



## The Success of Nursing Team Cooperation in Nursing Care during Pandemic: A Scoping Review

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### ABSTRACT

The nursing care success was depended on teamwork quality and The pandemic situation could affect the increase of nurse workload in performing nursing intervention. **Objective:** Aimed to identify the factors that could affect nursing team cooperation success in performing nursing care. **Method:** The scoping review research was conducted through article identification from four databases such as ScienceDirect, ProQuest, EBSCO, and PubMed in 2019-2021 according to PRISMA-ScR. Search article by using these following keyword combinations: "teamwork OR nursing work OR partnership OR nursing team AND nursing care AND pandemic of COVID-19" to collect related articles. **Results:** Based on the result of 815 scientific article analysis, about 15 full text articles were in accordance with inclusion criteria for the research review. The internal factors which affected teamwork success in nursing care were consisted of human resource, physical condition, and psychological aspect. Meanwhile, the external factors were consisted of communication, work environment, workload, policy, and documentation. **Conclusions:** The internal and external factors could be used as a base to identify positive and negative aspects that might affect the success of nursing team performance in carrying out nursing care.

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### Kata kunci:

Asuhan Keperawatan  
Pandemi  
keberhasilan tim, dan kerjasama tim

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### ABSTRAK

Keberhasilan asuhan keperawatan tergantung pada kualitas kerjasama tim dan situasi pandemi dapat mempengaruhi peningkatan beban kerja perawat dalam melakukan intervensi keperawatan. **Tujuan:** Untuk mengetahui faktor-faktor yang dapat mempengaruhi keberhasilan kerjasama tim keperawatan dalam melakukan asuhan keperawatan. **Metode:** Penelitian scoping review ini disusun dengan mengidentifikasi artikel dari empat database seperti ScienceDirect, ProQuest, EBSCO, dan PubMed tahun 2019-2021 menurut PRISMA-ScR. Pencarian artikel dengan menggunakan kombinasi kata kunci sebagai berikut: "teamwork OR nursing work OR partnership OR nursing team AND nursing care AND pandemic of COVID-19" untuk mengumpulkan artikel yang sesuai. **Hasil:** Berdasarkan hasil analisis 815 artikel ilmiah terdapat 15 artikel teks lengkap yang memenuhi kriteria inklusi untuk digunakan dalam tinjauan penelitian. Faktor internal yang mempengaruhi keberhasilan kerja sama tim dalam melakukan asuhan keperawatan terdiri dari sumber daya manusia, kondisi fisik, dan aspek psikologis. Sedangkan faktor eksternal terdiri dari komunikasi, lingkungan kerja, beban kerja, kebijakan, dan dokumentasi. **Kesimpulan:** Faktor internal dan eksternal dapat digunakan sebagai dasar untuk mengidentifikasi aspek positif dan negatif yang dapat mempengaruhi keberhasilan kinerja tim keperawatan dalam melaksanakan asuhan keperawatan.

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## INTRODUCTION

COVID-19 is a transmittable disease which caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that occurs and spreads all over the world.(Setiawan et al., 2020) This virus can infect all levels of society with various ages.(Dalton et al., 2020) In September 2021, about 218.946.836 of world populations have been infected with COVID-19. The number of COVID-19 case in Indonesia in September 2021 has reached until 4,18 million people. This number has increased ten times higher than the first COVID-19 case in the world (WHO, 2020). The increase of case number affects the rise of workload on medical staffs. The medical staffs become the first line in handling patients during pandemic of COVID-19 (Hanggoro et al., 2020).

The nurses are the main component in hospital service system, because they have a high intensity of interaction with patients (Imallah & Kurniasih, 2021). The nurses perform their duty according to the role and function as to provide a safe and effective service according to the determined standard (Kieft et al., 2014). The nurses perform all those tasks together with the team, so it needs teamwork and discussion among team members.(Skyberg & Innvaer, 2020) The teamwork system is needed to create a balanced division of tasks, role, responsibility, and general purpose.(Mendo-Lázaro et al., 2018) The communication ability and social relationship are also required in teamwork, so the health service system can be more complex with patient-centered care (Mendo-Lázaro et al., 2018).

The success of nursing team performance is related to nursing service quality and patient satisfaction (Muhith, 2016). Thus, those aspects should be considered in the management of health service system (Li et al., 2021). This success is affected by several factors either from nurse or system built in the hospital (Prawirodihardjo, 2019). The supervision, leadership authority character, and compliance of nursing team member affect patient nursing quality (Hastuti et al., 2020). The nursing team performance and system built in an institution are a measurement standard of organizational success relating to health service (Prawirodihardjo, 2019). This article aimed to examine the factors that can affect teamwork success in performing nursing care which could increase the quality of nursing service for the society. The nursing team must know the factors that influence the success of teamwork in carrying out effective and efficient nursing care for patients during a pandemic. Nursing care that is following patient needs can improve the quality of nursing services and patient satisfaction in health services.

## METHOD

This scoping review study discussed about factors that could affect nursing teamwork success in performing nursing care during pandemic of COVID-19. The protocol in this study used PRISMA-ScR checklist to select scientific literatures that have been found from databases, so they were adjusted to identify the factors that could affect nursing team cooperation success in performing nursing care.

