Leader-Member Exchange (L-MX) Style of first-line Nurse Managers and its relationship with Work Engagement from Nurses' Perspective

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Abstract

Background: The Leader-Member Exchange (LMX) is one of the most prominent theories that deal with the dual relationship between a leader and subordinates. It has gained a lot of attention from researchers because of its consequences on employees' work engagement. **Aim**: The study aimed to identify the leader-member exchange (LMX) style of first-line nurse managers (FLNMS) and its relationship with work engagement from nurses' perspective. **Setting:** The study was conducted at Alexandria's main university hospital in all intensive care units (N=15), and critical care units (N=10). **Subjects**: All nurses (n = 300) working at Intensive care units (N=230) and critical care units (N=70) who have direct contact with patients, provide direct and indirect care to them, with work years of experience not least one year. **Tools**: Two tools were used to collect the data; the first tool was the Multidimensional Model of LMX (LMX-MDM) to measure nurses' perception of the leader-member exchange relationship. The second tool was the Utrecht Work Engagement Scale (UWES) to assess the work engagement level among nurses from their perspective. **Results:** The study findings show a strong positive relationship between employees and managers with a mean and percent score of 80.97 ± 17.71, which significantly influences work engagement. The "Professional Respect" dimension received the highest mean and percent score of (83.25 ± 19.56) followed by the "Loyalty" dimension with a mean and percent score of (80.81 ± 19.47), while the "Contribution" dimension has a slightly lower percent score (79.17 ± 19.45). Also, the overall perception of nurses towards their work engagement was positive, with a mean score of 44.83 ± 6.25 and a mean percent of 81.85 ± 18.40. The mean percentage score for vigor was the highest at $81.08\% \pm 20.27$, followed by the dimensions of dedication and absorption.80.50 ± 19.51. **Conclusion**: The study underscores the importance of first-line nurse managers' leader-member exchange (LMX) style and its significant relationship with work engagement from the nurses' perspective. This emphasizes the need for nurse managers to cultivate respectful and appreciative relationships with their staff to boost engagement levels. **Recommendations**: Training nurse leaders in communication and relationship-building skills can help create a more engaging workplace culture, motivating nursing staff to participate in organizational initiatives.

Keywords:

First-line nurse manager, Leader-member exchange, engagement, Nurse perspective work Background

Introduction

Healthcare organizations are increasingly faced with challenges due to an increase in technological change, workforce diversity, and global competition. Leaders and members must work together to solve these issues and maintain competitive advantages in the healthcare market (Adebesin,2021). Additionally, nursing is a dynamic career, and the most extensive team of workers in a healthcare organization plays a vital function in health leadership and policymaking while retaining traditional caring skills. To achieve these goals, effective leadership is needed for each organization to succeed and is also considered an asset for the agency, which is vital in ensuring high-quality care and patient safety and facilitating tremendous staff improvement (Cherian & Karkada, 2017).

In this context, there is an important need to focus on communication and exchange relationships between leaders and their staff members, where the attitudes and behaviors of organizational staff members depend on the various exchanges between members and leaders (Casimire et al., 2014). The Leader-Member Exchange (L-MX) is one of the most prominent theories that deal with the dual relationship between a leader and subordinates which has gained a lot of attention from researchers because of its consequences on employees' work engagement (Aggarwal et al., 2020; Siyal & Peng, 2018; Sepdiningtyas, & Santoso, 2017). Schwepker, 2017; Epitropaki et al., 2016).

L-MX is a process that stresses the importance of the dynamic interaction between a leader and his or her staff members, since the interaction between them has become a critical component of organizational performance. (Bedarkar, & Pandita. 2014; Le Blanc & González-Romá 2012). The underlying premise of this theory is that leaders develop diverse relationships with their subordinates, ranging from low (out-group) to high (in-group) levels of LMX

style (Aggarwal et al., 2020). So, it's not only the leader's influence that is considered but also the influence subordinates exert on their leader, especially in the case of a high-working relationship (Cropanzano, Desborough, & Weiss, 2017).

The leader and staff member who share L-MX relationship experience "Affect," which refers to the fondness of nurses' members for one another. "loyalty", which demonstrated by followers and leaders when they vocally support one another's endeavors, Nurses demonstrate their loyalty to the leader when they adopt the leader's visions and goals as their own. "Contribution" refers to the amount of work performed by employees in pursuit of a specific goal or outcome set by the leader. "Professional respect" refers to how much respect the members of the dyad have towards their colleagues, as well as the internal and external reputation of each member based on their professional competence and area of expertise. (Rosen, Harris, &Kacmar, 2011).

A high level of L-MX is linked to several beneficial outcomes in the workplace, including increased job satisfaction, reduced conflict among colleagues, lower employee turnover intentions, better performance evaluations, and higher organizational commitment (Martin et al., 2016). On the other hand, low L-MX can demotivate employees, making them hesitant to innovate due to fears of lacking necessary resources and facing risks in creative tasks. In nursing, the quality of L-MX can significantly influence nurses' intentions to leave their jobs. When leaders fail to foster strong relationships with nursing staff, these employees often lack the guidance and support they need, leading them to perform only at a minimally acceptable level (Yildiz, 2018).

A strong mutual relationship between leaders and nursing staff fosters open communication, enabling the exchange of creative ideas and promoting innovative behavior, ultimately enhancing nurses' work engagement (Lewis & Cunningham, 2016). Leader-member exchange (L-MX) plays a crucial role in developing nurses' engagement, making it

essential for healthcare leaders to understand the factors that contribute to it(Lewis & Cunningham, 2016).

