Inclusive Leadership and Its Relation to Teamwork Practices and Patients' Safety Culture from Nurses' Perspective

Heba El-Sayed Ammar[1], **Lamiaa Ismail Zaki Keshk**[2] **and Mervat E. A. El Dahshan**[3]

(1) Clinical Nursing Instructor at New Cairo Police Hospital
(2) Professor of Nursing Administration- Faculty of Nursing- Helwan University
(3) Professor of Nursing Administration- Faculty of Nursing- Menoufia University.

Abstract

Background: The dynamic and complex nature of healthcare environments necessitates leadership approaches that foster collaboration, inclusivity, and a strong commitment to patient safety. **Aim of the study**: To identify the relation among inclusive leadership, teamwork practices and patients' safety culture from nurses' perspective. **Research Design:** A descriptive-correlational research design was used. **Setting:** The current study was conducted at the Alexandria Main University Hospital. **Sample:** A simple random sample technique of 300 staff nurses constitutes the study sample. **Tools:** Three tools were used which are Inclusive Leadership Questionnaire, Mayo High Performance Teamwork Scale, and Survey on Patient Safety Cultur. **Results:** The current study findings revealed that nearly three-fifths (57.3%) of studied nurses perceived their leaders as having a high level of inclusive leadership, while, the minority **(**18%**)** of them perceived their leaders as having a low level of inclusive leadership. In addition, three-fifths (60.7%) of studied nurses perceived a good level of teamwork practices, while, the minority **(**8.3%**)** of them perceived a poor level of teamwork. Moreover, nearly, three-fifths (58%) of studied nurses perceived a good level of patients' safety culture, while, the minority (9.7%) of them perceived a poor level patients' safety culture. **Conclusion:** There was a highly statistically significant positive strong correlation among inclusive leadership, patient safety culture, and teamwork practices among studied nurses. **Recommendations:** Hospital need to implement structured training programs for nursing leaders focusing on inclusive leadership skills and its effect teamwork practice and patients' safety culture.

Keywords: Inclusive leadership, Patient safety and Teamwork practices

Introduction:

The dynamic and complex nature of healthcare environments necessitates leadership approaches that foster collaboration, inclusivity, and a strong commitment to patient safety. Inclusive leadership, characterized by openness, accessibility, and the active engagement of diverse team members, plays a critical role in promoting effective teamwork among nurses, and ensuring a supportive and safe environment. Understanding the interplay between inclusive leadership, teamwork practices, and patient safety culture is vital to enhancing healthcare outcomes for both patients and healthcare professionals **(Ly, 2024).**

Inclusive leadership is a modern leadership approach that emphasizes diversity, equity, and active participation, ensuring all team members regardless of rank or background feel valued and heard **(Haq et al., 2024).** In nursing, inclusive leaders foster collaboration by actively seeking input from nurses, addressing their concerns, and creating a psychologically safe environment where staff can speak up without fear. Key traits of inclusive nurse leaders include empathy, transparency, adaptability, and a commitment to fairness. Research shows that when nurses perceive their leaders as inclusive, they experience greater job satisfaction, reduced burnout, and improved patient care outcomes **(Flores et al., 2023).**

In diverse healthcare teams, inclusive leaders must navigate cultural differences to foster trust. For instance, nurses from collectivist cultures may hesitate to question authority figures, even when safety is at risk. Research suggests that leaders who receive cultural competency training are better at creating psychologically safe environments for all staff. A study by **Soleimani & Yarahmadi (2023)** found that units with culturally competent leaders had 20% higher error-reporting rates among minority nurses (site: multicultural hospital units).

Teamwork in healthcare refers to the coordinated efforts of nurses, doctors, and other healthcare professionals to deliver safe and effective patient care. In clinical settings, teamwork involves clear communication, shared decision-making, and mutual support to ensure tasks are completed efficiently. For nurses, strong teamwork means fewer medical errors, quicker response times, and better patient experiences. Studies show that when healthcare teams function well, patients recover faster, and staff experience less burnout. Effective teamwork is particularly crucial in high-pressure environments like emergency rooms and intensive care units, where miscommunication can have life-threatening consequences **(Baek, et al., 2023).**

The impact of teamwork on healthcare delivery is well-documented. A study by **Dhaliwal & Dang (2024)** found that hospitals with high teamwork scores had 20% fewer patient falls and 15% fewer readmissions, and also linked effective nursing teamwork to shorter hospital stays, as coordinated care reduces redundant tests and delays. Teamwork also improves job satisfaction. Nurses who feel supported by their peers are less likely to leave their jobs, addressing the global nursing shortage. During crises like the COVID-19 pandemic, healthcare teams that communicated clearly and adapted roles dynamically saved more lives **(Traylor et al., 2024).**

Patient safety culture refers to the shared values, attitudes, and behaviors within a healthcare organization that prioritize the prevention of harm to patients. It encompasses how healthcare professionals, including nurses, perceive their workplace's commitment to safety, error reporting, and continuous improvement. A strong safety culture is one where staff feel empowered to speak up about mistakes without fear of punishment, and where leadership actively supports safety initiatives **(AHRQ, 2023)**. Studies show that hospitals with a robust safety culture have fewer medical errors, lower infection rates, and better patient outcomes. For nurses, a positive safety culture means working in an environment where their concerns are taken seriously, and systemic flaws are addressed proactively as stated in **(Mistri et al., 2023).**

