

## Leadership Style Exercised by Nurses in A Clinic in Barranquilla Colombia

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### Abstract

*Nursing leadership is not just about a position, but a mindset that contributes to other people. Nursing professionals should strive to influence the management of their professional and academic activities, taking initiative and assuming responsibility for changes in healthcare delivery. The objective is to determine the leadership styles practiced by nursing professionals in a clinic in Barranquilla, Colombia. According to the results of a quantitative, descriptive, and cross-sectional study, the population and sample consisted of 83 nurses working in a clinic in Barranquilla, Colombia. The coefficient of variation (CV) for this leadership style was 9%. Additionally, it was found that transactional leadership was slightly above the scale's average, with a mean of 0.661 and a variability of 16%. On the other hand, corrective-avoidant leadership was also slightly above the scale's average, with an average value of 0.607 and a variability of 35%. These results indicate that leadership exists among the studied nursing professionals, with transformational leadership being predominant. Additionally, a strong linear relationship is evident between the positive/organizational outcomes highlighted by the respondents and the variables assessing transformational leadership.*

**Keywords:** Leadership; Transformational; Transactional; Laissez faire; Nursing

### INTRODUCTION

The World Health Organization/Pan American Health Organization (1999), as written by Salas Segura & Zárate Grajales, recommends that nurses promptly participate in the development of health policies at the local, regional, and national levels, contributing their perspective from the grassroots of the healthcare system. Indeed, it's true that nurses are increasingly trained in areas of management, finance, and health program evaluation, allowing them to lead effective strategies to optimize population health. In this regard, ongoing education and training in health policy management are crucial for nurses to play an active role in decentralization and improving the health of their communities. Strengthening alliances among other healthcare system representatives, including nurses, is necessary to ensure comprehensive and quality care for the entire population.

Costa and Palucci (2003) emphasize the importance of nurses positioning themselves as leaders in healthcare, promoting person-centered care, care quality, disease prevention, and health promotion. Additionally, they

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highlight the need for nurses to acquire leadership, management, and teamwork skills to effectively contribute to improving healthcare services. In this context, nursing leadership not only refers to holding hierarchical authority positions but also involves influencing decision-making, driving changes in clinical practice, collaborating with other healthcare professionals, and actively participating in the formulation of public health policies.

The concept of leadership according to Weber (1947) underscores the idea that leadership is not limited to a title or formal position but rather is a mindset and a way to influence others. In the nursing context, this perspective is particularly relevant due to the fundamental role nurses play in patient care and healthcare service improvement. Additionally, nurses should be willing to take initiative and seek opportunities to enhance their skills and knowledge in healthcare. This includes participating in continuous education programs, research, conferences, and seminars to stay updated on the latest trends and advancements in nursing.

The assertion by Cainicela & Palomino (2017) underscores the importance of nursing leadership as a determining factor in improving the quality of patient care and maintaining a collaborative and efficient work environment. It also emphasizes the importance of fostering the professional development of team members. Nurse leaders should serve as role models for their peers, demonstrating responsibility for patient care, professional ethics, and integrity in their work.

Quezada, Illesca & Cabezas (2014) express that nursing leadership is essential for ensuring the quality of healthcare services and promoting an inclusive, equitable, and effective healthcare system. Therefore, it is crucial for nurses to develop leadership competencies to address current and future challenges.

On the other hand, the International Council of Nurses (ICN) provides workplace guidance that emphasizes nursing leadership; cited by Rolpe (2011), the American Association of Nurse Executives considers leadership as an important skill due to its involvement in public policies, welfare planning, team management, data analysis, and resource distribution.

Similarly, the National Association of Nurses of Colombia (ANEC) advocates for promoting professional management as a key tool for nurses to perform well in their workplace. The Association of Nursing Faculties of Colombia (ACOFAEN) expands the scope of nursing and strengthens the power of teamwork. As with all of the above, as we approach the nursing profession, it's important to consider issues within the profession and how, through academia, we can build a solid foundation for nurses to become change leaders in their institutions, in health promotion, and teamwork, which is a means to achieve management strategies in performance of duties.