Nurses who experience high levels of leader-member exchange (LMX) tend to work in resourceful environments that enhance their work engagement and job performance. Work engagement is a positive and fulfilling state of work-related well-being, defined by three key elements: vigor, dedication, and absorption (Schaufeli & Salanova, 2011). Vigor involves maintaining high energy, mental resilience, and persistence in the face of challenges. Dedication reflects a strong involvement in work, accompanied by feelings of significance, enthusiasm, pride, and inspiration. Absorption refers to being fully focused and deeply engrossed in work. While there are varying interpretations of work engagement, most researchers agree that engaged nurses display high energy and a strong connection to their roles (Kananu & Ambrose, 2020).

Building an engaged nursing workforce is a key strategic goal for healthcare organizations, especially in light of the challenges in delivering quality care (Othman & Nasurdin, 2019). While numerous studies have examined the reasons behind nurses' disengagement, there has been limited focus on the importance of everyday interactions between nurse leaders and their teams in enhancing nurses' work engagement (McElheny, 2018; Veriyanti & Nurhayati, 2022). Nurses' engagement is a multidimensional concept involving their emotional commitment to their work, their enthusiasm for providing high-quality care, and their willingness to go beyond basic job requirements. It encompasses factors such as motivation, job satisfaction, and a sense of responsibility toward patients. Engaged nurses are more likely to demonstrate high performance, contribute to positive work environments, and exhibit lower levels of burnout and turnover intentions. This makes fostering nurse engagement a priority for healthcare leaders aiming to improve care outcomes and reduce staff attrition(Schaufeli & Bakker, 2004).

This study aims to address this gap by exploring the relationship between Leader-Member Exchange L-MX and nurses' work engagement. It will also provide insights for developing initiatives to improve the nursing work environment and boost engagement levels. The research will be conducted in intensive and critical care units, where nurses operate in high-stress, dynamic settings, delivering essential expertise and care that patients require for survival. The leadership style in these environments can significantly influence nurses' enthusiasm and engagement at work.

Aim of the study:

Identify the leader-member exchange (L-MX) style of first-line nurse managers and its relationship with work engagement from the nurses' perspective.

Research Questions:

What is the relationship between the leader-member exchange (L-MX) style of first-line nurse managers and nurses' work engagement from the nurses' perspective?

Materials and Methods

Materials:

Design: A descriptive correlational design was used to conduct this study.

Settings: The study was conducted at Alexandria's main university hospital, the biggest hospital in the Alexandria governorate, which has the greatest number of health care providers, receives patients from a wide range of governorates in Egypt, and is preparing for accreditation by GAHAR. The study was conducted in all intensive care units (N=15), and critical care units (N=10). with a total bed capacity of (N=101) beds. In addition, critical care units (N=10) with a total bed capacity of (N=96) beds.

Subjects: Subjects of the present study included all nurses (n = 300) working at Intensive care units (N=230) and critical care units, (N=70) who have direct contact with

patients and provide direct and indirect care to them, with work years of experience not less than one year.

Tools: Two tools were used to conduct this study

Tool I: Lesdership style Questionnaire:

It was developed by Liden & Maslyn, (1998), and validated by Alshamasi and Aljojo (2016), and adapted in this study to measure nurses' perception of the leader-member exchange relationship. It consists of 12 items that are clustered into four main dimensions namely: Affect (3 items), loyalty (3 items), contribution (3 items), and professional respect (3 items). Responses will be measured on a five-point Likert scale as follows: Strongly agree = 5, to strongly disagree = 1. The overall scoring system will be ranging from 12-60.

The scoring ranging from 12 to less than 28 represents a low LMX relationship from the nurses' Perspective, the scoring from 28 to less than 44 illustrates a moderate LMX relationship from the nurses' Perspective, and the scoring ranging from 44-60 represents a high LMX relationship from nurses' Perspective. The reliability estimated by Cronbach Alpha was 0.736 (Alshamasi and Aljojo (2016)

Tool II : Utrecht Work Engagement Scale (UWES):

The Utrecht Work Engagement Scale (UWES) was developed by Schaufeli and Bakker, (2003) and validated by Sulaiman, & Zahoni, (2016), It consists of 17 items that are divided into three dimensions; vigor (6 items), dedication (5 items) and absorption (6 items). Responses were measured on a three-point Likert scale ranging from 1 (never) to 3 (always). The overall scoring system was be ranging from 17-51 where, The scoring ranging from 17 to 28 represents negative perception of nurse's toward their work engagement.

The scoring ranging from 29 to less than 40 indicating the nurse's have moderate perception about their work engagement

while the scoring ranging from 40-51 represents that nurses have a positive perception about their work engagement. Schaufeli and Bakker (2003) reported that the UWES has reliability ranging from .80 to .90, using Cronbach's Alpha Coefficient, which demonstrates high reliability.

In addition, a personal and work-related data sheet was developed by the researcher to get information about the study subjects, including gender, age, years of experience in the current department, Qualification, Job title, type of working unit, and Marital status.

Methods
1. Approval for conducting the study was obtained from the Research Ethics Committee of the Faculty of Nursing, Alexandria University.
2. Permission for conducting the study was obtained from the Dean of the Faculty of Nursing, Alexandria University.
3. Permission for conducting the study was obtained from the administrators of the study setting to collect the necessary data after explaining the aim of the study.
4. The study tools were translated into Arabic, back to back translations was done
5. The study tools were tested for its content validity by Five experts in the field of the study and the necessary modifications were done.
6. The study tools were tested for their reliability to measure the internal consistency of each tool. The reliability estimated by Cronbach Alpha was 0.832 for the first tool and 0.86 for the second tool.
7. A pilot study was conducted on 10% (n=30) of the study subjects; they were not excluded from the sample because no modifications were done. This pilot study was done to test the feasibility and applicability of the tools and identify obstacles that may be encountered during data collection and determine the average time of data collection and the necessary modifications that were done.