### *Inclusion and Exclusion Criteria*

The search of scientific articles was restricted according to inclusion criteria, in which the studies should discuss about the factors that could affect nursing teamwork success in doing nursing care at the midst of COVID-19 pandemic situation. The respondents were taken from nurses who

were performing nursing care during pandemic of COVID-19. The articles were published in database in the period of May 2019 until September 2021. We also assured that the articles were available in full text and English version. Further, the scientific literatures were result of original research with quantitative research method.

### *Literature Search Strategy and Selection Process*

The strategy of scientific literature search in this study was according to PRISMA-ScR guidelines. The selected scientific literatures should discuss factors that could influence nursing teamwork accomplishment in carrying out nursing intervention during pandemic of COVID-19. The search of data-based reputable literatures was reviewed systematically to obtain empirical evidences. Moreover, the search exerted databases of ScienceDirect, ProQuest, EBSCO, and PubMed by using these following keyword combinations: "teamwork OR nursing work OR partnership OR nursing team AND nursing care AND pandemic of COVID-19" to collect related articles due to the objectives of scoping review.

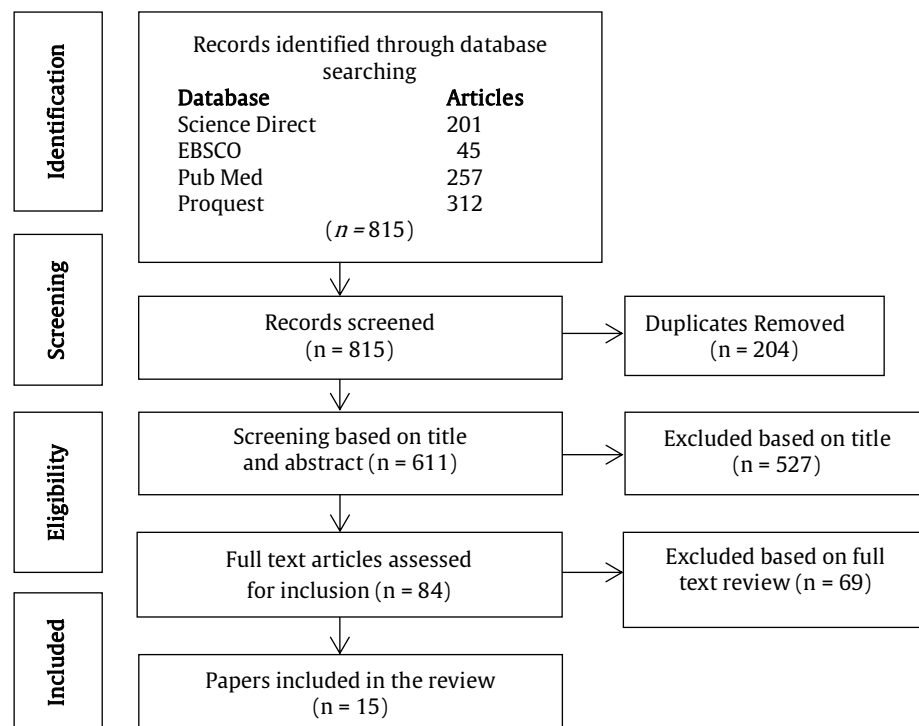
## RESULTS AND DISCUSSION

The review result showed that from the total of 815 articles consisting from 201 ScienceDirect articles, 312 ProQuest articles, 45 EBSCO articles, and 257 PubMed articles. We have identified about 69 articles to screen the full text and assess their eligibility. We found that only about 15 articles were according to the inclusion criteria and worth to be reviewed in this article. The process of literature screening was explained in figure 1 and the figure 2 would illustrate the conclusion of factors that could affect nursing teamwork from the selected previous studies included in this article, while the summary of research result was described in table 1.

The Result of Article selection Study can be described in *Flow Diagram* using PRISMA-ScR (Figure 1). This research employed the nurses who were performing nursing care during COVID-19 pandemic. The respondents were nurses who experienced an increase of nursing workload during pandemic of COVID-19. The factors that could affect nursing teamwork were composed of internal factor and external factor. Both internal and external factors were explained in figure 2. The nurses were important components who affect hospital service quality. The nurses have teamwork in carrying out nursing intervention on patients, thus, they have interaction more often with the patients. The nurse success to perform nursing care was affected by internal factors such as human resource, physical condition, and psychological aspect that would be described in detail (Figure 2).

**Table 1.**  
**Summary of study results (n=15)**

No	Author	Results
1	Fregene et al., 2020	Team communication, The environment around the team
2	Kakemam et al., 2020	Workload, workplace relocation, work time, stress, and lack of individual awareness
3	Kakemm et al, 2020	Low quality of care, fatigue that can affect the performance of the care team
4	Castello., et al, 2021	Understand roles and responsibilities
5	Tashkandi., et al, 2021	Nursing team training
6	Kadoya., et al, 2021	Lack of information, level of confidence in the success of care and self-confidence of nurses
7	Anstey et al., 2020	Collaboration, effective performance, good clinical management, team leadership and communication and change of staff and personnel
8	Beneria et al, 2020	anxiety and depression levels, Simulation, leadership, communication, situation awareness
9	Castello at al 2021	patient safety, harmonious work environment, effective communication
10	González-Gil et al., 2021	Feelings of fear of infection, increased workload, high nurse-patient ratio, lack of rest, lack of communication, emotional exhaustion and difficulty venting emotions
11	Li et al., 2021	Multidisciplinary team
12	Valdes et al, 2020	Effective team performance, improved team performance and leadership
13	Yan, 2021	collaboration of health workers, COVID-19 and Non-COVID-19 patient care and collaboration structures
14	Costa, 2020	Organizational support for worker safety, safety instructions, review and redesign of workflows, simulation
15	Lorri Zipperer et al 2021	Active collaboration, effective communication, huddles, briefings, check lists and building a safety culture



