Abd Elhamed, S., & Hassan Hessuin, R. (2020). Effect of resilience on work engagement under authentic leadership. *Egyptian Journal of Health Care*, 13(3), 1158-1168.
- Mohamed, S.I., Nabway, Z. M., & Saleh, M. S. (2023). The Correlation between First-Line Nurse Managers' Leadership Style and Staff Nurses' Structural Empowerment and Work Engagement. *Alexandria Scientific Nursing Journal*, 25(3), 128-142.
- Mohammed Atiea Mohammed, K., Abdel Hamid Mohamed, A., El Said El Sabahy, H., & Saleh Moustafa Saleh, M. (2021). Preparedness of isolation hospitals to Covid-19 risk management and its impact on nurses' work engagement during the outbreak. *Egyptian Journal of Health Care*, 12(4), 61-74.
- Noor, N., Rehman, S., Ahmed, Y., Sarmad, M., & Mehmood, R. (2023). Discriminatory practices and poor job performance: A study of person-related hostility among nursing staff. *Heliyon*, 9(3).
- Obied, H. K., Behilak, S., & Osman, F. E. (2023). Resilience Skills in Relation to Psychiatric Nurses' Work Engagement and Mental Health in Facing COVID-19 Pandemic. *Assiut Scientific Nursing Journal*, 11(34), 175-184.
- Ocloo, J., Garfield, S., Franklin, B. D., & Dawson, S. (2021). Exploring the theory, barriers and enablers for patient and public involvement across health, social care and patient safety: a systematic review of reviews. *Health research policy and systems*, 19, 1-21.
- Pace, F., & Sciotto, G. (2021). The effect of emotional dissonance and mental load on need for recovery and work engagement among Italian fixed-term researchers. *International Journal of Environmental Research and Public Health*, 18(1), 99.
- Peesker, K. M., Ryals, L. J., Rich, G. A., & Boehnke, S. E. (2019). A qualitative study of leader behaviors perceived to enable salesperson performance. *Journal of Personal Selling & Sales Management*, 39(4), 319-333.
- Rich, B.L., J. A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on job performance. *Academy of management journal*, 53(3), 617-635.
- Salman, E.T., & Zoromba, M. A. (2022). COVID-19 Pandemic Highlights the Importance of Inclusive Leadership in Egyptian Hospitals to Improve Nurses' Psychological Distress. *Psych*, 4(3), 537-548.
- Siegel, E. O., Young, H. M., Zysberg, L., & Santillan, V. (2015). Securing and managing nursing home resources: Director of nursing tactics. *The Gerontologist*, 55(5), 748-759.

- Smith, A., & Johnson, L. (2022). The effects of delegation on employee retention and turnover intentions. *Journal of Human Resource Management*, 40(1), 87-102.
- Sprouse, M. (2021). *Inclusive Leadership and Work Engagement: Mediating Roles of Organizational Commitment and Creativity* (Doctoral dissertation, Grand Canyon University).
- Wan, Q., Zhou, W., Li, Z., & Shang, S. (2018). Associations of organizational justice and job characteristics with work engagement among nurses in hospitals in China. *Research in nursing & health*, 41(6), 555-562.
- Wang, Q., Wang, J., Zhou, X., Li, F., & Wang, M. (2020). How inclusive leadership enhances follower taking charge: the mediating role of affective commitment and the moderating role of traditionality. *Psychology research and behavior management*, 1103-1114.
- Weigelt, O., Schmitt, A., Syrek, C. J., & Ohly, S. (2021). Exploring the engaged worker over time—a week-level study of how positive and negative work events affect work engagement. *International journal of environmental research and public health*, 18(13), 6699.
- Yarbrough, S., Martin, P., Alfred, D., & McNeill, C. (2017). Professional values, job satisfaction, career development, and intent to stay. *Nursing Ethics*, 24(6), 675-685.
- Zhu, J., Xu, S., & Zhang, B. (2019). The paradoxical effect of inclusive leadership on subordinates' creativity. *Frontiers in psychology*, 10, 2960.