8. The researcher gathered data through a self-administered questionnaire which will be hand-delivered to the study subjects at their study settings, after explaining the purpose of the study. The subject was asked to return it back to the researcher after a definite period in the study setting. Data were collected in one month from 1/7/2023 to 30/7/2023.

9. Appropriate statistical analysis was used to determine the leader-member exchange (l-MX) style of First -line nurse managers and its relationship with work engagement from nurses' perspective.

Ethical considerations:
- Written informed consent from the study subjects was obtained after explaining the aim of the study.
- Each assessment sheet was coded, and participants' names did not appear on the sheets for anonymity and confidentiality.
- Privacy of the study participants was asserted.
- A subject participated in the study on a voluntary base and had the right to withdraw at any time from the study and there was no harm if they did not participate in the study.

Statistical Analysis:

Data were fed to the computer and analyzed using IBM SPSS software package version 23.0. Pearson coefficient was used to correlate between normally distributed quantitative variables. One way ANOVA test was used to compare more than two categories. Student t-test was used to compare two categories for normally distributed quantitative variables. Regression to detect the most independent/ affecting factor for affecting Work Engagement. The significance of the obtained results was judged at the 5% level .

Results:
Table (1) shows the personal and work-related characteristics of the study subjects. The majority of nurses are female (81.0%) compared to male nurses (19.0%). Most of the subjects (40.3%) fall within the age range of 20-29 years old, while smaller proportions were in the age range of 40-49 (13.7%), and those aged 50 or above represent (13.0%). The mean age of the group is 34.66 ± 9.82 years. In terms of marital status, less than three-quarters of the study subjects (73.7%) were married, 21.3% were single, while (3.3%) were widowed. The study subjects comprise various units, with the most common being ICU Critical (22.3%), ICU (17.7%), and ICU neurosurgery (9.7%).

In terms of qualifications, 60.0% hold a secondary technical nursing school Diploma, 20.3% hold a technical health institute certification, while 19.7% hold a baccalaureate degree. Concerning years of experience, the study subjects were distributed as follows: Less than five years' experience makes up 24.0% of the total, followed by five to ten years, ten to fifteen years, fifteen to twenty years, (23.7%, 15.3%, 9.7%) respectively and twenty years or more for 27.3% of the total. The average years of experience was 13.21 ± 10.31 years.

Table (2) Illustrated nurses' perception of FLNMS' leader-member exchange style and related dimensions. As regards various dimensions of LMX as perceived by participants. The findings revealed that the overall Multidimensional Model of LMX Percent Score was 80.97 ± 17.71, indicating a generally positive perception of the LMX model among participants. The table showed that the "Professional Respect" dimension received the highest percent score of (83.25 ± 19.56) and ranked as the first one, followed by the "Loyalty" dimension with a percent score of (80.81 ± 19.47), and the Affect dimension with a percent score of (80.67 ± 17.60). While the "Contribution" dimension has a slightly lower percent score (79.17 ± 19.45) compared to affect and loyalty.

Table (3) shows the nurses' perception of work engagement using the Utrecht Work Engagement Scale (UWES). It indicates that the overall perception of nurses towards their work engagement was positive, with a mean score of 44.83 ± 6.25 and a mean percent of 81.85 ± 18.40. The mean percentage score for vigor was the highest at $81.08\% \pm 20.27$,

followed by the dimensions of dedication and absorption, with a mean percent score of 80.50 ± 19.51.

Table (4) shows the correlations between the Multidimensional of LMX and Work Engagement. The findings revealed that the overall Multidimensional LMX score demonstrates positive and strong correlations with all UWES dimensions (ranging from 0.804 to 0.843, all $p < 0.001$). Regarding the LMX dimensions, Professional Respect displays the strongest positive correlations with UWES dimensions, indicating connections with Vigor, Dedication, Absorption, and Overall Engagement (ranging from 0.786 to 0.831, all $p < 0.001$), followed by Loyalty, which also exhibits positive and strong correlations with Vigor, Dedication, Absorption, and Overall Engagement (ranging from 0.765 to 0.800, all $p < 0.001$). While other LMX dimensions, contribution and affect show positive and moderately strong correlations with Vigor, Dedication, Absorption, and Overall Engagement (ranging from 744 to 0.781, all $p < 0.001$ and 0.692 to 0.719, all $p < 0.001$ respectively).

Table (5) shows the linear regression analysis conducted to investigate the impact of the multidimensional Leader-Member Exchange (LMX) on Work Engagement, the findings revealed significant insights. Among the variables studied, "Loyalty" emerged as a notable factor, displaying a substantial positive effect on Work Engagement (B = 0.230, Beta = 0.243, t = 3.563, p < 0.001). Similarly, Contribution was found to have a significant positive influence (B = 0.202, Beta = 0.213, t = 3.450, p = 0.001), underscoring its importance in fostering work engagement. Particularly striking was the impact of Professional Respect, which exhibited a highly significant positive association with Work Engagement (B = 0.434, Beta = 0.060, t = 7.197, p < 0.001).

However, the variable Affect did not demonstrate a significant effect on Work Engagement in this analysis (B = -0.019, Beta = -0.018, t = -0.311, p = 0.756). The model's overall fit was robust, as indicated by an R2 = 0.732, suggesting that approximately 73.2% of the variability in Work Engagement can be elucidated by the multidimensional of LMX. Furthermore, the F-statistic of 201.434 with a p-value less than 0.001 underscored the statistical significance of the model. Accordingly, the outcomes underscore the substantial influence of dimensions like Loyalty, Contribution, and Professional Respect within the LMX framework on enhancing Nurses' work engagement.

Discussion

In nursing, the relationship between first-line nurse managers and nurses is essential for creating a supportive work environment marked by trust, respect, support, and open communication. This ultimately leads to positive outcomes, such as increased work engagement (Cai, 2023; Omilion-Hodges, Ptacek, & Ptacek, 2021).