**Figure 1. Flow Diagram the Result of Article selection Study**

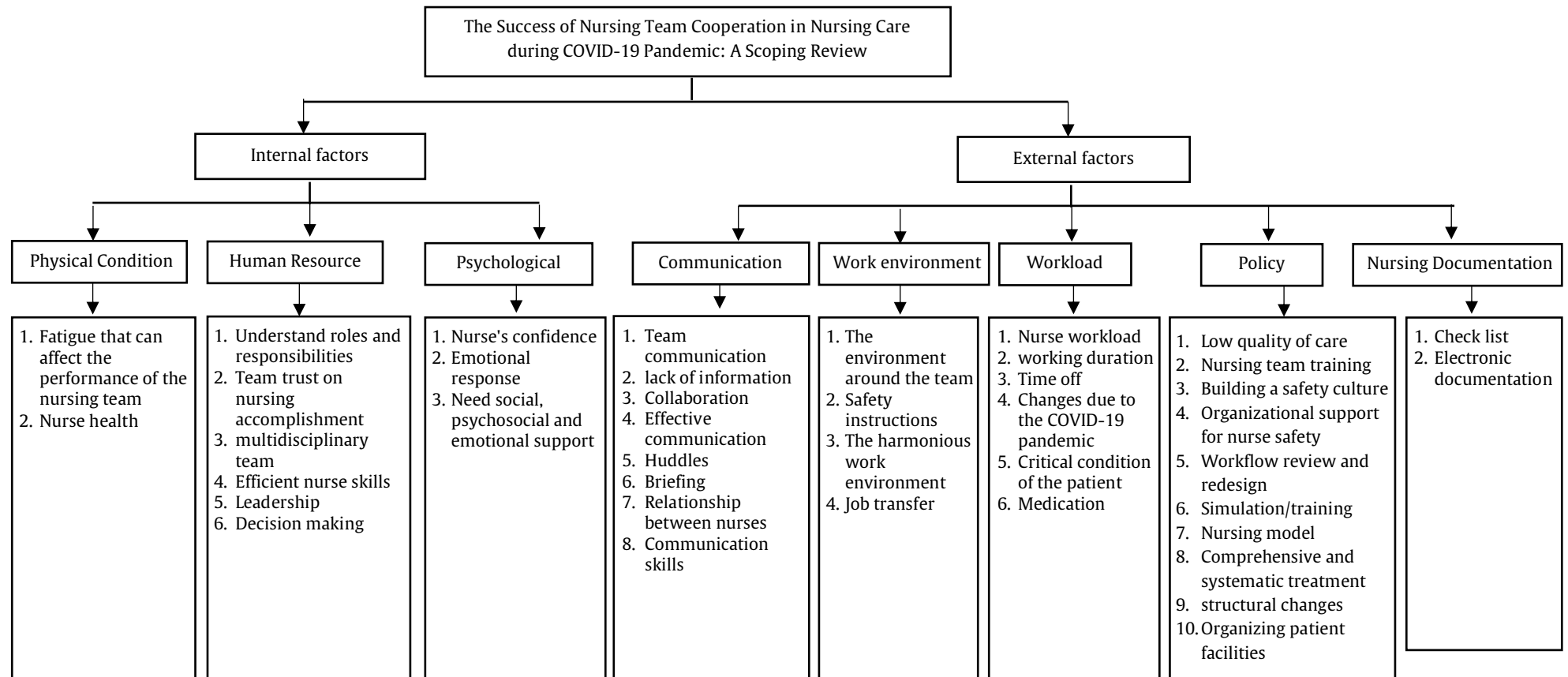


Figure 2. Illustrate the conclusion of factors that could affect nursing teamwork

### **Human Resource**

The nursing care process on patients could be conducted by multidisciplinary team consisting of doctor, nurse, and related health professionals as nutritionist, radiologist, health analyst, and many others (Greco, 2015). The medical policy identified that an effective teamwork was really significant to minimize side effects of nursing process, since they could complete each other.(Costello et al., 2021). The most important thing that the team members should understand about each responsibility and task, the individuals should also have a clear comprehension on their role in duty, available resource, and teammate abilities as competence relating to the nurse duty and preference (Costello et al., 2021). Within a team, it should be a team leader, the effective team leadership has duty to make sure that the team was well-organized, communicate clinical plan and team objective, provide and encourage feedback, facilitate conflict resolution and support teamwork (E. Anstey et al., 2020). Therefore, it needed leadership skill, communication, situational awareness to improve a good teamwork in patient nursing, especially during COVID-19 pandemic (Beneria et al., 2020).