Nurses play a central role in promoting patient safety culture. As frontline caregivers, they are often the first to identify risks, such as medication discrepancies or unsafe staffing levels. Nurses also act as patient advocates, ensuring that safety protocols like hand hygiene and correct patient identification are followed. Studies highlight that nurse-led safety initiatives, such as daily safety huddles or checklists, significantly reduce errors in units like ICUs and surgical wards. However, nurses can only excel in this role if hospital leadership provides adequate resources, training, and a blame-free environment. When nurses are overworked or silenced, safety culture deteriorates, putting patients at risk **(Vaismoradi et al., 2020).**

Digital tools are revolutionizing how nursing teams collaborate and maintain patient safety, but their success depends heavily on inclusive leadership and effective implementation. Studies show that secure messaging platforms (e.g., TigerConnect or Vocera) reduce communication delays by 30%, enabling faster nurse-to-physician consultations during emergencies **(Liu, et al. 2019).** However, technology alone is insufficient nurses in hospitals with exclusive leadership report frustration when tools are imposed without training or feedback. For example, AI-driven predictive analytics can flag high-risk patients, but nurses in previous study noted these systems fail when leaders exclude frontline staff from design discussions. The integration of technology in nursing practice aligns with evidence-based practice (EBP) by promoting data-driven decision-making and improving care coordination. When guided by inclusive leadership, technological tools can support the implementation of EBP strategies that enhance patient safety and team performance. **(Elhabashy, et al. 2024).**

Inclusive leadership significantly enhances teamwork practices in healthcare settings by fostering an environment of trust, open communication, and psychological safety **(Fu et al., 2022).** When nurse leaders actively involve staff in decision-making, value diverse perspectives, and encourage collaboration, nurses feel more empowered to contribute their expertise. This leadership style reduces hierarchical barriers, allowing for smoother interprofessional teamwork, particularly in

high-stress areas like ICUs and emergency departments. Studies show that inclusive leaders are more likely to resolve conflicts constructively, ensuring that team members focus on patient care rather than workplace tensions. For example, a 2023 study by Oh et al. found that units with inclusive leaders reported 40% better teamwork scores compared to those with authoritarian leaders **(Oh, & Kim, 2023).**

Significance of the study:

In addition to the significant impact on individual patient outcomes, the broader magnitude of patient safety issues is reflected in global statistics. According to the WHO, unsafe care is among the top ten causes of death and disability worldwide, with 134 million adverse events annually in hospitals in low- and middle-income countries, leading to approximately 2.6 million deaths **(WHO, 2021).** These preventable events not only cause suffering but also impose a major financial burden due to longer hospital stays, added treatments, and legal costs. Common risks in nursing practice include medication errors, hospital-acquired infections, and communication failures, highlighting the urgent need to strengthen safety culture especially through leadership and teamwork **(Kuknor et al., 2025).**

Nurses play a central role in improving patient safety as the largest group of healthcare providers. Understanding how inclusive leadership and teamwork affect safety culture can help organizations develop strategies to reduce errors and enhance care quality **(WHO, 2021)**. Inclusive leadership fosters open communication and respect, making nurses feel valued and increasing engagement and performance. When nurses experience inclusive leadership, they are more likely to report mistakes and contribute to patient care improvements **(Kuknor et al., 2025).**

Effective collaboration helps ensure proper information flow, reduces miscommunication, and supports sound decision-making especially in complex environments. On the other hand, weak teamwork is linked to more errors and poorer outcomes. By exploring nurses' perceptions of teamwork, organizations can identify areas to strengthen and implement targeted training **(Nunes et al., 2021).** Importantly, this study examines the combined relationship between inclusive leadership, teamwork, and patient safety culture from nurses' perspectives. Since, nurses interact directly with patients, their insights are crucial in identifying safety risks early. Unlike earlier studies that addressed these variables separately or from leadership viewpoints, this research provides a comprehensive look at how they interconnect. Findings may guide hospital administrators, nurse leaders, and policymakers in developing better interventions and leadership training that reinforce teamwork and a culture of safety ultimately supporting safer and more effective healthcare delivery **(Lee & Seo, 2024).**

Aim of the study:

The present study aims to identify the relation among inclusive leadership, teamwork practices and patients' safety culture from nurses' perspective.

Research questions:

1. What is the level of inclusive leadership from nurses' perspective?
2. What is the level of teamwork practices from nurses' perspective?
3. What is the level of patients' safety culture from nurses' perspectives?
4. What is the correlation among inclusive leadership, teamwork practices and patient safety culture from nurses' perspectives?

Subjects and Method

Research Design:

A descriptive-correlational research design was utilized to accomplish the aim of this study.

Research Setting:

The study was conducted at critical care units and general departments of the Alexandria Main University Hospital (Miri Hospital). It is one of the oldest and most prestigious hospitals in Egypt. The hospital provides a range of specialized services, including several Intensive Care Units 20 units in addition to unit under construction or renewal, and multiple inpatient departments 60 departments such as internal medicine, surgery, pediatrics, and obstetrics and gynecology, making it an ideal setting for studying teamwork, leadership, and patient safety culture.

Research Sample:

A simple random sample of nurses were used to achieve study aim.

