



Team Effectiveness Among Nursing Team: Leader-Member Exchange and Cooperative Communication as Determinants

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Abstract. The leader-member exchange (LMX) method focuses on the roles that managers and employees exchanged. Although LMX is important in the workplace, the impact of LMX and cooperative communication on team effectiveness in the healthcare setting has received less attention. Social Exchange Theory (SET) was applied as an alternative to investigate the relationship between LMX and its antecedents. Therefore, the current study's goal is to research how LMX and cooperative communication affect team effectiveness in order to acquire a deeper knowledge of how LMX and SET work together to improve performance. 413 staff nurses and 86 sisters who were members of 86 teams from public hospitals in the northern region of Malaysia participated in the present study. Findings from the study revealed that staff nurses expected their immediate supervisors to facilitate and support them to work efficiently. This study adds to the body of information on the differentiation of LMX relationships, particularly in terms of how to construct strong bonds and open communication between the two positions. In terms of theoretical contribution, this work clarifies the LMX leadership theory's foundation and creates a fresh, useful method for applying it. Additionally, this study makes an effort to improve managerial tasks like teamwork training and coaching staff on how to address employee engagement problems that are connected to higher levels of motivation, satisfaction, and individual performance of nurses, which have so far been restricted in the healthcare setting. The limitations and recommendations for future study directions are also highlighted in the paper.

Keywords: Team Effectiveness · Leader-member Exchange · Cooperative Communication · Nursing Team

1 Introduction

In 2020, a virus known as COVID-19 killed a significant number of people. The virus outbreak which was subsequently declared a pandemic by WHO significantly disrupted the lives of millions of people across the world. Until today, the fight against this virus is led by healthcare professionals. Specific to the Malaysian context, the government

through the 12th Malaysia Plan has emphasized that delivery of healthcare services will remain a priority in enhancing the nation's health condition. One of the means to achieve this through good teamwork. Good teamwork is essential for healthcare personnel to deliver safe, efficient, and high-quality patient care. Unfortunately, while healthcare environments have been urged to adopt more inclusive teamwork strategies, there is a shortage of information on how to do so.

The accomplishment of shared objectives or goals within the coordination of task performed by team members can be thought of as a definition of team effectiveness [1]. A key component to providing high-quality healthcare in hospitals is the effectiveness of the nursing staff working together as a team [2, 3]. Good cooperation can minimize inefficient communication among nurses and resulting in better patient care. This is crucial for patient safety as it lessens unintended incidents brought on by misunderstandings of roles and duties in hospitals and miscommunication with other teams. Ineffective teams, on the other hand, can result in a rise in medical errors, disagreements, absenteeism as well as decreased performance and satisfaction [4, 5].

1.1 Problem Statements

Due to the fact that they spend the majority of their time working directly with patients, nurses serve as a focal point for healthcare competence. This group of employees are fighting the COVID-19 disease in the front lines; thus, the cost of this global health disaster is highest for nurses [6]. The COVID-19 emergency poses considerable dangers for nurses in terms of stress, exhaustion, and post-traumatic stress disorder. Inadequate staff training and resource availability, a lack of training and treatment protocols, a lack of communication and leadership support are the most significant occupational risk factors that companies should address. In the healthcare industry, there is a human capital crisis. Due to job overload, the majority of healthcare professionals are burning out and quitting the public sector [7]. Therefore, it can be argued that strong teamwork is one of the key factors contributing to healthcare organizations' success.

Mutual understanding of leader-member (LMX) interactions is essential in this regard since it has relational repercussions that ultimately affect the nurses' team outcomes, such as the provision of safe, efficient, and patient high care standard [8]. The level of exchange relationships between the group leader and members is represented by the LMX. A low-quality relationship is characterised by the economic exchange of reward and performance, as opposed to a high-quality relationship, which is characterised by the interchange of socio-emotional resources including trust, loyalty, commitment, and respect [9, 10].