During critical period of COVID-10, the increase of nurse firmness to make the more autonomous clinical and pharmacological management decision than during regular nursing practice before pandemic was an urgent and important thing (González-Gil et al., 2021). This decision as in American health nursing system, they have adopted changes in professional competence regulation during the critical period, for instance medical prescription removal for diagnostic test or certain diagnostic tests (Lake, 2020). Also, they allowed medication or license of advanced nurse practice for decision making without medical supervision (Centers for Medicare & Medicaid Services, 2020).

Nursing team members must understand each other's differences in attitudes and behavior when interacting in teams so that they can fulfill the competence of efficient teamwork (Costello et al., 2021). The effective teamwork was a significant factor in nurse job satisfaction at work environment which has contributed on the high quality of patient nursing (Ramsay Health Care, 2020). Moreover, the effective team could offer flexibility, efficiency, and the greater creativity, more than an individual (Costello et al., 2021). The effective team which understood and respected each other could increase team trust on nursing accomplishment (Kadoya et al., 2021). Human resources are the most valuable asset because all services and activities in the hospital are controlled by medical and non-medical personnel. The role of human resources is also very important in supporting the quality of hospital services to create patient satisfaction through the health team, especially the nursing team that treats patients for 24 hours. The potential of human resources can be used to the maximum so that good management is needed, including management policies, procedures, and systems that are applied must be able to make the nursing team feel prosperous.

### **Physical Condition**

The nurse physical condition could affect nurse performance in performing nursing care (E. Anstey et al., 2020). Ensuring the team member in healthy condition physically could affect the teamwork success, therefore, it needed periodical physical condition checkup for the nurses (E. Anstey et al., 2020). The fit physical condition affected

individual passion and ability to carry out nursing intervention (Costello et al., 2021). On the contrary, the bad health condition due to nurse burnout could drop the nursing teamwork. The nurse burnout was caused by the high nurse's work burden at clinic (Kakemam, Chegini, et al., 2021). The decrease of burnout among health professionals could improve the quality of teamwork (Costello et al., 2021). The team which has a healthy physical condition, balanced workload, and no burnout indication would affect the success of nursing care implementation (E. Anstey et al., 2020; Kakemam, Hajizadeh, et al., 2021).

The physical condition of a healthy nurse affects a person's spirit in work and activity. Nurses with a healthy physical condition can do a good job and are passionate about doing nursing care. Nurses will be easy to work with, easy to cooperate between members, and do not complain while working. Good quality of work can increase patient satisfaction in receiving nursing care. So, good physicality affects the quality of nurse performance and human relationships so that it can affect the success of the nursing team.

### **Psychological Aspect**

The nurses were high-risk population group, because they have encountered a great challenge and psychological pressure, anxiety, and depression due to the COVID-19 pandemic (Zhang et al., 2020). As the consequence of recent critical situation, the nurses who involved directly in COVID-19 patient diagnosis, medication, and nursing might develop any psychological disorder symptoms which induced to other mental health symptoms (Beneria et al., 2020). The nurses who treated COVID-19 patients have more stress symptom, anxiety, and depression. The female nurses would have more stress symptoms relating to work environment, heavy workload, long-term exhaustion, infection threat, and frustration over patient death (Beneria et al., 2020). Due to the nurse emotional response as health workers who were demanded to be always exposed with COVID-19 at workplace, they needed to develop psycho-emotional problems in short, medium, and long term, so it could be formulated which intervention given on nurses to handle their emotional problems (González-Gil et al., 2021).

The nursing team is the vanguard in the treatment of COVID-19 patients, but until now attention related to the mental health of nurses is still relatively minimal. A poor psychological state can make the performance of nurses decrease and will affect the nurse's relationship with patients and with other health teams so that it can affect cooperation in the nursing team. Special attention is needed from hospitals and governments to keep nurses physically and mentally healthy by meeting the needs of self-protection, psychological, social, and economic.

The External factor was derived from outer self or individual. This factor covered to surrounding environment, including to closest people. The external factor could be controlled by nurses or system built in the hospital. The external factors which could affect nursing team success were consisted of communication, work environment, workload, policy, and nursing documentation.

### **Communication**

To achieve teamwork success, it needed a good communication among team members (Fregene et al., 2020). The individual communication skill was also needed to build a good communication(Vermeir et al., 2018). The

development of team communication would increase team success, which the team member could express their idea and opinion to the other team members (Martin & Czurzynski, 2015). Each team member should be actively participated in a continuous internal communication process, which it was not only about information and message task, but also as planner media of all team measures (Vermeir et al., 2018). The lack of information was related to the team success, which the nurses who have minimum information about patient condition would induce indirect stress and affect teamwork success (Lapane & Hughes, 2007). Moreover, the lack of knowledge on correct infection prevention for COVID-19 case, for example Personal Protective Equipment (PPE) wear, COVID-19 patient isolation method, and infection prevention strategy during aerosol-generating procedure (Kadoya et al., 2021).