Sample size:

The total population at Alexandria Main University Hospital is **1200** nurses. The sample size was calculated using the following equation: Sample size was determined by using **Yamane (1976)**, formula to assess the sample size of staff nurses.

$n = N/ (1+N (e)^2)$

N= is the total number of staff nurses.

n = is the sample size.

e is coefficient factor = 0. 05.

1= is a constant value.

The sample size of staff nurse at Alexandria Main University Hospital is 1200 / $(1+1200\times (0.\ 05)^2 = 300$ nurses.

Sampling technique:

A simple random sample of 300 nurses was selected from critical care and general departments at Alexandria Main University Hospital. All 1200 nurses were listed and numbered, then 300 were randomly chosen using the ideal bowl method, ensuring equal selection chances for all.

Data collection tools:

First tool: Inclusive Leadership Questionnaire

It consisted of two parts.

Part 1: Personal data of staff nurses.

This part included age, sex, level of education in nursing, years of experience, work department and marital status.

Part II: Inclusive leadership Questionnaire:

Inclusive leadership questionnaire was developed by **Li (2021)** to assess level of inclusive leadership from nurses 'perspective. The tool consisted of (40 items) categorized into four dimensions, first dimension "the manager provides equal opportunity and fair treatment" (10 items). Second dimension was "the manager encourages integration and synergy" (18 items). Third dimension "the manager directly addresses fundamental needs" (9 items). Fourth dimension "the manager implements organizational diversity and inclusion related policies and programs" (3 items).

Scoring system:

This scale used a 5-point Likert scale that rating the studied nurses' responses as (1) Almost never, (2) Seldom, (3) Sometimes, (4) Often & (5) Almost always. The total score ranges from 40 to 200. The total grades for each item were summed up and then converted into a percentage score**.** They were classified into three level as the following. Low level: if the total score was less than 60%, from (40-119) points. Moderate level: if the total score was equal or more 60% to less than 75%, from (120 - 149) points. High level: if the total score was equal or more 75%, from (150- 200) points **(Li, 2021).**

Second tool: Mayo High Performance Teamwork Scale.

Mayo High Performance Teamwork Scale (MHPTS) is a validated instrument developed by **Malec et al., (2007),** to assess critical teamwork behaviors that influence team effectiveness, particularly in healthcare settings. Originally designed by the Mayo Clinic team, the MHPTS. The scale consists of (16 items) covering key dimensions of high-performance teamwork, including leadership, mutual support, communication clarity, coordination, adaptability, and situational monitoring. Item from (1 to 8) rated never/ rarely, inconsistently or consistently, Items 9-16 may be marked "NA (not applicable)" if no situations occurred in which these types of responses were required.

Scoring system:

This scale used a 3-point Likert scale that rating the studied nursas' responses as (1) Never, (2) Inconsistently, (3) Consistently. Additionally, the total score ranges from (16 - 48). The score was reversed in the negative statements. According to **Malec et al., (2007),** nurses' responses were calculated in the scoring system and classified into: Poor level: if the total score was less than 60%, from (16-28) points. Average level: if the total score was equal or more 60% to less than 75%, from (29 - 35) point. Good level: if the total score was equal or more 75%, from (36 - 48) points.

Third tool: SOPS Hospital Survey 2.0.

The Hospital Survey on Patient Safety Culture (SOPS) developed by the Agency for Healthcare Research and Quality ***AHRQ (2019*)**, to assess Patient Safety Culture from

nurses' perspective. It is an updated and refined version of the original SOPS instrument first introduced in 2004. It consisted of 10 composite dimensions, such as teamwork, communication openness, staffing and work pace, organizational learning, and response to errors (34 items). The application version consisted of 5 sections Work area (14 item), Supervisor/ Manager, or Clinical Leader (3 items), Communication (7 items), Reporting Patient Safety Events (3 items), Patient Safety Rating & hospital (7 items).

Scoring system:

This scale used a 5-point Likert scale that rating the studied nurses' responses as (1) strongly disagree, (2) disagree, (3) sometimes, (4) agree & (5) strongly disagree. The total score ranges from (34 -170). According to ***AHRQ (2019*)** nurses' responses were calculated in the scoring system and classified into three level as the followings: Poor level: if the total score was less than 60%, from (34-101) points. Average level: if the total score was equal or more 60% to less than 75%, from (102 - 127) points. Good level: if the total score was equal or more 75%, from (128 -170) points.

The instruments' validation:

Validity of the tools was tested through five experts in Nursing Administration, Faculty of Nursing, (Four experts from Menoufia University, and one expert from Ain Shams University) to review the relevance of the tools for clarity, relevance, comprehensiveness, understanding and applicability.

Reliability

The Cronbach's Alpha test was used to assess the internal consistency and homogeneity of the study questionnaires, and the results showed that inclusive leadership questionnaire demonstrated excellent internal consistency of (0.978), teamwork practices questionnaire demonstrated excellent internal consistency of (0.983) and patients' safety culture questionnaire demonstrated excellent internal consistency of (0.981).

Ethical considerations:

Official approval to conduct the proposed study was obtained from the Scientific Research Ethics Committee at the Faculty of Nursing, Helwan University. Participation is voluntary, with participants fully informed about the study and their role before signing informed consent. Ethical considerations included explaining the study's purpose and nature, the right to refuse to participate in the study, maintaining confidentiality of information without access by others without participant permission, and respecting ethics, values, culture, and beliefs.