According to the Ministry of Health and Social Protection in the "Profile and Competencies in the Work Environment" (2016) Law 266 of 1996, nursing is defined as "a liberal profession and a social discipline". One of the traits of the professional portfolio is management and leadership skills; it provides nursing staff with professional experience in management, processes, planning, and policy formulation, forming adequate leadership in nursing, administration, teaching, epidemiology, research, and communication methods. Nursing leadership is then related to the nursing staff's ability to establish, develop, facilitate, and evaluate healthcare system change processes and promote professional education in this change.

Another important aspect is leadership style, such as the transformational style, which has been highlighted in recent years for its positive impact on organizational success. The leadership style described by Cotrina & Gutiérrez (2018) aligns with what is known as transformational leadership. This approach is characterized by inspiring and motivating team members to achieve ambitious goals and contribute to the organization's growth and future success. Transformational leadership, as described by theorists like Bernard Bass and supported by researchers like Quispe (2015) and Cruz, Rodea (2014), is a leadership style that focuses on stimulating individuals to reach their maximum potential and work toward common goals through emphasis on personal and moral development.

The thesis by Cárdenas, Vela, and Tovar (2017) highlights the importance of transformative leadership in nursing management within the context of the National University Hospital of Colombia. Here, it is emphasized

that nursing staff not only constitute the largest group within healthcare institutions but also play key roles in health, education, and science.

Transactional leadership is based on an exchange system between the leader and collaborators, where compliance with established standards is rewarded and non-compliance is punished. It is often used in companies where employees are expected to achieve certain goals, and performance is rewarded. This leadership style is particularly effective in organizational environments that operate according to established rules and processes, where efficiency and compliance are essential (Bracho, García, 2013). Likewise, transactional management is based on the exchange of benefits and punishments according to employee performance, with the aim of maintaining the smooth flow of normal operations. It is considered functional and effective but may limit strategic development and the ability to inspire employees toward broader goals (Huacachino, Castillo, 2019).

Laissez-faire leadership is described by the lack of evidence of active or directive leadership, the absence of leadership responsibilities, little or no interference in group activities, and a passive and non-participatory attitude by leaders. This leadership style can lead to a lack of direction, cohesion, and effectiveness within the team. (Cuadrado, et al., 2003). Unlike transactional leadership, this laissez-faire style is not beneficial for companies since the leader does not assume responsibilities or make important decisions (Quenta y Silva 2016).

The statement emphasizes the crucial importance of nursing leadership within healthcare institutions, emphasizing its role in ensuring the provision of high-quality services aligned with established principles and regulations. However, it also points out a common problem in some healthcare organizations: the lack of effective leadership. However, it is regrettable to observe that some organizations overlook established norms due to lack of management. People do not take well to orders from superiors, which generates confusion and leads to process and procedure delays, lack of motivation, lack of teamwork, absenteeism, and turnover, among other problems, regardless of the length of employment of staff.

It is essential for healthcare organizations to recognize the importance of nursing leadership and promote an environment where effective communication, motivation, teamwork, and compliance with established standards are encouraged. This way, quality service can be provided effectively and efficiently, meeting the needs of clinic users or patients.

The study is of utmost importance in the clinic because it aids decision-making by recognizing the importance of leadership styles in nursing professionals, ensuring compliance with applicable regulations and the institution's mission. The objective of this study is to be a comprehensive and high-complexity care center, committed to user satisfaction at the national and international levels through humane and responsible service. Also, the profession of human skills training is necessary to ensure proper, efficient, and effective care, based on continuous research and knowledge updating and based on technical-scientific, academic, ethical, and moral criteria. It is important that nursing staff are aware of the various management practices that can be applied to effectively lead nurses. Likewise, managers have the responsibility to supervise management and situations, rather than simply giving orders, so goals should not be lost sight of but rather establish a conducive context where employees can recognize, accept, receive support, and support from others.