The collaboration was a crucial complex process in nursing (Ylitörmänen et al., 2019), which the teamwork and collaboration played an important role to provide a good quality of nursing on patients (Moore et al., 2019). To handle the obstacles and improve teamwork, delegation, and communication, and future intervention must be well-reconstructed at work environment in order to conduct intervention collaboration among health workers (Campbell et al., 2020). Further, a positive relationship needed reciprocal interaction and honesty among team members, openness, trust, and mutual respect (Moore et al., 2019). The good collaborative relationship involved common values, positive attitude, reflection of empathy, mutual affection and care, and happy and friendly work environment (Martin & Czurzynski, 2015; Moore et al., 2019).

The effective face-to-face communication would affect team performance (Martin & Czurzynski, 2015), since through an effective communication; it would minimize patient care time (Martin & Czurzynski, 2015; Vermeir et al., 2018). The improvement on communication skill could decrease unexpected incidents in completing nursing care on the patients (Campbell et al., 2020). The verbal communication and support would strengthen nurse relationships which finally create a healthy work environment (Ylitörmänen et al., 2019). Within the good communication, the nurse could use communication skills as concern, openness, interest in other people, and empathy during communication with each other in the team (André et al., 2017).

The nurses should create a safe space for patients so they could have a speedy recovery and improvement. Due to the characteristic of nurse profession was about treating and nursing human, there was a huge personal responsibility of nurses to perform good quality service, concerning to the patients and patient health maintenance (Campbell et al., 2020). The high work burden, burnout increase, and emotional demand to take care of other's well-being would raise physical and emotional demands. Inasmuch as the nursing profession usually carried out a great responsibility in delivering a quality nursing, it was important to maintain relationship among nurses in order to achieve the common goals (Farhadi et al., 2021; Kakemam, Chegini, et al., 2021). To build trust foundation and respect among nurses in a room through simulation, education, and full-concerned communication was significant to increase teamwork success in performing an intervention (Campbell et al., 2020). Effective communication is needed by the team in carrying out the work of all sectors, including medical teams in times of pandemics. The state of the room with various conditions of covid-19 patients requires nurses to remain focused in carrying out their work and effective

communication between team members. Effective communication can minimize misunderstandings of information conveyed and received by health workers in a team. Effective communication can create good job satisfaction and teamwork following common goals.

### ***Work Environment***

The team success in performing any nursing measures was affected by team environment (Fregene et al., 2020). The operational readiness around team environment was required to increase intervention attempts given by the team, for example work safety instruction, etc (Zipperer, 2020). The other work safety instructions were barcode medicine scanning (Khammarnia et al., 2015), computerized doctor order entry, and voluntary error reporting system (Milch et al., 2006). The environment was not only defined as a place inhabited by nurses, but the environment was broadly defined as how the nurses view position, responsibility, team member, and their ward in comprehensive perspective (Costello et al., 2021). The harmonious work environment in a team was comprised of trust, team guideline, help, understanding each other, and leadership (Costello et al., 2021). The failure to maintain a harmonious work environment would cause the loss of team focus and break teamwork focus (Fregene et al., 2020). In addition, the team success was also affected by nurse perception on team performance (Kakemam, Hajizadeh, et al., 2021). The nursing environment is not only a physical environment but also a psychological environment. The physical environment includes the availability of facilities and infrastructure while the psychic environment is in the form of support between fellow team members and effective communication. Negative environmental conditions can lead to increased stress on nurses and affect performance in the nursing team. It is necessary to maintain a conducive work environment to increase cooperation in the nursing team.

### ***Workload***

The management often increased workload in nursing care, but they did not assure about the number of staff (Dobnik et al., 2018; Lapane & Hughes, 2007). Then, the nurses could not perform nursing speed in maximal. The longer work duration and lack of break time have triggered nurse stress and finally affected team success (Dobnik et al., 2018; Kakemam, Hajizadeh, et al., 2021). The psychological demand as work burden in its relation to the available working time and interruption has forced the nurses to leave the current tasks and return later (Giménez-Espert et al., 2020).

For several years after the outbreak of COVID-19, the complexity of health nursing system was increasing which caused the emphasis of teamwork and health nursing practice need to improve the nursing quality (Kakemam, Hajizadeh, et al., 2021). The nurses were faced to a high demand, less control and social interaction (Giménez-Espert et al., 2020). The care on critical patient with COVID-19 needed the nurses to characterize relationship between team structure, nursing quality, and patient safety in order to achieve nursing team success (Yan et al., 2021). Moreover, the nurse teamwork could be performed by improving patient health and safety during the service, preventing side effects from patient medication through error reporting, so hopefully it could decrease death number and realize the team success indicator (Kakemam, Hajizadeh, et al., 2021). The workload felt by nurses who are more when dealing

directly with COVID-19 patients can affect the success of teamwork. The condition that occurs in the field is an imbalance between the number of health workers and the number of Covid-19 patients. The large number of patients entering for treatment increased the workload, causing fatigue of the nursing team. Fatigue due to increased workload affects the performance and success of the team in treating patients.