Pilot study:

A pilot study was carried out on 10% (30) nurses to evaluate the clarity, applicability of the study instruments and to determine obstacles that may be encountered during data collection. It was helpful to estimate time that used in data collection. The data collection period was two months. No required modifications were done. So, the pilot study subjects were included in the main study sample.

Data collection Procedures:

Data were collected using a self-administered structured questionnaire translated into Arabic. After obtaining official approval, nurses were briefed on the study's purpose and procedures. Three questionnaires were distributed across all units over a two-month period (February–April 2025), during morning and afternoon shifts, averaging three days per week. Completion took 30–40 minutes, and responses were securely stored both electronically and physically.

Statistical analysis

Data entry and analysis were performed using SPSS statistical package version 26. Categorical variables were expressed as number and percentage while continuous variables were expressed as (mean ±SD). Percentage mean used to rank dimensions of inclusive leadership, teamwork practices and patient safety when their total score being not equal. Chi-Square (x2) in one sample used to compare differences between levels of inclusive leadership, teamwork practices as well as levels teamwork practices among the studied nurses. Crosstab Chi-Square (x2) was used to test the association between row and column variable of qualitative data. Pearson correlation and Scatter dot correlation was done to measure correlation between quantitative variables. Histogram distribution is good for showing general distributional

features of dataset variables. For all tests, a two-tailed p-value ≤ 0.05 was considered statistically significant, P-value ≤ 0.01 was considered highly statistically significant. While p-value> 0.05 was considered not significant.

Results:

Table (1) showed personal characteristics of studied nurses. As evident from the table, more than half (56.7%) of age's the studied nursing nurse were ranged from 30 < 40 years with a total mean of (37.69±6.6) and approximately four- fifths (80%) of the studied nursing personnel were a female with a male to female ratio= 0.25:1. Moreover, more than one-third (37.7%) of them were holding a pervious qualification of a technical degree. Additionally, more than half (56.7 %) had a year of experience in nursing field lasting from ten to less than fifteen years with a total mean of (16.95±6.3) respectively. The majority (88%) and more than half (55.0%) of them were married and working at ICUs.

Table (2): represented the dimensions of inclusive leadership as perceived by the studied nurses. It showed that, "Providing Equal Opportunity and Fair Treatment" gained a higher mean percentage of (78.76%) and ranked as the first dimension (best one) of the inclusive leadership as perceived by the studied nurses. While "Implementing Organizational Diversity and Inclusion Related Policies and Programs" perceived as the lower mean percentage of (61.73%) and ranked as the last dimension. In addition to the presence of statistically significant difference among dimensions of the inclusive leadership, at P = 0.000.

Figure (1) illustrated level of inclusive leadership as perceived by the studied nurses. It described that nearly to three-fifths (57.7%) of the studied nurse perceived their leaders as having a high level of inclusive leadership, while the minority (18%) of them perceived their leaders as having a low level. In addition to, presence of a highly statistically significant difference among levels of inclusive leadership.

Table (3) described the studied nurses' perception regarding teamwork practices. It showed that over three-fifths (63.3% & 61.7%) agreed that team members call attention to actions that may cause errors and respond to potential complications. Additionally, around two-thirds (66.7%, 67.7%, 68% & 67%) and over three-fifths (61.3%) sometimes agreed on practices such as repeating instructions, referring to protocols and checklists, addressing conflicts without losing situation awareness, persisting in seeking responses to prevent errors, and acknowledging unclear directions. The total mean score was 38.30 ± 8.6 (out of 48), with a highly statistically significant difference in teamwork practices among the studied nurses.

Figure (2) illustrates level of teamwork practices among of the studied nurses. It described three-fifths (60.7%) of the studied nurse perceived a good level of teamwork practices, while the minority (8.3%) of them perceived a poor level. In addition to, presence of a highly statistically significant difference between elements of teamwork practices.

Table (4): represented the dimensions of patients' safety culture as perceived by studied nurses. It showed that, supervisor, manager, or clinical leader gained a higher mean percentage of (80.87%) and ranked as the first dimension (best one) of the patients' safety culture among the studied nurses. While "Work Area" gained the lower mean percentage of (70.37%) and ranked as the last dimension. In addition to the presence of a statistically significant difference among dimensions of the patients' safety culture, at P = 0.000.

Figure (3) illustrated level of patients' safety culture as perceived by studied nurses. It described that nearly to three-fifths (58%) of the studied nurse perceived a good level of patients' safety culture, while the minority (9.7%) of them perceived a poor level. In addition to, presence of a highly statistically significant difference among levels of patients' safety culture.

Table (5): displayed that there was a highly statistically significant positive strong correlation among inclusive leadership, patient safety culture and teamwork practices among the studied nurses at r ranged from 0.937 to 0.969 & p = 0.000.