Therefore, the objective of this research is to determine the type of leadership exercised by nursing professionals in a fourth-level clinic in Barranquilla, Colombia. This information will be valuable for improving leadership quality in nursing and, ultimately, for ensuring quality care and satisfaction for clinic users.

## **MATERIALS AND METHODS**

The study design was quantitative, descriptive, and cross-sectional. The population and sample consisted of 83 nurses working in various departments within the clinic. Simple random sampling was employed, selecting all nurses working during the data collection period, considering their department and shifts. Inclusion criteria included specific job roles and work experience in the institution, while exclusion criteria included being on probation or on vacation during the instrument application.

The instrument used, the "Modified Multifactor Leadership Questionnaire (abbreviated MLQ 5X) by B. Bass and B. Avolio," is a recognized tool for assessing leadership styles in the workplace. Developed by Bass and Avolio, this questionnaire has been widely used in leadership research across various fields, including nursing.

The questionnaire comprised two sessions:

1. First session: This session collected socio-demographic and work-related data from the participants, such as age, gender, professional level, undergraduate institution, tenure in the institution, area of work, time spent in the assigned area, and work shift. These data provided context and allowed for identifying possible correlations between socio-demographic variables and leadership styles.
2. Second session: In this session, the Multifactor Leadership Questionnaire (MLQ) in its short 5X format was administered. This questionnaire consisted of 82 items that assessed transformational, transactional, corrective-avoidant leadership styles, and positive/organizational consequences of transformational leadership. Each item had five response options ranging from "Never" to "Always," allowing participants to indicate how often they experienced certain leadership behaviors or attitudes in their work environment.

For data processing, permission was sought via email from Dr. Elizabeth Martínez, the coordinator of human talent at the fourth-level clinic in Barranquilla, Colombia, attaching the research project, informed consent, and instrument. A pilot test was then conducted at the clinic in Barranquilla, involving five nurses with specified roles who provided some suggestions, leading to adjustments in the instrument. It's essential to consider suggestions, considerations, and recommendations from the institution, as well as relevant government regulations and norms when conducting any research in healthcare, such as Resolution No. 008430 of October 4, 1993, from the Ministry of Health of the Republic of Colombia, which establishes scientific, technical, and administrative standards for health research in Colombia, from which it was determined that this study represented minimal risk to its participants. The Declaration of Helsinki and the International Ethical Guidelines for Health-Related Research Involving Human Subjects of the Council for International Organizations of Medical Sciences (CIOMS) and the World Health Organization (WHO) were also taken into account.

Likewise, the researcher signed a confidentiality agreement. Informed consent was requested to participate in the study and for the process of applying the survey as well as processing them to remove any information that would allow the identification of the patient, each one was numbered with a consecutive to guarantee the anonymity of the participants.

Data collection utilized the MLQ instrument. Each participant completed the instrument after receiving an explanation from the researcher and trained personnel. An intimate environment without distractions and in silence was provided. Data collection took place over two months, visiting the site three times a week and interviewing nurses from various departments. Each interview lasted approximately 20 minutes.

For the analysis of the collected data, a database was developed, recording significant variables. These data were processed in Excel 2010, followed by statistical analysis. Survey responses were processed for data standardization and descriptive analysis using a statistical method called TOPSIS, a multicriteria decision-making method used for selecting alternatives and determining the distance between obtained and ideal scores. After conducting TOPSIS analysis, a method involving tests for differences in means was used to determine the presence of leadership. These tests determined the statistical significance of the results obtained.

## **RESULTS**

Table 1 shows that the majority of the respondents were between 22 to 26 years old, followed by 27 to 31 years old, and the predominant gender was female. Additionally, the predominant professional level is General Nursing, and most individuals have been working in their profession for many years. The most common type of contract is for service provision, and the most worked shift is continuous, followed by the morning shift. The predominant current position is floor manager, and individuals have been associated with the clinic under study for several years. These demographic and work characteristics may have implications for the distribution of responsibilities, work environments, and professional development opportunities in the field of nursing.