The Strategic Framework Medical Programme 2021–2025 (Ministry of Health Malaysia) states that healthcare leaders at all levels must set a positive example and show dedication towards enhancing the quality and safety of the country's healthcare system. Furthermore, healthcare services need to make quality and safety a top priority both strategically and practically. Professionalism, creativity, and innovation are seen to be the driving forces behind quality and safety, particularly when the necessary resources are scarce [11].

In order to provide better healthcare, human factors like quality of work, stress and fatigue, communication problems, and teamwork need to be effectively addressed. Quality and safety must be “institutionalized” as an essential component of the organization, affecting all levels of employees [12]. Globally, rising life expectancy and the number of individuals managing several chronic disorders are factors in the complexity of healthcare systems [13]. Cooperative communication is necessary in this situation. One of the qualities of safe and highly dependable patient care is cooperative communication in nursing practice [14, 15]. In clinical practice, nurses perform a variety of responsibilities, yet great communication is still necessary in order for them to deliver efficient care. A considerable amount of work unhappiness is a result of poor communication, which has an impact on the effectiveness and safety of patient care. Although it has been discovered that LMX relationships and cooperative communication increase team effectiveness [16], studies related to healthcare settings are still lacking. Moreover, there is little instruction or training available on how to encourage teams to collaborate more effectively in order to improve safety [17].

1.2 Research Questions

The purpose of this project is to address the following research questions:

- (1) Does LMX influence on team effectiveness?
- (2) Does cooperative communication influence team effectiveness?

1.3 Purpose of Study

This study’s primary goal is to look at the relationship between LMX and cooperative communication with team effectiveness.

2 Literature Review

2.1 Team Effectiveness

Teams are characterized as interdependent groups of workers who possess complementary abilities, work towards shared goals and having the potential to achieve higher goals [18]. In this study, team satisfaction and team viability are indicators of a team’s effectiveness. Team satisfaction refer as the fulfilment of each team member’s individual demands, the retention of the member in a team and their capacity to continue functioning as a unit referred as team viability [19]. To achieve great performance, a team needs specific group dynamics that foster trust, making it possible for members to assist and share information easily. Supervisors must serve as role models to encourage sharing of information and behavior that supports others [20]. A dependable and peaceful work environment will be fostered through the development of effective working association between nurses and supervisors with the use of right management techniques.

2.2 Leader-Member Exchange

Leader-member exchange (LMX) means a leader creates an in-group and out-group by having a special one-on-one relationship with each employee, treating them differently, and getting different results. High levels of trust, respect, and cooperation are shown between members of the “in-group,” who also have better access to information and are more actively involved in decision-making [21]. Employees who believe that their supervisor is behind them will frequently show that support. Promotions, bonuses, and even more workload control are available to employees who belong to this group (the in-group) [22].

In the context of healthcare delivery, “in-group” professionals who are effective at completing their workplace issues will result in a positive patient experience. In contrast, “out-group” professionals have a restricted amount of interaction with their subordinates. [23]. A member of the out-group will complete routine activities in accordance with the set contract, but they will forego completing jobs that are not included in the framework. The “out-group” of nurses in the medical field will feel abused, disregarded, and abandoned. This will lead them to perceive that their position is permanent and making it pointless for them to alter their professional behavior [24]. From this discussion, it can be concluded that workgroup effectiveness is correlated with high-quality leader-member interactions.

The standardization of resource-based service delivery for public nurses in Malaysia has led to an increase in workload [25]. Public sector nurses deal with rising workloads, poorer working conditions, strict schedules, longer work hours, less autonomy at work, and more duties [26]. Due to the performance measures authorized by high management, supervisors have been required to use their managerial authority to increase nurses’ level of accountability [27]. Therefore, productive workgroups have high-quality member-leader relationships.

2.3 Cooperative Communication

When workgroup members exchange messages and engage in activities that support one another in achieving the group’s objectives, this is referred to as cooperative communication [28]. Cooperative communication behaviors include sharing freely given information, ideas, and resources; supporting one another; exhibiting concern for one another; expressing an interest in the endeavors of other group members, responding to them, demonstrating mutual support and sensitivity, and compromising and bargaining to establish a consensus on the group’s objectives. To offer patients with care that is both safe and highly dependable, members of the healthcare team must effectively communicate [29]. Communication between members of the healthcare team, particularly staff nurses, needs to be improved due to the quickly changing social and medical conditions. The performance of staff nurses, their degree of happiness, and their intention to stick with the same team will all increase with effective team communication, such as delivering adequate information about nursing tasks and patient care [9]. The researchers consequently proposed the hypothesis that cooperative communication significantly influenced team effectiveness.