Table (1): Frequency distribution of the studied nurses regarding their personal data (n= 300)

Personal data		F	%
Age in year	▪ 20 < 30 years	30	10.0
	▪ 30 < 40 years	170	**56.7**
	▪ 40 < 50 years	100	33.3
	▪ **Mean ± SD**	**37.69±6.6**	
Sex	▪ **Male**	60	20
	▪ **Female**	240	**80**
Nursing qualification	▪ Diploma nurse	97	32.3
	▪ Technical institute	113	**37.7**
	▪ Bachelor	90	30.0
Years of experience	▪ < 5 years	17	5.7
	▪ 5 < 10 years	13	4.3
	▪ 10 < 15 years	170	**56.7**
	▪ ≥ 15 years	100	33.3
	▪ **Mean ± SD**	**16.95±6.3**	
Marital status	▪ Single	36	12.0
	▪ Married	264	**88.0**
Department	▪ ICUs	165	**55.0**
	▪ In-patients' department	135	45.0

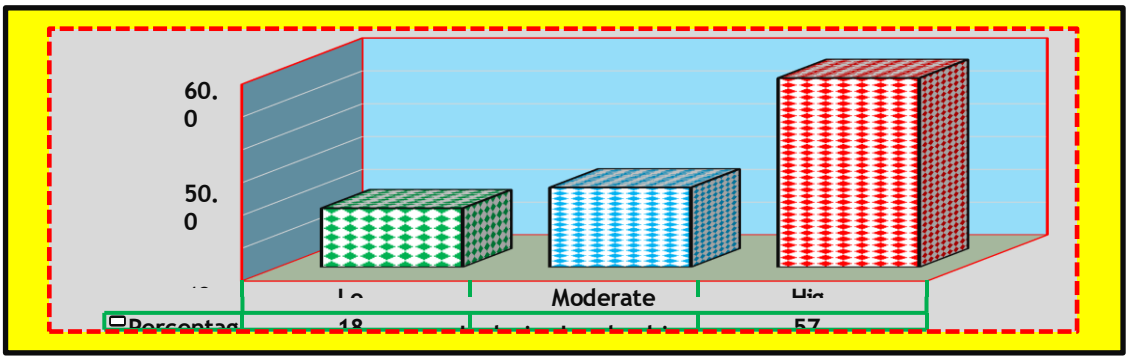
Table (2): Ranking the dimensions of inclusive leadership among of the studied nurses (n= 300)

Inclusive leadership dimensions:	Min	Max	$\bar{x}$ ± SD	Mean %	Rank	H	P value
▪ Providing equal opportunity and fair treatment	11	50	39.38±9.0	78.76	1st	57.1	0.000**
▪ Encouraging integration of & synergy	24	90	69.04±17.4	76.71	2nd		
▪ Directly addressing work	15	45	33.14±8.7	73.64	3rd		
▪ Implementing organizational diversity and inclusion related policies and programs	3	15	9.26±2.4	61.73	4th		
Total	**53**	**200**	**150.83±36.9**	**75.42**		-	-

*Significant p < 0. 05 Highly significant p < 0.

H: Kruskal Wallis Test

Figure (1): Percentage distribution of levels of inclusive leadership from studied nurses' perspective (n= 300)



χ^2=81.7, P= 0.000**

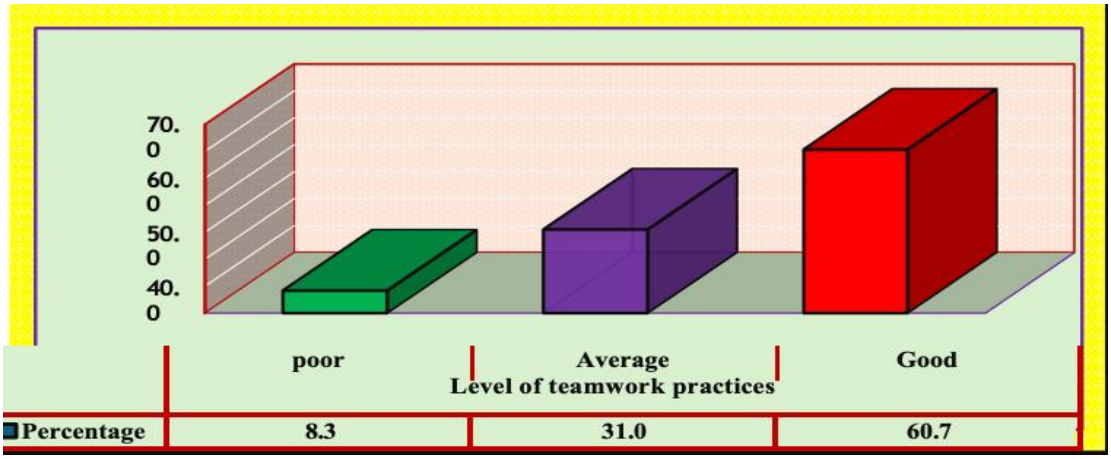
Table (3): Frequency distribution teamwork practices from studied nurses' perspective (n= 300)