In Table 2, it is noted that Transformational Leadership has a coefficient of variation (CV) value of 9%, indicating low dispersion in the respondents' scores on this variable. This suggests a notable consistency in how respondents rate Transformational Leadership compared to other types of leadership evaluated.

Furthermore, when comparing the average value and the median of the Transformational Leadership variable (0.831 and 0.837 respectively), it is observed that they do not differ much. This indicates that the distribution of scores is quite symmetrical around the mean, which is consistent with the low variability observed in the coefficient of variation. In summary, the findings suggest that Transformational Leadership has notable consistency in respondents' scores and low relative variability compared to other types of leadership evaluated. This may indicate a more uniform or coherent perception among respondents about this particular leadership style.

Transactional leadership is slightly above the scale's average, with a mean of 0.661 and a variation of 16%, corresponding to a standard deviation of 0.106. On the other hand, corrective-avoidant leadership is slightly above the scale's average, with a mean of 0.607 and a standard deviation of 0.213. It is important to note that the lowest score for this variable is 0 and the highest is 0.891. This derivative type exhibits high variability, with a coefficient of variation of 35%.

These data suggest that both transactional and corrective-avoidant leadership are present in the studied context, but with different levels of average and variability. Transactional leadership is described as focusing on goal achievement and contingent rewards, while corrective-avoidant leadership focuses on correcting and avoiding errors.

In Table 3, the results of the TOPSIS study are shown, where a global rating was conducted for each respondent at the level of macro-variables. When analyzing the distribution of the global scores, it is noted that the mean and the median are very similar, with values of 0.761 and 0.764 respectively. Additionally, it is highlighted that there is not a high variability in these ratings, with a coefficient of variation of 7%. These results suggest that there is a leadership role in the surveyed group, as the global ratings are centered above the scale's mean, which is 0.5.

In Table 4, it can be concluded that transformational leadership stands out among the surveyed professionals. The mean and median of the overall ratings for this type of leadership are much higher than other forms of management. Additionally, transformational leadership has the least difference in ratings, with a coefficient of variation of 15%.

When analyzing quartiles 1 and 3, it can be inferred that the majority of transformational leadership scores are above 0.792, given that the ranges for the first quartile for transactional leadership and corrective leadership are 0.603 and 0.542, respectively. This supports the strength of these leadership styles. The analysis of the upper limit shows that transformational leadership is very similar to transactional leadership but obtains higher scores. However, transformational leadership has fewer limitations than other types of leadership.

In Table 5, the results of hypothesis tests comparing the means of the three leadership samples—transformational, transactional, and corrective—are displayed. With a p-value less than 0.05 and a confidence level of 95%, we can say that there is a significant difference between transactional and corrective leadership concerning transformational leadership. This indicates that transformational leadership is statistically superior and predominant compared to the other two leadership styles. Therefore, it is concluded that transformational leadership is exercised more effectively by the surveyed nursing professionals.

For corrective and transactional leadership, no significant differences were found between the two. This means that the means of both types of leadership are statistically equal. However, it is important to note that, although there are no significant differences, transformational leadership remains predominant and is exercised more effectively.

In Table 5, the results of hypothesis tests comparing the means of the three leadership styles—transformational, transactional, and corrective—are presented. With a p-value less than 0.05 and a confidence level of 95%, we can conclude that there is a significant difference between transactional and corrective leadership concerning

transformational leadership. This suggests that transformational leadership is statistically superior and more prevalent compared to the other two leadership styles. Therefore, it can be inferred that transformational leadership is more effectively practiced by the surveyed nursing professionals.

As for corrective and transactional leadership, no significant differences were found between them. This implies that the means of both types of leadership are statistically similar. Nevertheless, it's worth noting that, despite the lack of significant differences, transformational leadership remains dominant and is exercised more effectively.

Figure 1 illustrates a direct correlation between the quality of clinical leadership and positive organizational outcomes. As the leadership skills of nurses strengthen, better management results are observed. This suggests that strategies and programs aimed at enhancing these clinical staff skills can be effective at the organizational level.