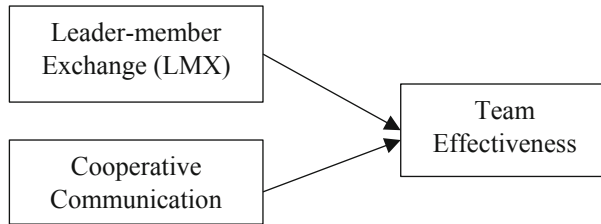


Fig. 1. Theoretical Framework

2.4 Social Exchange Theory

The Social Exchange Theory (SET) is one of the most important conceptual theories to understand workplace behavior. The influential framework for analyzing the connection between employees and organizations is known as SET [9]. SET has been used in organizational settings to help people comprehend the roles that organizations and managers play in instilling in employees a sense of responsibility and encouraging pro-organizational conduct [30, 31]. Participants in SET will strive to thank those who have assisted them. The formation of high-quality exchange relationships is facilitated by the organization's supportive and advantageous actions toward its personnel. Additionally, employees develop a broad perception of how much the company values their efforts and wellbeing. Employees who receive a lot of support from their employer may feel obligated to pay it back, which could improve work output and motivation to remain with the company.

In addition, SET claims that leaders develop various interpersonal relationships with subordinates, instilling a sense of commitment in workers who experience good treatment from their leaders [32]. According to SET, healthy LMX relationships are characterized by a shared sense of commitment, respect, and trust. When employees receive this kind of support from their leaders, the norm of reciprocity asserts that they feel obligated to repay it with actions like improving job performance, effective communication, and organizational citizenship [33] (Fig. 1).

Therefore, the following hypotheses are put out in light of the aforementioned arguments:

H1: LMX is significantly related to team effectiveness

H2: Cooperative communication is significantly related to team effectiveness

2.5 Operationalization of the Constructs Aggregated at the Individual Level

Two key rules must be observed when aggregating individual responses to the team level to guarantee that the team-level characteristics are accurately reflected in the individual-level scores: employing a suitable theoretical justification and experimentally achieving within-team consensus [34]. It is typical practice to first ask team members to rate the construct (such as team effectiveness) at the individual level before operationalizing it to the team level. The team belief or impression is then determined from the arithmetic mean of these responses [35].

3 Research Methods

3.1 Sample and Procedure

Any ward in Malaysian hospitals typically has a sister as the team leader and a staff nurse as a team member. Therefore, unit analysis of this study is the team that works in the hospital ward. The present study involved staff nurses and their immediate supervisors (sisters) who work in Malaysian northern region general hospitals. The sample was made up of nurses who work in a range of specialties, including cardiology, neurology, paediatrics, and emergency medicine. Data were gathered from 413 staff nurses and 86 sisters who were members of 86 teams in the public hospitals in northern Malaysia with the help of the matron's office. There were between three and five respondents per team, with four being the average.

Sisters and staff nurses were asked to assess their relationship with one another. In order to be consistent with the lowest length of time typically needed to build a mature professional relationship, our sample eliminated sisters and staff nurses who had worked in their hospital ward for less than six months [36]. This was to ensure both parties knew each other well enough and had established relationships based on exchange. To match staff nurses and sisters, each questionnaire was coded with an identifying number supplied by the researcher. The participants were instructed to submit the completed surveys to the researchers' offices in sealed envelopes to preserve confidentiality.

3.2 Instruments

LMX. LMX is measured with 7-items scale was developed by Scandura et al. [37]. Sample items include "My supervisor understands my job problems and needs" and "I have an effective working relationship with my supervisor." A dyad will be created using the completed surveys from the subordinate and the subordinate's immediate supervisor.