Nurses who view their managers as supportive and understanding tend to be more emotionally invested in their work, provide better patient care, and achieve higher job performance (Al Otaibi et al., 2023). In contrast, poor relationships characterized by low trust, inadequate communication, and perceived unfairness can lead to disengagement, burnout, and lower job satisfaction. When nurses feel undervalued or unsupported, they are more likely to experience emotional exhaustion and decreased motivation, negatively impacting their work engagement (Hassaan, 2024).

The multidimensional model of L-MX (leader-member exchange) provides insights into the different aspects or qualities of the relationship between leaders and their followers, specifically among nurses in this study. The dimensions explored in this model include affect, loyalty, contribution, and professional respect.

As regards Nurses' perception of FLNMS leader-member exchange style and its related dimensions, the overall Multidimensional Model of LMX Percent Score was high, indicating a generally positive perception of the LMX model among participants; the relationships between leaders and members are perceived as effective and supportive. This positive perception could be attributed to the fact that nurses have insights into

the importance of forming organizational performance and success through positive relationships between leaders and subordinates, which has been emphasized elsewhere (Mallory, et al., 2014, Almasradi, Panatik, and Chikaji, 2017, Schyns, 2018). (Mallory, et al., 2014, Almasradi, Panatik, and Chikaji, 2017, Schyns, 2018).

Regarding attempts to encourage quality of leader-member relationships (LMRs), Dunegan, Uhl-Bien, and Duchon 2002, Chen et al., 2008), claim that organizations gain much from an improved understanding of how Nurses and their leaders perceive LMRs. This should result in constructive outcomes for individuals and the organization, whereby nurses with high-quality LMRs readily take greater responsibilities while also contributing to other aspects or units of their organizations. Lo et al., (2006) came up with similar findings whereby LMRs could prompt subordinates to behave more satisfactorily beyond their prescribed roles (Lo, Ramayah, & Kueh, 2006).

The current study result showed that the "Professional Respect" dimension received the highest percent score and ranked as the first one suggesting that participants feel a strong sense of respect from their leaders, followed by the "Loyalty" dimension and the Affect dimension, while the "Contribution" dimension has a slightly lower percent score. From the researcher's point of view, the positive perception of LMX may indicate that nurses feel their leaders are providing the necessary support and resources.

The high ranking for the "Professional Respect" dimension may be attributed to the strong sense of respect nurses receive from their leaders. Bianco, Dudkiewicz, and Linette (2014) emphasized that respect and recognition from leaders are crucial factors in nurse job satisfaction and engagement. Nurses who feel respected by their managers are more likely to perceive their work environment. This aligns with research conducted by Hughes (2019) on the significance of respect in nurse-leader relationships.

Concerning "Loyalty" and "Affect," The LMX theory emphasizes the importance of mutual trust, respect, and obligation between leaders and members. The high scores on these dimensions indicated that nurses feel a sense of loyalty and positive affect towards their leaders. These findings are supported by the research literature on the importance of effective nurse-leader relationships and their impact on nurse outcomes. (CastrTo, & Cuyegkeng, 2022, Lanzoni, & Meirelles, 2011).

Moreover, the study results are consistent with Alharbi and Baddar (2019), Greguras and Ford (2006). which revealed that the Respect dimension was perceived the most positively, emphasizing that when nurses view their relationships with leaders as being high in professional respect, they are more likely to comply with requests; this could mean engaging in activities that may lead to overload to meet a manager 's work goals. In contrast, the study result of Rosen, Harris, & Kacmar, (2010). showed that Loyalty was perceived as moderately positive by nurses, which could be due to a feeling that managers need be more strident in their defense of employees when attacked or advocate more for subordinates when an honest mistake is made. To enhance LMRs, leaders should treat employees as team members while monitoring interactions and exchange relationships (Rosen, Harris, & Kacmar, 2010).

The current study findings indicate that high-quality leader-member relationships (LMR) correlate with increased perceived loyalty. The study revealed that the dimensions of "Affect" and "Contribution" were similarly perceived as high, aligning with previous research by Ishak and Alam (2009) and Gomez and Rosen (2011). These studies suggest that employees with strong LMR experience greater autonomy, a sense of contribution, and influence in decision-making, highlighting how LMR impacts levels of responsibility and delegation.

Nurses' Perception of Work Engagement

The study findings illustrated that the overall perception of nurses towards their work

engagement was positive, indicating that the majority of nurses scored above average in terms of their overall work engagement. This could be attributed to their organization, which treats employees with respect, conducts work ethically, and provides career development opportunities. These factors are reflected in their commitment to the organization and the profession itself. Christina (2016) emphasized that when nurses feel committed, they are more likely to report higher levels of engagement. This finding aligns with the subjects' perception of their leadership LMX relationship, which revealed that the "Professional Respect" dimension received the highest percentage score and was ranked first.

The results reveal that vigor scored the highest in terms of work engagement aspects. This dimension is characterized by high levels of energy, resilience, and perseverance in the workplace, along with a willingness to exert effort and maintain a determined attitude when facing challenges. From the researcher's perspective, such vigor may arise from a strong energy and enthusiasm for their roles. This indicates that they can maintain their energy and enthusiasm, which is crucial for managing the demanding nature of healthcare work. Schaufeli, Salanova, Gonzalez-Roma, & Bakker (2002) and Schaufeli & Bakker (2004) emphasized that high vigor is linked to better performance and lower burnout rates, which is a positive indicator for both individual well-being and overall job performance.