## **DISCUSSION**

According to the characterization of sociodemographic variables in the study conducted at a healthcare institution in Barranquilla, Colombia, it was identified that 36% of the surveyed population was between 22 and 26 years old, while 28% were between 27 and 31 years old. 82% of the respondents were female, while 18% were male. These results are similar to a study conducted by Quenta Valdez & Silva Barreda in 2016, where it was found that the predominant ages were between 25-35 years old, and the female gender was represented at 99.35%, while the male gender was at 0.65% (p. 54).

Regarding the professional seniority of nurses, 83% had several years of experience in the profession. Regarding the type of employment relationship, 55% of nurses are dedicated to service provision, with only 1% having indefinite contracts. These results are similar to a study conducted by Bueno & Orozco in 2019, where it was found that 37.1% of the respondents had between 0 and 4 years of tenure in the institution, temporary employees represented 34.5%, and contracted employees represented 22.2%. About the professional level of nurses, it is evident that 93% are general nurses. This differs from a study conducted by García, Maldonado, Castillo & Martel in 2021, where it was found that 41% of the respondents had completed a master's degree (p. 10).

Regarding the most worked shift by nurses, it was found that 84% work on rotating shifts and 8% on morning shifts. This aligns with the study by Pérez Robles in 2011, where it was found that the most active shift is the morning shift, representing 37%. Considering the time they have been working in their assigned position at the clinic, 59% have worked for several years. This is similar to a study by Quenta Valdez and Silva Barreda from 2016, which found that 41.18% had between 1 and 10 years of work experience.

When determining the leadership styles exercised by nursing professionals in a clinic in Barranquilla, Colombia, it was found that the predominant style is transformational leadership, with a coefficient of variance (CV) value of 9%. This aligns with the study by Al-Yami, Galdas & Watson in 2018, where it was also found that transformational leadership is the most prominent and has a significant influence on organizational commitment. These results support what Cotrina & Gutiérrez argued in 2018, that transformational leadership is better for organizational success because it encourages people to work hard to achieve common goals and promotes personal and moral development. It is crucial to highlight that transformational leadership is characterized by focusing on human needs, cooperation, collaboration, and personal development as a goal to achieve objectives. This aligns with the idea that transformational leadership is favorable for well-being in the institution, as mentioned by Quispe in 2015.

Detailing the values of transformational leadership, it is observed that they are above the mean value of the scale (0.5), with the maximum possible value being 1 (high rating) and the minimum value being 0 (lowest rating). It is important to note that the minimum score for this index is equal to 0.634, which is above the average scale. This result is similar to the study by Valbuena-Durán, Ruiz Rodríguez, & Páez in 2021, where it was identified that the predominant leadership styles were transformational (average 3.43) and transactional (3.40). This type of leadership connects with most healthcare professionals, mainly nursing staff, as they are the ones who assume care management and team leadership in care and strategic processes.

As for transactional leadership, it is observed that the mean value is 0.661 and the standard deviation is 16%, which is slightly above the average scale of 0.106 standard deviation. This result is consistent with the study by Sfantou, Laliotis, Patelarou, Sifaki-Pistolla, Matalliotakis, and Patelarou in 2017, where transactional leadership was evaluated in relation to leadership styles, behaviors, perceptions, and practices. Furthermore, it is evident that patient satisfaction increased when managers adopted a transactional leadership style. However, it is essential to consider that this type of leadership may be incomplete in organizational exit situations, as it does not adequately respond to changes.

The corrective-avoidant leadership style is above the mean of the scale, with an average value of 0.607 and a standard deviation of 0.213. There is high versatility in this type of leadership, with a variation figure of 35%. These data coincide with the study by Valbuena-Durán, Ruiz Rodríguez, and Páez (2021), where employees perceived the corrective-avoidant leadership style less, with an average rating of 2.10. Another study by Zambrano and Palma-Lozano (2018) identified that this leadership style is not the most used by nursing staff in prevention and promotion areas of health network establishments in Huánuco. This type of leader avoids influencing subordinates, evades managerial responsibilities, and lacks confidence in their own leadership abilities. Additionally, they tend to delegate too many responsibilities to employees, do not establish clear goals, and do not help the team make decisions.