Cooperative Communication. Cooperative communication was derived from Lee [28] with 7-items scale. Examples include: "Relevant information is exchanged openly among ward members" and "If disagreements arise, members in this ward are usually able to solve them."

Team effectiveness. Team effectiveness. Team satisfaction and team viability were used to measure the effectiveness. This is also in line with Hackman's concepts for team performance [38], and consisted of 14-items scale. Examples include: "Staff nurse in this ward knows what to do to get their nursing duties done" and "This ward sets a good example of teamwork for other wards in the hospital".

Control variables. We adjusted for the following factors to evaluate the hypotheses as suggested by Spector and Brannick [39]. Group size and team tenures (measured in years) were first controlled because these variables may be related to the effectiveness of the team [40, 41]. Team size is calculated using the logarithm of the number of team members, whereas team tenure was determined using the logged average number of years that team members had been a part of the team.

Table 1. Level of aggregation

Variables	$r_{wg}(j)$	ICC1	ICC2
LMX	.90	.26	.72
Cooperative Communication	.92	.43	.69
Team Effectiveness	.95	.64	.78

4 Findings

4.1 Profile of Respondents

The sample is representative of the nursing workforce in Malaysia and included 413 staff nurses, the majority of whom were female (95.4%). Regarding nursing education level, 57.5% had basic training while 42.5% had post-basic training. Additionally, the findings showed that the respondents were drawn from a variety of specialties, including anesthesia, cardiology, day care, dermatology, emergency and trauma, ear, nose, and throat, general medicine, nephrology, neurology, obstetrics and gynecology, ophthalmology, orthopedic, operating room, pediatric, psychiatry, respiratory, and surgery. Obstetrics and gynecology accounted for the biggest percentage (19.2%), while dermatology accounted for the smallest amount (0.6%). The team members had been employed by their current hospital for an average of 7.05 years ($SD = 3.92$) and were an average age of 37.93 years ($SD = 4.24$). The findings also showed that team members had been on the same team for an average of 4.51 years ($SD = 3.76$) and that they had been under their current supervisor's supervision for an average of 3.26 years ($SD = 2.87$). Finally, the team size was 4.66 individuals on average ($SD = 0.57$).

4.2 Data Aggregation

As this study operationalized the variables at the level of the team, the responses of the staff nurses to the measures were merged to provide a single score for each team. The appropriateness of aggregation was evaluated using the intraclass correlation coefficient (ICC (1) and ICC (2) [42] and within-group interrater reliability ($r_{wg}(j)$). According to Table 1, all research variables' estimated $r_{wg}(j)$ values—.90 for LMX,.92 for cooperative communication, and .95 for team effectiveness—were acceptable. It was generally permissible to construct an average rating for the team based on the intraclass correlations, ICC1 (reliability of the team means) and ICC2 (to assess whether it was appropriate to do so): LMX [.26,.72], cooperative communication [.43,.69], and team efficacy [.64,.78]. As a result, these indices facilitate the creation of group scores by combining individual ratings.

4.3 Descriptive Statistics and Correlations

Table 2 shows the averages, standard deviations, and correlations for the study's variables. On average, team effectiveness was found to be slightly high (mean = 4.54,

Table 2. Hierarchical regression analysis results

Variables	Mean	SD	LMX	Cooperative Communication	Team Effectiveness
LMX	3.75	.32	1		
Cooperative Communication	3.86	.33	.58**	1	
Team Effectiveness	4.54	.46	.14**	.18**	1

Notes: * $p < .01$; ** $p < .01$

S.D. = .46), whereas LMX was found to be moderate (mean = 3.75, S.D. = .32), and cooperative communication was found to be average (mean = 3.86, S.D. = .33). Meanwhile, significant relationship between the study’s variables were discovered ($p < .05$; $p < .01$).