The study's findings align with Elhanafy (2018) and Diab & Elnagar (2019), indicating that nurses demonstrate a moderate level of work engagement. However, this contrasts with results from Elhaddad, Safan, and Elshall (2020), Eliwa (2019), and Wang et al. (2017), who reported low work engagement among nurses. Additionally, there were differences in the ranking of the dimensions of engagement: dedication, characterized by a strong sense of significance and enthusiasm, was ranked highest by Elhaddad et al. (2020), followed by vigor. In contrast, the absorption dimension—reflecting full immersion in work—received the lowest mean score

In this concern, Brunetto, Shacklock, Teo, & Farr-Wharton, (2014); Agarwal, Datta, Blake-Beard, & Bhargava, (2012); Gupta, Acharya, & Gupta, (2015) stressed that Employees experiencing absorption tend to lose track of time, becoming deeply engaged in their work activities, high absorption typically results in better performance as nurses can concentrate on their work without being easily distracted which enhances their overall job experience.

Concerning the correlation between Multidimensional of LMX and Work Engagement:

The study findings illustrated that the overall Multidimensional LMX score demonstrates positive and strong correlations with all UWES dimensions. The strong positive correlations indicate that favorable LMX relationships are linked to increased work engagement among nurses and the importance of leadership and the quality of the leader-member exchange in fostering work engagement among nurses.

From the researcher's point of view, these results indicate that nurses who have positive relationships with their leaders and experience high levels of LMX are more likely to be engaged in their work. Moreover, the dimensions of work engagement are interrelated, with individuals who exhibit high levels of vigor also demonstrating high levels of dedication and absorption, and vice versa. These findings highlight the importance of positive leader-member relationships and work engagement for individuals in their professional roles.

On the other hand, leaders who promote positive affect, loyalty, contribution, and professional respect are likely to contribute to higher levels of work engagement among their nursing staff. Organizations can focus on enhancing these dimensions of LM-X to create a supportive and engaging work environment for nurses, which may lead to increased job satisfaction, productivity, and overall well-being.

The current study results are consistent with López-Ibort, et al., (2021) who revealed a direct link between positive LMX relationships, work engagement, employee

well-being, and patient outcomes. Strong LMX relationships not only boost nurses' job satisfaction and performance but also contribute to improved patient satisfaction, quality of care, and overall healthcare outcomes.

Vizor (2023) and Alharbi & Baddar (2019) emphasize that the quality of leader-member exchange (LMX) relationships significantly influences nurses' work engagement. Positive interactions, trust, and managerial support enhance nurses' motivation, job satisfaction, and commitment. Additionally, Tekleab and Taylor (2003) argue that for a high-quality relationship to develop, both leaders and members must contribute and recognize each other's contributions. Managers and employees must understand their respective obligations to fulfill them effectively.

Regarding the impact of the multidimensional Leader-Member Exchange (LMX) on Work Engagement, the findings of the linear regression analysis revealed significant insights. Among the variables studied, "Loyalty" emerged as a notable factor, displaying a substantial positive effect on Work Engagement. Similarly, Contribution was found to have a significant positive influence, underscoring its importance in fostering work engagement. Particularly striking was the impact of Professional Respect, which exhibited a highly significant positive association with Work Engagement (B = 0.434, Beta = 0.060, t = 7.197, p < 0.001). The variable "Affect " did not significantly affect Work Engagement in this analysis (B = -0.019, Beta = -0.018, t = -0.311, p = 0.756).

The researcher suggests that loyalty positively impacts work engagement due to the trust and commitment fostered in high-quality leader-member exchange (LMX) relationships. When nurses feel loyal to their leaders, they are more engaged in their work, creating a supportive environment where they feel valued and motivated to contribute. This aligns with the findings of Zanabazar, Yondonrenchin, & Baljinnyam (2023), highlighting the importance of relational dynamics in boosting employee engagement.

Concerning the Contribution as a Key factor highlights that nurses who feel their contributions are recognized and valued by their leaders show higher levels of engagement. This supports the idea that high-quality leader-member exchange (LMX) enhances employees' perceptions of their roles and responsibilities, boosting motivation and engagement in their work (Garg & Dhar, 2017). When leaders actively acknowledge and encourage contributions, it fosters a sense of ownership and commitment among team members (Singha, 2024).

About "professional Respect" The highly significant positive association of Professional Respect with Work Engagement is particularly noteworthy. This finding resonates with the concept that respect in the workplace fosters a positive emotional climate, which is crucial for engagement. (Abiodun, 2010). Previous studies have shown that when employees feel respected by their leaders, they are more likely to engage deeply with their work, as respect enhances their self-esteem and sense of belonging within the team. This emotional connection can lead to increased discretionary effort and a proactive approach to work. (Shen 2023, Garg and Dhar, 2017, Martin 2016).

As regards the finding that "Affect" did not significantly impact Work Engagement, it could be attributed to the fact that emotional connections alone may not be sufficient to drive engagement. While positive emotions can enhance workplace dynamics, they must be coupled with other factors, such as loyalty, contribution, and respect, to have a meaningful impact on engagement levels. This aligns with research indicating that emotional aspects of LMX are important but may not be the sole determinants of engagement (Barnes, and Collier, 2013).

The significant positive effects of Loyalty, Contribution, and Professional Respect on Work Engagement highlight the multifaceted nature of LMX. These findings are supported by existing literature (Garg and Dhar, 2017; Martin et al., 2016; Barnes and Collier, 2013; Agarwal 2012) that emphasizes the importance of relational quality in fostering employee engagement. The lack of significance for Affect suggests that while emotional connections are valuable, they must

be integrated with other relational dimensions to effectively enhance engagement.

Conclusion

The findings reveal that professional respect emerged as the most influential dimension of LMX, alongside loyalty and contribution. High levels of work engagement—characterized by vigor, dedication, and absorption—were observed among nurses. The study findings illustrated that the overall Multidimensional LMX score demonstrates positive and strong correlations with all work engagement dimensions, emphasizing the critical role of supportive leadership in fostering work engagement.