Regarding the distribution of overall scores, it is observed that the mean and median (0.761 and 0.764) are very similar, and do not differ much ( $CV=7\%$ ). This suggests that the group of respondents has a leadership position, as the values are centered above the mean of the scale (0.5). Authors like Cárcamo-Fuentes & Rivas-Riveros also obtained similar results in transformational leadership followed by transactional in nursing professionals. However, in the study by Moon, Van Dam, and Kitsos (2019), it was found that transformational leadership was more dominant than transactional. This may be due to differences in the type, function, context, climate, and culture of the organization and its structure. In summary, the results indicate that transformational leadership and transactional leadership are leadership styles present in the group of surveyed nursing professionals. These leadership styles may have different manifestations and be influenced by various contextual factors.

The predominance of transformational leadership among the surveyed professionals is evident, with significantly higher mean and median values than other types of leadership, and less variability in evaluations (15%). When analyzing quartiles 1 and 3, it can be concluded that most transformational leadership scores are above 0.792, supporting the strength of this leadership style. In contrast, quartile 1 for transactional and corrective leadership is between 0.603 and 0.542 respectively. These data coincide with the study by Méndez, Reyes Alfaro, Castillo Saavedra, Coronel Vega, Cabanillas Ñaño & Salas Sánchez (2023), where transformational leadership scored the highest with 61.7%, although close to transactional leadership with 28.7%, but with a lower limit. This finding is encouraging for the level IV clinic in Barranquilla, Colombia, as transformational leadership stimulates transformational practices related to organizational culture change. This leadership style motivates and inspires followers to go beyond routine, increasing their satisfaction, commitment, and creating new leaders.

When conducting hypothesis tests and comparing the means of the three samples (transformational, transactional, and corrective-avoidant), significant differences were found between transformational leadership and the other two types of leadership. Transformational leadership was the predominant one and the one exercised most effectively by nursing professionals. On the other hand, no significant differences were found between transactional and corrective-avoidant leadership. These results coincide with previous studies by Méndez, Reyes Alfaro, Castillo Saavedra, Coronel Vega, Cabanillas Ñaño & Salas Sánchez (2023) that also identify transformational leadership as the highest-rated and most exercised by nursing professionals. Transformational leadership is determined by motivating and inspiring followers, increasing their satisfaction and commitment, and creating new leaders. In the healthcare environment, leadership is crucial for the success of an organization, especially in the case of nursing professionals who play a leading role in continuous improvement of care and organizational culture change.

Transformational leadership has several positive consequences at the organizational level. According to the results of a study, the average responses in the control group ranged from 4.166 to 4.548, while the consequences ranged from 4.175 to 4.515. Additionally, it will be observed that the variability in the group of leadership variables was slightly lower than the value of the variables of the consequences, with coefficient of variation values of approximately 10% and 12% respectively. This indicates that there is a direct relationship between clinical management profiles and positive organizational effects. Greater positive results at the organizational level are achieved when nursing leadership skills are strengthened. This suggests that strategies or plans related to improving these skills in clinical staff will bring organizational benefits. These results are similar to a study by Jodar and Solá in 2015, where a relationship between leadership styles and positive organizational outcomes was also found, with transformational leadership most strongly associated with satisfaction and performance indicators.

It is important to highlight that transformational leadership is characterized by generating profound changes in the way each business role is understood. This type of leadership is closely related to employee satisfaction, effectiveness, and motivation, as well as organizational culture. Additionally, in the current context of globalization, opting for a change-focused leadership approach is key to adapting and surviving in a competitive environment; that is, transformational leadership has positive consequences at the organizational level, such as increased employee satisfaction, effectiveness, and motivation, as well as a positive impact on organizational culture. Strengthening leadership competencies in nurses can generate organizational benefits. These results are consistent with other studies that have found a relationship between leadership styles and positive organizational outcomes.