4.4 Results of Hypothesis

To evaluate the study’s hypothesis, hierarchical regression analysis was used. Team size and tenure were statistically controlled demographic variables. Model 1 showed (Table 3) that LMX and cooperative communication were positively and significantly related to team effectiveness ($\beta = .36$, $p < .05$; $\beta = .72$, $p < .01$). According to the findings, predictor variables may account for 35% of the variation in team effectiveness (r^2 change = .35, F-change = 150.06, $p.01$). According to Hair et al. [43], the stronger the predictor would be in explaining the fluctuations of the dependent variable, the higher the r^2 value.

5 Discussion and Conclusion

The primary goal of our study is to examine the connection between LMX and cooperative communication with team effectiveness, as was already mentioned in the study’s objective. The results of the study demonstrated a strong correlation between LMX and cooperative communication and team effectiveness. This is consistent with past studies which have concluded the same impact of LMX and cooperative communication on team effectiveness [24, 27, 29]. This study revealed that staff nurses have certain expectations that their immediate supervisors will assist and encourage them to work effectively. For instance, a leader should be wise, compassionate, and open with their subordinates, all of which are related to the idea of openness. According to a study by Huang et al. [23], in Malaysian workplaces, the relationship distinction between leaders and members is correlated with communication openness. The norm of reciprocity, which applies to nursing teams, states that staff nurses who receive this kind of support from their leaders feel obligated to show their gratitude by exhibiting behaviours like improved job performance, job satisfaction, intention to stay, good communication, and organisational citizenship. According to the findings of the present study which is consistent with a prior study [26], better communication among team members strengthens their emotions

Table 3. Level of aggregation

Step	Dependent Variable (Team Effectiveness)
	Model 1 Std. β
Step 1: Control Variables	
Team size	.09
Team tenure	.06
Step 2: Independent variables	
LMX	.36*
Cooperative Communication	.72**
F-value	54.45
R ²	.38
Adjusted r^2	.37
R ² change	.35
F-change	150.56**

Notes: * $p < .01$; ** $p < .01$

of organisational identity, making a team a more logical place to stay. For instance, staff nurses who work well together and share knowledge about how to handle patient care and other nursing tasks effectively are more likely to get assistance from one another.

5.1 Research Implications

This study adds to the body of knowledge on LMX relationship differentiation, particularly regarding how to foster effective relationships and communication between superiors and subordinates. Our findings add to the growing body of knowledge about the relationship between superiors and subordinates. In addition, our study which was focused on the nursing setting has shed some understanding about cultural differences in the area of superior-subordinate relationships which are still scarce in healthcare-related literature.

This study has highlighted the value of nursing cooperation among staff nurses who collaborate to give patients nursing care. Competent healthcare employees and a supportive work environment are essential for providing high-quality healthcare services. Nurses who have good cooperation are able to perform their tasks more effectively, offer patients with high-quality treatment, and reducing medical errors. Our findings can be applied to improve nursing staff training and development by developing, assessing, and delivering programs and policy implementations on nursing human resources, management, research, and practice. Moreover, this study reveals that attempts to improve

teamwork, such as teamwork training and coaching staff on how to handle teamwork issues are associated with higher levels of motivation, satisfaction, and performance among nurses.

5.2 Limitations

Some limitations exist in our study. First, factors such as organizational context, team conflict, and team coordination may be crucial in predicting team performance in the healthcare setting in addition to LMX and cooperative communication. By concentrating on these factors, future researchers may decide to broaden the scope of this investigation. The study is also restricted to nurses employed in Malaysia's northern public hospitals. Other medical professionals who operate in both public and private hospitals in other locations of Malaysia could be included in the same study and further examined. The generalizability of the results would increase with a bigger sample size within the same sector.