Teamwork practices.	Never/ rarely		Inconsistently		Consistently		χ^2	P-value
	F	%	F	%	F	%		
▪ A leader is clearly recognized by all team members.	16	5.3	111	37.0	173	57.7	125.1	0.000*
▪ Leader assures maintenance of an appropriate balance between command authority and member participation.	19	6.3	201	**67.0**	80	26.7	171.6	0.000*
▪ Each team member demonstrates a clear understanding of his or her role.	24	8.0	106	35.3	170	56.7	107.1	0.000*
▪ Team prompts each other to attend to all significant clinical indicators.	13	4.3	126	42.0	161	53.7	119.7	0.000*
▪ Members are actively involved with Pt, they verbalize their activities aloud.	32	10.7	101	33.7	167	55.7	91.1	0.000*
▪ Team members repeat instructions to indicate that they heard them correctly.	25	8.3	200	**66.7**	75	25.0	162.5	0.000*
▪ Team members refer to established protocols and checklists.	10	3.3	112	37.3	178	59.3	143.3	0.000*
▪ All members of team are appropriately involved and participate in the activity.	13	4.3	203	**67.7**	84	28.0	184.3	0.000*
▪ Conflicts are addressed without a loss of situation awareness.	22	7.3	204	**68.0**	74	24.7	175.8	0.000*
▪ When appropriate, roles are shifted to address urgent or emergent events.	18	6.0	116	38.7	166	55.3	113.4	0.000*
▪ When directions are unclear, members acknowledge lack of understanding.	25	8.3	184	**61.3**	91	30.3	127.6	0.000*
▪ Acknowledge in a positive manner- statements directed at avoiding errors.	22	7.3	96	32.0	182	60.7	128.2	0.000*
▪ Team members call attention to actions that they feel could cause errors.	31	10.3	79	26.3	190	**63.3**	133.0	0.000*
▪ Team members respond to potential errors or complications.	25	8.3	90	30.0	185	**61.7**	129.5	0.000*
▪ Team members persist in seeking a response when statements aimed at avoiding errors.	22	7.3	201	**67.0**	77	25.7	168.1	0.000*
▪ Team members ask each other for assistance at overload.	29	9.7	89	29.7	182	60.7	118.9	0.000*
$\bar{x}$ ± SD (Total score of 48)	**18.84±3.2**		**31.94±0.81**		**44.22±3.5**		**233 H**	**0.000** **
	38.30±8.6							

*Significant p < 0.05 **Highly significant p < 0.01

H: Kruskal Wallis Test

Figure (2): Percentage distribution of levels of teamwork practices from studied nurses' perspective (n= 300)



χ^2=123, P= 0.000**

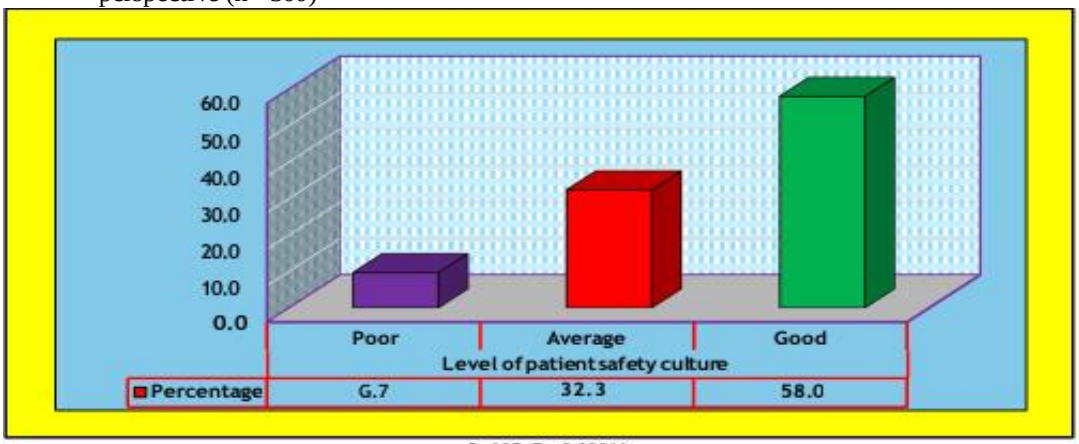
Table (4): Ranking the dimensions of patients' safety culture from studied nurses' perspective (n= 300)

Patients' safety culture:	Min	Max	$\bar{x}$ ± SD	Mean %	Rank	H	P value
▪ Work area	14	70	49.26±10.1	70.37	5th	6.3	0.04*
▪ Supervisor, Manager, or Clinical Leader	3	15	12.13±2.9	80.87	1st		
▪ Communication	7	35	25.47±5.2	72.77	3rd		
▪ Reporting Patient Safety Events	3	15	10.95±2.1	73.00	2nd		
▪ Patient Safety Rating & hospital	7	35	25.32±4.9	72.34	4th		
Total	**34**	**170**	**123.13±24.8**	72.43		-	-

*Significant p < 0.05 Highly significant p < 0.

H: Kruskal Wallis Test

Figure (3): Percentage distribution of levels of patients' safety culture from studied nurses' perspective (n= 300)



χ^2=105, P= 0.000**

Table (5): Correlation among inclusive leadership, patient safety culture and teamwork practices among the studied nurses (n= 300)

Variable	Inclusive leadership		Patient safety culture		Teamwork practices	
	r	P value	r	P value	r	P value
▪ **Inclusive leadership**	**1**		0.969	0.000**	0.937	0.000**
▪ **Patient safety culture**	0.969	0.000**	**1**		0.942	0.000**
▪ **Teamwork practices**	0.937	0.000**	0.942	0.000**	**1**	

*Significant p < 0.05 **Highly significant p < 0.01

Discussion

Inclusive leadership fosters teamwork and patient safety culture by creating a supportive environment where nurses feel safe to speak up, improving communication and collaboration**.** This enhances coordination and reduces errors**,** which strengthens patient safety through shared responsibility **(Hassan et al., 2024).** The current study was conducted to identify the relation among inclusive leadership, teamwork practices, and patient safety culture from the nurses' perspective.