## CONCLUSION

The type of leadership exercised by nursing professionals in a level IV clinic in the city of Barranquilla was characterized as young and female. Professionals have little work experience, with tenure at the institution ranging from 0 to 4 years. The predominant type of employment is through service provision, and contracts are mostly temporary. The most common professional level is that of general nurse, and the most worked shifts are rotating shifts and morning shifts.

According to the research results, it was established that there is leadership among the nursing professionals under study, with the predominant leadership in these professionals being transformational leadership, significantly different from transactional and corrective styles. That is to say, this type of leadership has proven to be effective, as the ratings obtained by nursing professionals in each type of leadership are above the mean of the rating scale.

Based on the findings and recommendations from the consulted sources, it is suggested that universities develop and teach strategies from the classroom to foster leadership in nursing students. These strategies should include qualities and attributes necessary to be a leader, as well as the application of various leadership theories. It is important for nursing students to demonstrate interest and commitment to participate in leadership courses or training. They should respond with quality and coherence to all situations that denote leadership, and not be afraid to take on administrative or managerial positions in the future. In conclusion, it is suggested that universities include leadership development in the curriculum of nursing students. Students should show interest and commitment to learning about leadership, and nurses should exercise leadership in their roles and constantly update themselves in this area.

## Supplementary Materials

**Table 1. Sociodemographic Data of Leadership Styles Exercised by Nurses in a Fourth-Level Clinic in Barranquilla, Colombia.**

Criteria	Fr	%
<b>Age</b>		
22- 26	30	36%
27- 31	23	28%

*Leadership Style Exercised by Nurses in A Clinic in Barranquilla Colombia*

32- 36	20	24%
37- 41	6	7%
42- 46	2	2%
47- +	2	2%
Total	83	100%
<b>Genre</b>		
Female	68	82%
Male	15	18%
<b>Professional level</b>		
General nurse	77	93%
Specialist	6	7%
Masters	0	0%
Doctorate	0	0%
<b>Professional tenure</b>		
Months	13	16%
Years	69	83%
No specified / No response	1	1%
<b>Contract type</b>		
Contract	35	42%
Named or permanent	1	1%
Service provision	46	55%
No specified / No response	1	1%
<b>Shift distribution</b>		
Morning	7	0,08
Afternoon	1	0,01
Night	2	0,02
Continuous	70	0,84
No specified / No response	3	0,04
<b>Work area</b>		
Floor charge nurse	63	0,76
ICU charge nurse	17	0,2
Head or nursing department	2	0,02
No specified / No response	1	0,01
<b>Tenure at the clinic</b>		
Months	25	0,3
Years	57	0,69
No specified / No response	1	0,01

**Source:** Survey conducted to nurses in a fourth-level clinic in Barranquilla, Colombia.

**Table 2. Leadership Existence Among Nurses in a Fourth-Level Clinic in Barranquilla, Colombia**

	TOP_Transformational	TOP_Transactional	TOP_Corrective
MAX	1,000	0,950	0,891
MIN	0,634	0,294	0,000
AVERAGE	0,831	0,661	0,607
MEDIAN	0,837	0,649	0,671
STANDARD DEVIATION	0,076	0,106	0,213
CV	9%	16%	35%

Source: Survey conducted to nurses in a fourth-level clinic in Barranquilla, Colombia.

**Table 3. Summary of TOPSIS Global Ratings on the Existence of Leadership in Nursing in a Fourth-Level Clinic in Barranquilla, Colombia**

	TOP_global
MAX	0,898
MIN	0,577
AVERAGE	0,761
MEDIAN	0,764
STANDARD DEVIATION	0,057
CV	7%

Source: Survey conducted to nurses in a fourth-level clinic in Barranquilla, Colombia.