### **Policy**

The nursing performance and quality were affected by work environment and interpersonal relationship. The unsupportive interpersonal relationship and environment might cause burnout. The nurse burnout was emerged due to the exhaustion after work. The nurse who experienced burnout could decrease nursing quality on patients. The nurses and other medical team might sometimes do error due to exhaustion (Kakemam, Alireza, et al., 2021). This condition was due to the high number of patients and limited health officers. The increase of patient number since the pandemic of COVID-19 has reached hospital capacity and number of health workers. This pandemic situation has demanded nursing management to regulate the nurses well, so the patients could receive a good service and nursing quality. The nurses have worked hard at care room, emergency department and intensive care unit to provide the best nursing care on patients. The nursing team and nursing staff kept striving to give the best nursing intervention on patients during pandemic of COVID-19, so the rate of patient death and pain was lessened. The nursing management should concern on task division system and teamwork in every room in order to identify the level of team success in patient nursing (Tashkandi et al., 2021).

The nurses needed to acquire trainings related to the proper wear of personal protective equipment, the use of orotracheal intubation and mechanical ventilation and other health procedures for the treatment of patients with heart disease before the nurses came into work at the critical room. The nursing team and medical staff collaboration was really needed to handle patients during COVID-19 pandemic. In the medical collaboration, the nurses needed to build an effective and interactive communication at work, so it could achieve the success of nursing team performance. The good coordination among team members could decrease error risks at work team. The collaboration among professional workers was also a significant factor to realize the success of nursing care. The nursing profession itself was related to practice, inter professional relationship, collaboration, teamwork, and communication which all of them were associated with medical decision making and patient nursing care (Eunice & Galeno, 2020).

The teamwork skill such as communication, respect, trust, knowledge, togetherness, division of patient nursing care measures, specific duties and supportive work environment were the significant factors for nurse profession during COVID-19 pandemic. A variety of nursing model have been tried and implemented to give the best nursing service during pandemic. The nursing models that have been practices could affect the success of nursing team performance during pandemic. The nurses played a role in collaboration among health teams to conduct nursing care on patients. The duty of multi professional team should be based on problem solving principle. Moreover, they must attempt improving work effectiveness and quality, each role, knowledge of each member, and medical skill to perform actions to achieve the teamwork success (Eunice & Galeno,

2020). During the pandemic of COVID-10, the management established some changes on nursing system. The changes comprised of a good teamwork, team restructuration, team dynamics, and team leadership, personnel health and safety, safety procedure, and nursing staff skill. The system adjustment was applied at certain rooms such as Intensive Care Unit (ICU) or Intensive Cardiac Care Unit in order to handle the critical patients with COVID-19 diagnosis (D. E. Anstey et al., 2020).

The public wants safe and quality health services from the hospital during treatment. The increase in the number of patients during the pandemic increased the workload of unconscionable nurses. These conditions require the attention of stakeholders to analyze and find solutions to maintain the quality of service while maintaining the safety of patients and employees. Policymakers must be able to be better able to make policies following the situation and conditions that occur so as not to aggravate problems in the service. Recommendations and alternatives can be done in the form of guidelines for planning the needs of nurses and budget costs so that planning is following the ideal conditions expected. Stakeholders in the hospital must start working with a system of professionalism to get quality service. So, health services can be quality with increased satisfaction of patients, nurses, and other medical personnel.

### **Nursing Documentation**

The nursing documentation helped nurses to do nursing care on clients (Asmirajanti et al., 2019). They every nursing care measure either in collaborative or personal nursing (Bardach et al., 2017). The good documentation would ease nurses to perform nursing care according to standard operational procedure (SOP) (Yan et al., 2021; Zipperer, 2020). Also, it could make sure the nursing measure steps to assure patient safety, especially during the pandemic situation (Liang et al., 2020). Every health service has checklist box according to the work flow and nursing care process (Zipperer, 2020). Furthermore, the nursing care checklist was electronic-based documentation which could ease the nursing team collaboration (Yan et al., 2021). The patient information, therapy needed, and measures that have been conducted could be more organized systematically by using electronic-based documentation system (Pryor et al., 2020). The electronic-based documentation system would facilitate the nursing teamwork performance to carry out nursing care on critical patients with COVID-19 diagnosis (Yan et al., 2021).

Electronic documentation can minimize writing errors making it easier for other team members to read and carry out care as recorded. Nurses can also save time to do documentation easily through the utilization of technology. Computerized documenting can minimize work errors because the form of delegation and upbringing is clearly and systematically recorded. The use of this technology also makes it easier for nurses to collaborate between multidisciplinary. The documentation and electronic-based checklist sheet helped the nurses to have good communication and coordination, then it could achieve the success of nursing teamwork.

### **CONCLUSIONS**

The nurses were significant components in hospital service system, because they have a high intensity of

interaction with patients. The nurses worked and cooperated with the other health teams to perform nursing care on patients, thus, the nursing care success was depended on quality of teamwork. The pandemic situation could raise nurse workload in nursing task. This condition was associated with the high number of COVID-19 cases and limited number of nurses. The improvement of nursing team quality and teamwork could determine the success of nursing care on patients. The factors that could affect teamwork accomplishment in performing nursing care were consisted of internal factor and external factor. The internal factors which could affect nursing teamwork success in performing nursing care were human resource, physical and psychological condition, while the external factors which could affect team performance were communication, work environment, workload, policy, and nursing.