Recommendations:

Based on the study findings, the following recommendations are suggested.

For Hospital Administration:
1. The organization can develop strategies to improve LMX and, consequently, employee engagement.
2. Strengthening open communication by conducting schedules for nurses' meeting with their managers to reach a high level of work engagement.
3. Leadership Training Programs: Offer training for nurse leaders focusing on vision communication, persuasive techniques, and relationship building.
4. Targeted Interventions: Assess and implement specific interventions to improve work environments and engagement across various nursing units.
5. Prioritize Work-Life Balance: Establish initiatives that support work-life balance, including flexible scheduling and self-care resources.

For Nurse Managers:
1. Enhance work engagement and foster supportive work environments for nurses, ultimately leading to improved nursing care quality and patient outcomes safety.
2. Recognition and Valuation: Actively recognizing and valuing nurses' contributions can foster a sense of ownership and commitment, which is essential for engagement.

3. Leadership Rounding: Conduct regular rounds to engage with staff directly and foster open communication.
4. Development of Persuasive Skills: Focus on enhancing persuasive communication techniques to effectively engage nurses with the organization's mission and vision.
5. Fostering Positive Leader-Member Relationships: Actively work to build and maintain positive relationships with nurses.

Further studies:
1. Explore specific factors contributing to this positive perception and level of engagement among nurses and how it can be further enhanced in healthcare settings.
2. Examine the relationship between the work engagement of nurses and the quality of patient care.
3. Examine the predictors of work engagement of the health care workforce in different health care settings with different healthcare sectors to provide nurse leaders with a better understanding of the antecedents and consequences of nurses' work engagement.
4. Implement longitudinal studies to assess how changes in LMX over time affect work engagement levels among nurses. This could help in understanding the long-term effects of leadership styles on employee engagement and retention.

Author contributions

Eman Mahmoud Saad Mohamed, Head Nurse of NICU: Played a significant role in data collection, analysis, and interpretation. Assisted in drafting and revising the dissertation and contributed to the methodology and statistical analysis.

Fatma Mostafa Baddar, Emeritus Professor: Supervised the research and provided expert guidance throughout the study. Contributed to the conceptualization, study design, and final review of the dissertation.

Heba Mohamed Alaawer, professor : Contributed to the study design, data analysis, and interpretation. Assisted in

writing and revising the dissertation and provided guidance on the literature review and discussion sections.

Table (1): Distribution of the studied sample based on their personal and work-related characterist300).

Personal and work-related characteristics	No.	%
Sex		
Male	57	19.0
Female	243	81.0
Age in years		
20 – 29	121	40.3
30 – 39	99	33.0
40 – 49	41	13.7
≥50	39	13.0
Mean ± SD	34.66 ± 9.82	
Marital status		
Single	64	21.3
Married	221	73.7
Widow	10	3.3
Divorced	5	1.7
Unit		
ICU	53	17.7
ICU Critical	67	22.3
ICU Critical med.	7	2.3
ICU anesthesia	8	2.7
ICU oncology	12	4.0
Renal filtration	10	3.3
ICU surgery	8	2.7
ICU hematology	11	3.7
ICU rheumatoid	5	1.7
ICU diabetics	13	4.3
ICU toxicity	23	7.7
ICU emergency	19	6.3
ICUIntermediate	11	3.7
ICU cardiology	12	4.0
ICU hebetic	12	4.0
ICU neurosurgery	29	9.7
Qualification		
Secondary technical Nursing Diploma	180	60.0
Technical health Institute	61	20.3
Baccalaureate degree	59	19.7
Years of experience		
<5	72	24.0
5 - <10	71	23.7
10 - <15	46	15.3
15 - <20	29	9.7
≥20	82	27.3
Mean ± SD	13.21 ± 10.31	

Table (2) Nurses' perception of FLNMS" leader member exchange style (N = 300).

Multidimensional Model of LMX	Mean ±SD	Mean score % ± SD%	Rank
Affect	12.68 ± 2.11	80.67 ±17.60	3
Loyalty	12.70± 2.34	80.81 ±19.47	2
Contribution	12.50 ± 2.33	79.17 ±19.45	4
Professional respect	12.99 ± 2.35	83.25 ±19.56	1
Overall multidimensional model of lmx	50.87 ± 8.50	80.97 ±17.71	……

Table (3) Nurses' perception of Work Engagement (n = 300).

Utrecht Work Engagement Scale (UWES)	Mean ±SD	Mean score % ± SD%
Vigor	15.73 ± 2.43	81.08 ±20.27
Dedication	13.05 ± 1.95	80.50 ±19.51
Absorption	16.05 ± 2.27	80.50 ±19.51
Overall	44.83 ± 6.25	81.85 ± 18.40

Table (4): Correlation matrix between Multidimensional of LMX and Work Engagement .

Work Engagement / LMX		Vigor	Dedication	Absorption	Overall Engagement
Affect	r	0.692	0.708	0.708	0.719
	p	<0.001*	<0.001*	<0.001*	<0.001*
Loyalty	r	0.765	0.763	0.763	0.800
	p	<0.001*	<0.001*	<0.001*	<0.001*
Contribution	r	0.744	0.768	0.768	0.781
	p	<0.001*	<0.001*	<0.001*	<0.001*
Professional respect	r	0.786	0.806	0.806	0.831
	p	<0.001*	<0.001*	<0.001*	<0.001*
Overall Multidimensional	r	0.804	0.819	0.819	0.843
	p	<0.001*	<0.001*	<0.001*	<0.001*

Table (5):Linear Regression Analysis of the Multidimensional LMX and Work Engagement.