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References

1. J.A. Irving, G.J. Longbotham, Team effectiveness and six essential servant leadership themes: A regression model based on items in the organizational leadership assessment, *International Journal of Leadership Studies*. 2(2) (2007) 98–113.
2. M.A. Rosen, D. DiazGranados, A.S. Dietz, L.E. Benishek, D. Thompson, P.J. Pronovost, S.J. Weaver, Teamwork in healthcare: Key discoveries enabling safer, high-quality care, *American Psychologist* 73(4) (2018) 433–450. <https://doi.org/10.1037/amp0000298>.
3. S. Reeves, F. Pelone, R. Harrison, J. Goldman, M. Zwarenstein, Interprofessional collaboration to improve professional practice and healthcare outcomes, *Cochrane Database Syst Rev*. 6(6) (2017). <https://doi.org/10.1002/14651858>.
4. M. Howlett, K. Doody, J. Murray, D. LeBlanc-Duchin, J. Fraser, P.R. Atkinson, Burnout in emergency department healthcare professionals is associated with coping style: a cross-sectional survey, *Emerg Med J*. 32(9) (2015), 722–727. <https://doi.org/10.1136/emered-2014-203750>.
5. M. Vagni, T. Maiorano, V. Giostra, D. Pajardi, Coping With COVID-19: Emergency Stress, Secondary Trauma and Self-Efficacy in Healthcare and Emergency Workers in Italy, *Front Psychol* 3(11) (2020), 566912. <https://doi.org/10.3389/fpsyg.2020.566912>.
6. L.E. Søvold, J.A. Naslund, A.A. Kousoulis, S. Saxena S, M.W. Qoronfleh, C. Grobler, L. Münter, Prioritizing the Mental Health and Well-Being of Healthcare Workers: An Urgent Global Public Health Priority, *Front Public Health* 7(9) (2021). <https://doi.org/10.3389/fpubh.2021.679397>.
7. J. Johnson, L.H. Hall, K. Berzins, J. Baker J, K. Melling, C. Thompson, Mental healthcare staff well-being and burnout: A narrative review of trends, causes, implications, and recommendations for future interventions. *Int J Ment Health Nurs* 27(1) (2018), 20–32. <https://doi.org/10.1111/inm.12416>.

8. P. Anand, S.K. Mishra, Linking core self-evaluation and emotional exhaustion with workplace loneliness: does high LMX make the consequence worse?, *The International Journal of Human Resource Management*, 32(10) (2021), 2124–2149. <https://doi.org/10.1080/09585192.2019.1570308>
9. R. Cropanzano, M.S. Mitchell, Social exchange theory: An interdisciplinary review, *Journal of management* 31(6) (2005), 874–900. <https://doi.org/10.1177/0149206305279602>
10. J.H. Dulebohn, W.H. Bommer, R.C. Liden, R. Brouer, G.R. Ferris, A Meta-Analysis of the Antecedents and Consequences of Leader-Member Exchange: Integrating the Past with an Eye toward the Future, *Journal of Management*, 38 (2012), 1715–1759. <https://doi.org/10.1177/0149206311415280>.
11. L. Pratici, S. Fanelli, A. Zangrandi, Not Only Funding: How Healthcare Organizations Can Contribute to National Health Service Sustainability, *International Journal of Public Administration*, 19 (2022), 1–11. <https://doi.org/10.1080/01900692.2022.2050924>
12. T. Lundstrom, G. Pugliese, J. Bartley, J. Cox, C. Guither, Organizational and environmental factors that affect worker health and safety and patient outcomes, *Am J Infect Control*, 20(2) (2002), 93–106. <https://doi.org/10.1067/mic.2002.119820>.
13. C.I. Fernandez-Lazaro, J.M. García-González, D.P. Adams, D. Fernandez-Lazaro, J. Mielgo-Ayuso, A. Caballero-Garcia, F. Moreno Racionero, A. Córdova, J.A. Miron-Canelo, Adherence to treatment and related factors among patients with chronic conditions in primary care: a cross-sectional study, *BMC Fam Pract*, 20(1) (2019), 132. <https://doi.org/10.1186/s12875-019-1019-3>.
14. E. Mackler, E.M. Segal, B. Muluneh, K. Jeffers, J. Carmichael J, Hematology/Oncology Pharmacist Association best practices for the management of oral oncolytic therapy: pharmacy practice standard, *Journal of oncology practice*, 15(4) (2019), e346–55. <https://doi.org/10.1200/jop.18.00581>
15. H.M. Gilmartin, C. Battaglia, T. Warsavage, B. Connelly, R.E. Burke, Practices to support relational coordination in care transitions: observations from the Va rural transitions nurse program, *Health Care Management Review*, 47(2) (2022), 109–114. <https://doi.org/10.1097/hmr.0000000000000300>
16. L. Rogers, A. De Brún, E. McAuliffe, Defining and assessing context in healthcare implementation studies: a systematic review, *BMC health services research*, 20(1) (2020), 1–24. <https://doi.org/10.1186/s12913-020-05212-7>
17. A. De Brún, E. McAuliffe, Identifying the context, mechanisms and outcomes underlying collective leadership in teams: building a realist programme theory, *BMC Health Services Research*, 20(1) (2020), 1–3. <https://doi.org/10.1186/s12913-020-05129-1>
18. J. R. Katzenbach, D.K. Smith, The rules for managing cross-functional reengineering teams, *Planning Review*, 21(2) (1993), 12–13. <https://doi.org/10.1108/eb054404>
19. P. Balkundi, D.A. Harrison, Ties, leaders, and time in teams: Strong inference about network structure's effects on team viability and performance, *Academy of Management Journal*, 49(1) (2006), 49–68. <https://doi.org/10.5465/AMJ.2006.22083017>
20. B. Afsar, M. Masood, Transformational leadership, creative self-efficacy, trust in supervisor, uncertainty avoidance, and innovative work behavior of nurses, *The Journal of Applied Behavioral Science*, 54(1) (2018), 36–61. <https://doi.org/10.1177/0021886317711891>
21. B.H. Mueller, J. Lee, Leader-member exchange and organizational communication satisfaction in multiple contexts, *The Journal of Business Communication*, 29(2) (2002), 220–44. <https://doi.org/10.1177/002194360203900204>
22. M.Wassem, S.A. Baig, M. Abrar, M. Hashim, M. Zia-Ur-Rehman, U. Awan, F. Amjad, Y. Nawab, Impact of capacity building and managerial support on employees' performance: The moderating role of employees' retention, *Sage Open*, 9(3) (2019), 2158244019859957. <https://doi.org/10.1177/2158244019859957>