Regarding, inclusive leadership dimensions, the present study findings demonstrated that "Providing equal opportunity and fair treatment" recorded the highest level, and "Implementing organizational diversity and inclusion-related policies and programs" recorded the lowest level. The presence of a statistically significant difference between these dimensions underscores the variability in the perception and implementation of inclusive leadership practices.

This finding suggested that nurses perceived their leaders as fostering an

environment of fairness and equity. This findings were supported by a study conducted at Zagazig University Hospitals by **Abdelaziz et al. (2023)** which demonstrated that the high level of perceived inclusive leadership and nurses' work engagement was contributed to the role of fair treatment in enhancing staff motivation and commitment. Also, these findings were congruent with **American Nurses Association (ANA 2025),** which reported that inclusive leadership behavior such as respecting diverse input, encouraging shared decision-making, and promoting open communication are central to build high-performing, synergistic nursing teams that are capable of delivering safe and high-quality care.

It is worth mentioning that the lower emphasis on implementing organizational diversity and inclusion-related policies may reflect systemic challenges within healthcare setting. Factors such as limited resources, lack of awareness, or insufficient training can hinder the effective execution of these policies **(Payne, 2023).**

The statistically significant difference between the dimensions indicates that while certain aspects of inclusive leadership are well-integrated into nursing practice, others require further development. Addressing the gaps in policy implementation is crucial for fostering a comprehensive inclusive environment. As noted by **Seminatore & Ealy, (2025),** When healthcare organizations base their policies on inclusive principles, they promote an atmosphere where inclusive leadership can flourish. This helps employees feel safe, respected, and encouraged to share their ideas.

However, these findings disagreed with **Elgazar et al. (2025)** who found that there were no statistical significant differences among inclusive leadership dimensions, and this has been attributed by the author to that nurses feel supported, shared in decisions, and empowered by hospital rules and policies at their working units. This conclusion gives additional support to the result of the current study.

Concerning total inclusive leadership, the findings of the current study revealed that nearly three-fifths of the studied nurses perceived that their leaders had a high level of inclusive leadership, while, the minority of them perceived a low level. In addition to presence of a highly statistically significant difference among levels of inclusive leadership.

From the researchers' point of view, these results can be attributed to the fact that hospital leaders practice democratic leadership styles which create a culture in which all nurses feel valued, empowered and involved in decision making. They provide a sense of belonging for all nurses, foster diverse thinking, and ensure that nurses are respected, heard, and engaged, which fosters collaboration and creativity among nurses and thus increases inclusive leadership.

These results were supported by **Lee (2023)** and **Du et al., (2024)** who found that nurses perceived a high levels of inclusive leadership. At the same vein, this result was constant with **Salman & Zoromba (2022)** and **Elgazar et al. (2025)** who found the total inclusive leadership got high mean percent scores among studied subjects. While a minority in the current study reported low levels of inclusive leadership perception, this resulted in a highly statistically significant difference.

From the researchers' point of view, this statistically significant difference in perceptions may be influenced by specific contextual or organizational factors. For instance, differences in leadership competencies, head nurses and staff nurses in the study setting vary in their educational backgrounds (e.g., bachelor's vs. diploma degrees), also, head nurses varied in their leadership abilities, values, and level of training in inclusive practices. Additionally, unit-specific dynamics such as workload and staffing pressures particularly in high-stress units like emergency and ICUs departments, may hinder the consistent practice of inclusive leadership, even among competent leaders.

These findings are encouraging, as they reflect a generally positive perception of leadership inclusivity. High levels of inclusive leadership are associated with improved team functioning, psychological safety, and nurse engagement. This finding was supported by **Abdelaziz et al. (2022)** at Zagazig University Hospitals", who reported that most of the

studied nursing staff perceived a high level of inclusive leadership behavior, and that most of them also demonstrated a positive attitude toward knowledge sharing.

On the other hand, these results were not consistent with **El-Sayed et al. (2018),** who conducted a study in Egypt which revealed that nurses perceived the level of inclusive leadership as moderate. Similarly, **Jin et al. (2022)** in China, their results indicated that nurses reported a low level of perceived inclusive leadership.

Regarding total level of teamwork practices, the current study findings revealed that, three-fifths of the studied nurses perceived a good level of total teamwork practices, while the minority of them perceived a poor level of teamwork practices. From researchers' point of view, these results may be due to presence of a supportive work environment, good leadership, and effective communication systems within the healthcare setting and interprofessional collaboration which leads to increasing teamwork.

These findings were agreed with **Ali et al., (2024)** who conducted a study about, the association between collaboration, team - effectiveness and work readiness among nurses and reported that around two-thirds of the nurses exhibited a high level of team effectiveness. Approximately one-fifth displayed a moderate level of effectiveness, whilethe minority of them showed a low level of effectiveness.

Moreover, this finding aligned with study by **Bragadóttir et al. (2023)** who found that high teamwork scores are often associated with improved nurse satisfaction and patient outcomes. The positive perception of teamwork may be influenced by a supportive environment, good leadership, or effective communication systems in the healthcare setting.

Likewise, a statistically significant difference was found in the levels of teamwork practices among the studied nurses which reinforced the notion that a majority of nurses view teamwork as a strong element of their work environment. Such a finding is consistent with **Kalisch, et al. (2010**), who reported that effective teamwork among nurses is associated with reduced medical errors, better workload management, and higher patient satisfaction. Additional, **Moussa et al. (2022**) who found that positive attitudes towards teamwork and less positive attitudes toward patient safety and collaborative team performance among nurses improves the medical care quality and patients' safety, decreasing the occurrence rate of adverse events.