Variable	B	Beta	T	p	95% CI	
					LL	UL
Multidimensional Model of LMX						
Affect	-.019	-.018	-.311	.756	-.139	0.101
Loyalty	0.230	0.243	3.563	<0.001*	0.103	0.357
Contribution	0.202	0.213	3.450	0.001	0.087	0.316
Professional respect	0.434	0.060	0.462	7.197	<0.001*	0.316
R^2= 0.732, F= 201.434*, p<0.001*						

Reference:

- Abiodun, R. A. (2010). Leadership Behavior Impact on Employee's Loyalty, Engagement and Organizational Performance: Leadership behavior and employee perception of the organization. AuthorHouse.

- Adebesin D. (2021) Leader-member congruence in mindfulness and work outcomes: the mediating role of leader-member exchange. Published Master thesis. University of Lethbridge, 2021.

- A El-Guindy, H., Ahmed Bayoumy, S., & Mubarak Ahmed, R. (2021). Relationship between Workplace Violence, Work Engagement and Staff Nurses' Intention to Leave Nursing Profession. *Egyptian Journal of Health Care*, *12*(2), 1815-1827

- Agarwal, U. A., Datta, S., Blake-Beard, S., & Bhargava, S. (2012). Linking LMX, innovative work behaviour and turnover intentions: The mediating role of work engagement. Career development international, 17(3), 208-230.

- Aggarwal A, Chand PK, Jhamb D and Mittal A (2020) Leader–Member Exchange, Work Engagement, and Psychological Withdrawal Behavior: The Mediating Role of Psychological Empowerment. Front. Psychol. 11:423. doi: 10.3389/fpsyg.2020.00423

- Alharbi, A. A., & Baddar, F. M. (2019). Quality of Leader-Member Relationships in Saudi Arabia: Nursing Perspectives.

- Almasradi, R. B., Panatik, S. A., & Chikaji, A. I. (2017). The Relationship Between LMX and OCB in Saudi Arabia-Review of Literature. Advanced Science Letters, 23(9), 8843-8845.

- Barnes, D., & Collier, J. (2013). Investigating work engagement in the service environment. Journal of Services Marketing, 27(6), 485-499.

- Bedarkar, M., & Pandita, D. (2014). A study on the drivers of employee engagement impacting employee performance. Procedia-Social and Behavioral Sciences, 133, 106-115.

- Bianco, C., Dudkiewicz, P. B., & Linette, D (2014). Building nurse leader relationships. Nursing management, 45(5), 42-48.

- Cai, J. (2023). Effects of Leadership Styles and Organizational Strategy to Enhance Performance Efficiency. Journal of Enterprise and Business Intelligence, 3(1), 012-022.

- Casimir, G., Ng, Y. N. K., Wang, K. Y., & Ooi, G. (2014). The relationships amongst leader-member exchange, perceived organizational support, affective commitment, and in-role performance: A social-exchange perspective. *Leadership & Organization Development Journal*.

- Castro, J. P., & Cuyegkeng, M. A. C. (2022). Building A Model for High-quality Nurse Leader-Follower Relationships. Philippine Journal of Nursing, 92(2).

- Cherian, S. &Karkada, S. (2017*): A Review on Leadership in Nursing International *Journal of Nursing Research and Practice*. Vol. 6, Issue 3, pp: (1102-1112), Available at: **www.noveltyjournals.com**

- Chen, C. H., Wang, S. J., Chang, W. C., & Hu, C. S. (2008). The effect of leader-member exchange, trust, supervisor support on organizational citizenship behavior in nurses. The Journal of Nursing Research, 16(4), 321-3

- Christina Dempsey, M. S. N. (2016). Nurse engagement: what are the contributing factors for success?. Online Journal of Issues in Nursing, 21(1), C1.

- Cropanzano R, Dasborough MT, Weiss HM (2017). Affective Events and the Development of Leader-Member Exchange Academy of Management Review. 42: 233-258. DOI: 10.5465/Amr.2014.0384

- Diab, G. M., & Elnagar, M. (2019). Work engagement of staff nurses and its relation to psychological work stress. Journal of Nursing and Health Science, 8(2), 72-84.

- Dunegan, K. J., Uhl-Bien, M., & Duchon, D. (2002). LMX and subordinate performance: The moderating effects of task characteristics. Journal of Business and Psychology, 17(2), 275-285.

- Elhaddad, S. S., Safan, S., & Elshall, S. E. (2020). Nurses' perception toward talent management and its relationship to their work engagement and retention. Menoufia Nursing Journal, 5(2), 25-38.

- Elhanafy, E. (2018). Relationship between Cyberloafing, Organizational Justice, Work

Engagement and Organizational Trust among Nurses.

- Eliwa, S.(2019). Perceived organizational support and its relation to work engagement among staff nurses.Nursing Admistration.Benha University

- Furunes, T., Kaltveit, A., & Akerjordet, K. (2018). Health-promoting leadership: A qualitative study from experienced nurses' perspective. Journal of clinical nursing, 27(23-24), 4290-4301.

- Garg, S., & Dhar, R. (2017). Employee service innovative behavior: The roles of leader-member exchange (LMX), work engagement, and job autonomy. International Journal of Manpower, 38(2), 242-258.

- Gelsthorpe, J. (2020). Relationships, relationships, relationships: The impact of a differentiated Leader-Member Exchange (LMX) on individual performances within socio-comparative groups (Doctoral dissertation, Flinders University).

- Greguras, G. J., & Ford, J. M. (2006). An examination of the multidimensionality of supervisor and subordinate perceptions of leader-member exchange. Journal of Occupational and Organizational Psychology, 79(3), 433-465.

- Hughes, V. (2019). Nurse leader impact: a review. Nursing Management, 50(4), 42-49.

- Lanzoni, G. M. D. M., & Meirelles, B. H. S. (2011). Leadership of the nurse: an integrative literature review. Revista latino-americana de enfermagem, 19, 651-658.