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### Conflict of interest

The authors have no conflict of interest with the material presented in this manuscript. The authors declare that no ethical issues may arise after the publication of this manuscript

### REFERENCES

- André, B., Nøst, T. H., Frigstad, S. A., & Sjøvold, E. (2017). Differences in communication within the nursing group and with members of other professions at a hospital unit. *Journal of Clinical Nursing, 28*(7-8), 956–963. <https://doi.org/10.1111/jocn.13410>
- Anstey, D. E., Givens, R., Clerkin, K., & Fried, J. (2020). The cardiac intensive care unit and the cardiac intensivist during the COVID-19 surge in New York City. *American Heart Journal, 227*, 74–81. <https://doi.org/10.1016/j.ahj.2020.06.018>
- Anstey, E., Givens, R., Clerkin, K., Fried, J., Kalcheva, N., Kumaraiah, D., Masoumi, A., O'Connor, D., Rosner, G. F., Wasson, L., Hammond, J., Kirtane, A. J., Uriel, N., Schwartz, A., Rabbani, L. R. E., & Abdalla, M. (2020). The cardiac intensive care unit and the cardiac intensivist during the COVID-19 surge in New York City. *American Heart Journal, 227*, 74–81. <https://doi.org/10.1016/j.ahj.2020.06.018>
- Asmirajanti, M., Hamid, A. Y. S., & Hariyati, R. T. S. (2019). Nursing care activities based on documentation. *BMC Nursing, 18*(Suppl 1), 1–5. <https://doi.org/10.1186/s12912-019-0352-0>
- Bardach, S. H., Real, K., & Bardach, D. R. (2017). Perspectives of healthcare practitioners: An exploration of interprofessional communication using electronic medical records. *Journal of Interprofessional Care, 31*(3), 300–306. <https://doi.org/10.1080/13561820.2016.1269312>
- Beneria, A., Arnedo, M., Contreras, S., Pérez-Carrasco, M., Garcia-Ruiz, I., Rodríguez-Carballeira, M., Raduà, J., & Rius, J. B. (2020). Impact of simulation-based teamwork training on COVID-19 distress in healthcare professionals. *BMC Medical Education, 20*(1), 1–7. <https://doi.org/10.1186/s12909-020-02427-4>
- Campbell, A. R., Layne, D., Scott, E., & Wei, H. (2020). Interventions to promote teamwork, delegation and communication among registered nurses and nursing assistants: An integrative review. *Journal of Nursing Management, 28*(7), 1465–1472. <https://doi.org/10.1111/jonm.13083>
- Centers for Medicare & Medicaid Services. (2020). *Trump Administration Makes Sweeping Regulatory Changes to Help U.S. Healthcare System Address COVID-19 Patient Surge*. <https://www.cms.gov/newsroom/press-releases/trumpadministration-makes-sweeping-regulatory-changes-help-us-healthcare-sistemaddress-covid-19>
- Costello, M., Rusell, K., & Coventry, T. (2021). Examining the average scores of nursing teamwork subscales in an acute private medical ward. *BMC Nursing, 20*(1), 1–10. <https://doi.org/10.1186/s12912-021-00609-z>
- Dalton, L., Rapa, E., & Stein, A. (2020). Protecting the psychological health of children through effective communication about COVID-19. *The Lancet Child and Adolescent Health, 4*(5), 346–347. [https://doi.org/10.1016/S2352-4642\(20\)30097-3](https://doi.org/10.1016/S2352-4642(20)30097-3)
- Dobnik, M., Maletič, M., & Skela-Savič, B. (2018). Work-Related Stress Factors in Nurses at Slovenian Hospitals-A Cross-Sectional Study. *Stresni Dejavniki Med Medicinskimi Sestrami V Slovenskih Bolnišnicah-Presecna Raziskava. Zdr Varst, 57*(4), 192–200. <https://doi.org/10.2478/sjph-2018-0024>
- Eunice, M., & Galeno, N. (2020). *Collaborative practices from health care teams to face the covid-19 pandemic. 73*(Suppl 6), 1–5.
- Farhadi, A., Bagherzadeh, R., Moradi, A., Nemati, R., & Sadeghmoghadam, L. (2021). The relationship between professional self-concept and work-related quality of life of nurses working in the wards of patients with COVID-19. *BMC Nursing, 20*(1), 1–9. <https://doi.org/10.1186/s12912-021-00595-2>
- Fregene, T. E., Nadarajah, P., Buckley, J. F., Bigham, S., & Nangalia, V. (2020). Use of in situ simulation to evaluate the operational readiness of a high-consequence infectious disease intensive care unit. *Anaesthesia, 75*(6), 733–738. <https://doi.org/10.1111/anae.15048>
- Giménez-Espert, M. del C., Prado-Gascó, V., & Soto-Rubio, A. (2020). Psychosocial Risks, Work Engagement, and Job Satisfaction of Nurses During COVID-19 Pandemic. *Frontiers in Public Health, 8*(November), 1–10. <https://doi.org/10.3389/fpubh.2020.566896>
- González-Gil, M. T., González-Blázquez, C., Parro-Moreno, A. I., Pedraz-Marcos, A., Palmar-Santos, A., Otero-García, L., Navarta-Sánchez, M. V., Alcolea-Cosín, M. T., Argüello-López, M. T., Canalejas-Pérez, C., Carrillo-Camacho, M. E., Casillas-Santana, M. L., Díaz-Martínez, M. L., García-González, A., García-Perea, E., Martínez-Marcos, M., Martínez-Martín, M. L., Palazuelos-Puerta, M. del P., Sellán-Soto, C., & Oter-Quintana, C. (2021). Nurses' perceptions and demands regarding COVID-19 care delivery in critical care units and hospital emergency services. *Intensive and Critical Care Nursing, 62*, 102966. <https://doi.org/10.1016/j.iccn.2020.102966>
- Greco, P. (2015). To err is human. *American Journal of Orthodontics and Dentofacial Orthopedics, 147*(2), 165.
- Hanggoro, A. Y., Suwarni, L., Selviana, & Mawardi. (2020). Dampak psikologis pandemi COVID-19 pada petugas layanan