**Table 4. Summary of Descriptive Statistics for TOPSIS Ratings in Each Leadership Style Exercised by Nurses Working in a Fourth-Level Clinic in Barranquilla, Colombia**

	TOPSIS_Transformational	TOPSIS_Transactional	TOPSIS_Corrective
Mean	0,821	0,653	0,612
Median	0,837	0,647	0,681
Standard deviation	0,119	0,128	0,216
Quartile 1	0,792	0,603	0,542
Quartile 3	0,868	0,726	0,752
Interquartile range	0,076	0,123	0,209
Coefficient of variation (%)	15%	20%	35%
Upper limit (outliers)	0,982	0,911	1,065
Lower limit (outliers)	0,678	0,418	0,228

Source: Survey conducted to nurses in a fourth-level clinic in Barranquilla, Colombia.

**Table 5. Probability values for mean test**

Test: equality of means	P - Valor
Transformational - Transactional	<2,2E-16
Transformational - Corrective	2,76E-14
Corrective - Transactional	0,136

Source: Survey conducted to nurses in a fourth-level clinic in Barranquilla, Colombia.

**Table 6. Summary of variables associated with transformational leadership and consequences of transformational leadership**

	Transformational leadership					Positive / Organizational consequences		
	2.1 Intellectual stimulation	2.2 Behavioral idealized influence	2.3 Inspirational motivation	2.4 Attributed idealized influence	2.5 Individualized consideration	5.1 Satisfaction	5.2 Effectiveness	5.3. Extra effort
MAX	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
MIN	3,000	3,625	3,875	3,286	3,000	2,800	3,000	2,167
AVERAGE	4,166	4,481	4,548	4,539	4,405	4,515	4,396	4,175
MEDIAN	4,125	4,500	4,625	4,571	4,500	4,600	4,417	4,167
STANDARD DEVIATION	0,429	0,351	0,376	0,367	0,515	0,445	0,492	0,568

CV	10%	8%	8%	8%	12%	10%	11%	14%
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Source: Survey directed to nurses in a healthcare institution in Barranquilla, Colombia 2022-1.

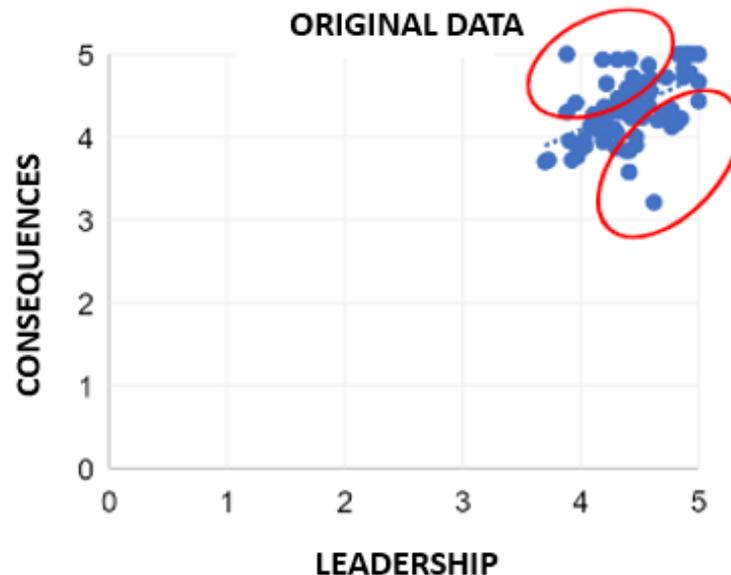


Figure 1. Relationship between the variable "Transformational Leadership" and "Organizational Consequences"

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None to declare.

### Conflicts of Interest

None to declare.

### Author Contributions

L.A.G.E.: Research, conceptualization, resources, writing of the original draft, data analysis; V.V.: Thesis advisor, manuscript reviewer of the original draft; D.P.R.: translator of the manuscript into English; M.A: review and editing of the manuscript, review of coincidences, results; N.B.G.: Conceptualization, supervision, project management; I.R.T.: Research, resources, writing the original draft; V.F.M.: Collection of information, writing of the manuscript.

Additionally, all authors contributed to validation, formal analysis, review and editing of the manuscript, as well as data visualization.

We confirm that neither the manuscript nor any of its contents are currently under consideration for publication or published in another journal.

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