23. C. Huang, L. Huang, Y. Wang, X. Li, L. Ren, X. Gu, L. Kang, L. Guo, M. Liu, X. Zhou, J. Luo, 6-month consequences of COVID-19 in patients discharged from hospital: a cohort study, *The Lancet*, 397(10270) (2021), 220–232. [https://doi.org/10.1016/s0140-6736\(20\)32656-8](https://doi.org/10.1016/s0140-6736(20)32656-8)
24. L. James, N. Elkins-Brown, M. Wilson, S.M. James, E. Dotson, C.D. Edwards, L. Wintersteen-Arleth, K. Stevens, P. Butterfield, The effects of three consecutive 12-hour shifts on cognition, sleepiness, and domains of nursing performance in day and night shift nurses: a quasi-experimental study, *International Journal of Nursing Studies*, 123(10) (2021). <https://doi.org/10.1016/j.ijnurstu.2021.104041>
25. P.L. Chui, M.C. Chong, K.L. Abdullah, V. Ramoo, L.Y. Tang, W.L. Lee, C.C. Che, N.A. Yahaya, K. Rasaiah, N.H. Zaini, N.Z. Ahmad, The COVID-19 global pandemic and its impact on the mental health of nurses in Malaysia, in: *Healthcare 2021*, MDPI, 2021, p. 1259. <https://doi.org/10.3390/healthcare9101259>
26. F.L. Azizan, M.A. Arifin, A.N. Shahidan, N. Othman, The Impact of Supervisor-Nurse Relationships, Cooperative Communication and Team Effectiveness: A Study of Nursing Team, *International Journal of Academic Research in Business and Social Sciences*, 11(8) (2021), 550–64. <https://doi.org/10.6007/IJARBS/v11-i8/10168>
27. E. Srulovici, A. Drach-Zahavy, Nurses' personal and ward accountability and missed nursing care: A cross-sectional study, *International Journal of Nursing Studies*, 75 (2017), 163–71. <https://doi.org/10.1016/j.ijnurstu.2017.08.003>
28. J. Lee, Leader-member exchange, the "pelz effect," and cooperative communication between group members, *Management Communication Quarterly*, 11(2) (1997), 266–87. <https://doi.org/10.1177/0893318997112004>
29. Y.Y. Wang, Q.Q. Wan, F. Lin, W.J. Zhou, S.M. Shang, Interventions to improve communication between nurses and physicians in the intensive care unit: An integrative literature review, *International Journal of Nursing Sciences*, 5(1) (2018), 81–88. [10.1016/j.ijnss.2017.09.007](https://doi.org/10.1016/j.ijnss.2017.09.007)
30. P.M. Blau, Social exchange. *International Encyclopedia Of The Social Sciences*, 7(4) (1968), 452–457. <https://doi.org/10.33206/mjss.640929>
31. K.S. Cook, C. Cheshire, E.R. Rice, S. Nakagawa, Social exchange theory, in: *Handbook of social psychology*, Springer, Dordrecht, 2013, pp. 61–88. https://doi.org/10.1007/978-94-007-6772-0_3
32. P.R. Vidyarthi, R.C. Liden, S. Anand, B. Erdogan, S. Ghosh, Where do I stand? Examining the effects of leader–member exchange social comparison on employee work behaviors, *Journal of Applied Psychology*, 95(5), 849. <https://doi.org/10.1037/a0020033>
33. R. Martin, G. Thomas, A. Legood, S. Dello Russo, Leader–member exchange (LMX) differentiation and work outcomes: Conceptual clarification and critical review, *Journal of Organizational Behavior*, 39(2) (2018), 151–68. <https://doi.org/10.1002/job.2202>
34. P. Tesluk, J.E. Mathieu, S.J. Zaccaro, M. Marks, Task and aggregation issues in the analysis and assessment of team performance, in: *Team performance assessment and measurement*, Psychology Press, 1997, pp. 209–236.
35. C.B. Gibson, A. Randel, P.C. Earley, Work team efficacy: An assessment of group confidence estimation methods, *Group and Organization Management: An International Journal*, 25(1) (2000), 67–97. <https://doi.org/10.1177/1059601100251005>
36. G.B. Graen, M. Uhl-Bien, Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *The leadership quarterly*, 6(2) (1995), 219–247. [https://doi.org/10.1016/1048-9843\(95\)90036-5](https://doi.org/10.1016/1048-9843(95)90036-5)
37. T.A. Scandura, G.B. Graen, M.A. Novak, When managers decide not to decide autocratically: An investigation of leader–member exchange and decision influence, *Journal of applied psychology*, 71(4) (1986), 579–584. <https://doi.org/10.1037/0021-9010.71.4.579>