- Kananu, K. M., Ambrose, K., & Joel, T. (2020) The Effect of Employee Engagement on the Relationship Between Leader-Member Exchange and Innovative Work Behaviour in Kenya. Journal of Business and Economic Development; 5(3): 113-120

- Le Blanc, P. M., & González-Romá, V. (2012). A team level investigation of the relationship between Leader–Member Exchange (LMX) differentiation, and commitment and performance. The Leadership Quarterly, 23(3), 534-544.

- Lewis, H. S., & Cunningham, C. J. (2016). Linking nurse leadership and work

characteristics to nurse burnout and engagement. Nursing Research, 65(1), 13-23.

- Lo, M. C., Ramayah, T., & Kueh, J. (2006). An Investigation of Leader Member Exchange Effects on Organizational Citizenship Behavior in Malaysia. Journal of Business & Management, 12, 5-23.

- Lovejoy P. (2012). Demographic Variables Influence on Work Engagement of Nurses and Doctors in Hospitals. Thesis, Christ University, Bangalore, Karnataka, India.

- Mallory, D. B., Rupp, D. E., Bauer, I. T., & Erdogan, B. (2014). "Good" leadership: Using corporate social responsibility to enhance leader-member exchange. Paper presented at the Annual Meeting of the Society for Industrial and Organizational Psychology, Honolulu, HI.

- Martin, R., Guillaume, Y., Thomas, G., Lee, A., & Epitropaki, O. (2016). Leader–member exchange (LMX) and performance: A meta-analytic review. Personnel psychology, 69(1), 67-121.

- McElheny C. (2018)A Study on the Direct and Moderating Effects of Leader Facilitated Workplace Learning and Leader- Member Exchange on Employee Engagement. LSU Published Doctoral Dissertations.

- Milner, K., Katz, L. A., Fisher, J., & Notrica, V. (2007). Gender and the quality of the leader-member exchange: Findings from a South African organisation. South African Journal of Psychology, 37(2), 316-329.

- Othman, N., & Nasurdin, A. M. (2019). Job characteristics and staying engaged in work of nurses:Empirical evidence from Malaysia. International journal of nursing sciences, 6(4), 432-438.

- Rockstuhl, T., Dulebohn, J. H., Ang, S., & Shore, L. M. (2012). Leader–member exchange (LMX) and culture: A meta-analysis of correlates of LMX across 23 countries. Journal of applied psychology, 97(6), 1097.

- Rosen, C. C., Harris, K. J., & Kacmar, K. M. (2010). LMX, Context Perceptions, and Performance: An Uncertainty Management Perspective. Journal of Management, 37(3), 819-838.

- Rosen, C. C., Harris, K. J., & Kacmar, K. M: (2011): LMX, context perceptions, and performance: An uncertainty management perspective. *Journal of Management,*37,822. doi:10.1177/0149206310365727

- Schaufeli, W., & Salanova, M. (2011). Work engagement: On how to better catch a slippery concept. *European Journal of Work and Organizational Psychology*, 20(1), 39-46. Vol. 6, Issue 3, pp: (1102-1112), Available at: www.noveltyjournals.com

- Schyns, B. (2008). Follower characteristics and the perception of leader-member exchange. Journal of Managerial Psychology, 23(7), 772-788.

- Sepdiningtyas, R., & Santoso, C. B. (2017). The influence of leader-member exchange on individual performance: the roles of work engagement as a mediating variable and co-workers support as a moderating variable. *Review of Integrative Business and Economics Research*, *6*(4), 285-305.

- Shen, X., Shen, T., Chen, Y., Wang, Y., He, X., Lv, X., & Jin, Q. (2023). The associations between benevolent leadership, affective commitment, work engagement and helping behavior of nurses: a cross-sectional study. BMC nursing, 22(1), 407.

- Singha, S. (2024). Nurturing Positive Organizational Climates to Enhance Work Success: A Positive Psychology Approach. In Fostering organizational sustainability with positive psychology (pp. 84-107). IGI Global.

- Siyal, S., and Peng, X. (2018). Does leadership lessen turnover? The moderated mediation effect of leader–member exchange and perspective taking on public servants. Journal of Public Affairs Education,18:e 1830. doi: 10.1002/pa.1830.

- Taipale, S., Selander, K., Anttila, T., & Na, J. (2011). Work engagement in eight European countries. International Journal of Sociology and SocialPolicy,31(7/8),486– doi:10.1108/01443331111149905.

- Tekleab, A. G., & Taylor, S. (2003) 'Aren't There Two Parties in an EmploymentRelationship? Antecedents and Consequences of Organization–Employee Agreement on Contract Obligations and Violations', Journal of Organizational Behavior 24: 585–608.

- Veriyanti, U., & Nurhayati, M. (2022). The Role of Leader-Member Exchange in Moderating the Influence of Competence, Innovative Behavior, and Career Development on Employee Engagement. *European Journal of Business and Management Research*, *7*(1), 153-159.

- Vizor, W. (2023). Nurse managers' leadership style and retention of registered nurses in Canada (Doctoral dissertation, Walden University).

- Wang, X., Liu, L., Zou, F., Hao, J., &Wu, H.(2017).Associations of Occupational Stressors, Perceived Organizational Support, and Psychological Capital with Work Engagement among Chinese Female Nurses. Biomed Res Int. 2017; 2017:5284628.

- Yildiz, S.M. (2018). An empirical analysis of the leader-member exchange and employee turnover intentions mediated by mobbing: `evidence from sports organizations, *Economic Research Journal*, 31:1, 480-497.

- Zanabazar, A., Yondonrenchin, M., & Baljinnyam, E. (2023). The impact of leadership styles on employee loyalty and engagement. European Journal of Business and Management Research, 8(4), 94-100.