Regarding patients' safety culture dimensions, the current study findings highlighted that "Supervisor, Manager, or Clinical Leader" dimension scored the highest mean percentage, while "Work Area/Unit" dimension received the lowest mean percentage. In addition to the presence statistically significant difference between dimensions of the patients' safety culture.

These findings were aligned with **Hazazi & Qattan (2021),** who found that the highest-rated dimensions of patient safety culture as perceived by staff, were "Teamwork Within and Across Units, Supervisors" and "Managers' Support for Patient Safety, and The Overall Perception of Safety". On the other hand, the lowest-rated areas were "Non-Punitive Responses to Errors, Open Communication, and The Frequency of Event Reporting. At the same vein, **El-Jardali et al. (2014)** who found dimensions with the highest positive score were "Organizational Learning and Continuous Improvement, and Teamwork within the Units, while Hospital Non-Punitive Response to Error and Staffing" considered areas for improvement.

The current result suggested that nursing leaders and clinical managers are actively engaged in reinforcing safety protocols, create a supportive climate and challenges within the local work environment, such as Workload, Staffing Issues, Communication breakdowns, or Environmental stressors, which could negatively affect perceptions of safety, which supported by **El-Sayed (2018)** who emphasized the positive influence of leadership support on fostering a safety culture, particularly in critical care settings.

Also, presence of a statistically significant difference between the dimensions confirms that not all aspects of safety culture are perceived equally by nurses. This suggests a need for targeted interventions to enhance the weaker areas, particularly focusing on improving unit-level communication and resource allocation. Overall, the findings underscore the critical role of leadership in promoting safety culture and

highlight the importance of a holistic approach that includes both managerial commitment and improvements at the unit level to achieve sustainable patient safety outcomes.

The current study findings revealed that nearly three-fifths of studied nurses demonstrated a good level of patient safety culture."This findings were consistent with **Almashad et al. (2025)**, who found that staff nurses demonstrated a strong patient safety culture, positive perceptions of their work environment, and a highly proactive attitude toward incident reporting. Also, **El-Sayed et al. (2018)** who found that the level of patient safety culture was considered to be high within the governmental and private units.

In contrast with the current findings, studies by **Kakemam et al (2021)** and **Ali et al. (2022)** who reported that nurses' perception regarding patient safety culture was low and showed a fragil patient safety culture in the majority of the domains.

Also, the current study findings revealed a highly statistically significant strong positive correlation among inclusive leadership, patient safety culture, and teamwork practices among the studied nurses. These findings highlight the crucial role of inclusive leadership in fostering a collaborative team environment and promoting a strong culture of patient safety.

This result was in the same line with several recent studies. For example, **Yousaf et al. (2022)** who confirmed that inclusive leadership helps improve the quality of care provided by healthcare teams through making team members feel included and valued. In the same vein, **Bornman & Louw (2023)** who linked inclusive leadership to better interprofessional collaboration, reducing miscommunication in high-risk units like ICUs and ERs. In simple terms, good inclusive leadership = better teamwork = safer patients.

This also supports the idea that inclusive leaders foster psychological safety among nurses, which reduces their fear of speaking up and increases their willingness to share suggestions and report errors, ultimately enhancing patient safety **(Lee et al., 2021),** Likewise, **Junwen& Libing (2025)** who emphasized that inclusive leadership significantly enhances workers' perception of safety and encourages proactive safety behaviors, creating a stronger culture of safety within high-risk work environments.

Conclusion:

The current study findings revealed that nearly three-fifths of studied nurses perceived a high level of inclusive leadership, while, the minority of them perceived a low level of inclusive leadership. In addition, three-fifths of studied nurses perceived a good level of teamwork practices, while, the minority of them perceived a poor level of teamwork practices. Moreover, nearly, three-fifths of studied nurses perceived a good level of patients' safety culture, while, the minority of them perceived a poor level of patients' safety culture. Furthermore, there was a highly statistically significant positive strong correlation among inclusive leadership, patient safety culture, and teamwork practices among studied nurses.

Recommendations:

Based on the findings of the study, the following recommendations are proposed for practical, educational and research level.

I. At practical level:

1. Provide training programs for newly hired staff nurses to facilitate their onboarding and improve their teamwork practice and work engagement.
2. Conduct the inclusive leadership training program for nursing managers to enhance their knowledge and improve organizational effectiveness.
3. Activate policies to improve the weakest areas of inclusive leadership through audits, accountability, and staff feedback.

II. At educational level:

1. Integrate inclusive leadership concepts into nursing curricula to build awareness of fairness, respect, and team integration.
2. Include simulation-based teamwork scenarios in nursing education to strengthen collaboration and error management skills.

3. Engage nursing students in interprofessional education activities that highlight shared responsibility and inclusive decision-making.

III. At research level:

1. Conduct further studies in different hospital settings to validate the relation between inclusive leadership, teamwork, and patient safety.
2. Perform future research on effect of inclusive leadership development programs on nursing practice and patient outcomes.
3. Promote academic research on the links between inclusive leadership, teamwork practices, and patient safety to expand the evidence base.

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