38. J.R. Hackman, A normative model of work team effectiveness. Office of Naval Research Arlington, VA, 1983.
39. P.E. Spector, M.T. Brannick, Methodological urban legends: The misuse of statistical control variables, *Organizational Research Methods*, 14(2) (2011), 287–305. <https://doi.org/10.1177/1094428110369842>
40. R.C. Liden, B. Erdogan, S.J. Wayne, R.T. Sparrowe, Leader-member exchange, differentiation, and task interdependence: implications for individual and group performance, *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 27(6) (2006), 723–746. <https://doi.org/10.1002/job.409>
41. H.P. Sin, J.D. Nahrgang, F.P. Morgeson, Understanding why they don't see eye to eye: An examination of leader–member exchange (LMX) agreement, *Journal of Applied Psychology*, 94(4) (2009), 1048–1057. <https://doi.org/10.1037/a0014827>
42. P.D. Bliese, Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis, In: K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions*, Jossey-Bass/Wiley, San Francisco, 2000, pp. 349–381.
43. E. Hair, T.Halle, E. Terry-Humen, B. Lavelle, J. Calkins, Children's school readiness in the ECLS-K: Predictions to academic, health, and social outcomes in first grade. *Early Childhood Research Quarterly*, 21(4) (2006), 431–54. <https://doi.org/10.1016/j.ecresq.2006.09.005>

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