- kesehatan : studi. *Jurnal Kesehatan Masyarakat Indonesia*, 15(2), 13–18.
- Hastuti, Y. D., Chasani, S., Ardani, M. H., Program, I. M., & Uni-, D. (2020). Vol . 5 No . 2 Nopember 2020 p-ISSN 2540-7937 e-ISSN 2541-464X FACTORS INFLUENCING NURSES ' COMPLIANCE WITH PATIENT SAFETY POLICIES IN. 5(2).
- Imallah, R. N., & Kurniasih, Y. (2021). Interprofessional Collaboration and Burnout Nurses in Hospital. *Media Keperawatan Indonesia*, 4(1), 56. <https://doi.org/10.26714/mki.4.1.2021.56-61>
- Kadoya, Y., Zen, K., Wakana, N., Yanishi, K., Senoo, K., Nakanishi, N., Yamano, T., Nakamura, T., & Matoba, S. (2021). Knowledge, perception, and level of confidence regarding COVID-19 care among healthcare workers involved in cardiovascular medicine: a web-based cross-sectional survey in Japan. *Journal of Cardiology*, 77(3), 239–244. <https://doi.org/10.1016/j.jcc.2020.07.029>
- Kakemam, E., Alireza, A., & Student, H. (2021). Nurses ' perception of teamwork and its relationship with the occurrence and reporting of adverse events : A questionnaire survey in teaching hospitals. *October 2020*, 1–10. <https://doi.org/10.1111/jonm.13257>
- Kakemam, E., Chegini, Z., Rouhi, A., Ahmadi, F., & Majidi, S. (2021). Burnout and its relationship to self-reported quality of patient care and adverse events during COVID-19: A cross-sectional online survey among nurses. *Journal of Nursing Management*. <https://doi.org/10.1111/jonm.13359>
- Kakemam, E., Hajizadeh, A., Azarmi, M., Zahedi, H., Gholizadeh, M., & Roh, Y. S. (2021). Nurses' perception of teamwork and its relationship with the occurrence and reporting of adverse events: A questionnaire survey in teaching hospitals. *Journal of Nursing Management*, 29(5), 1189–1198. <https://doi.org/10.1111/jonm.13257>
- Khammarnia, M., Kassani, A., & Eslahi, M. (2015). The efficacy of patients' wristband bar-code on prevention of medical errors: a meta-analysis study. *Applied Clinical Informatics*, 6, 716–727.
- Kieft, R. A. M. M., De Brouwer, B. B. J. M., Francke, A. L., & Delnoij, D. M. J. (2014). How nurses and their work environment affect patient experiences of the quality of care: A qualitative study. *BMC Health Services Research*, 14(1), 1–10. <https://doi.org/10.1186/1472-6963-14-249>
- Lake, E. T. (2020). How effective response to COVID-19 relies on nursing research. *Research in Nursing and Health*, 43(3), 213–214. <https://doi.org/10.1002/nur.22025>
- Lapane, K. L., & Hughes, C. M. (2007). Considering the Employee Point of View: Perceptions of Job Satisfaction and Stress Among Nursing Staff in Nursing Homes. *Journal of the American Medical Directors Association*, 8(1), 8–13. <https://doi.org/10.1016/j.jamda.2006.05.010>
- Li, S., Zhang, H., Chen, M., Wang, Z., & Lin, Y. (2021). A multidisciplinary team nursing model in the treatment of patients undergoing transapical mitral valve clamping: a prospective study. *Journal of Cardiothoracic Surgery*, 16(1), 1–10. <https://doi.org/10.1186/s13019-021-01588-7>
- Liang, C., Zhou, S., Yao, B., Hood, D., & Gong, Y. (2020). Toward systems-centered analysis of patient safety events: Improving root cause analysis by optimized incident classification and information presentation. *International Journal of Medical Informatics*, 135, 104054. <https://doi.org/10.1016/j.ijmedinf.2019.104054>
- Martin, H. A., & Ciurzynski, S. M. (2015). Situation, Background, Assessment, and Recommendation-Guided Huddles Improve Communication and Teamwork in the Emergency Department. *Journal of Emergency Nursing*, 41(6), 484–488. <https://doi.org/10.1016/j.jen.2015.05.017>
- Mendo-Lázaro, S., León-del-Barco, B., Felipe-Castaño, E., Polodel-Río, M. I., & Iglesias-Gallego, D. (2018). Cooperative team learning and the development of social skills in higher education: The variables involved. *Frontiers in Psychology*, 9(AUG). <https://doi.org/10.3389/fpsyg.2018.01536>
- Milch, C. E., Salem, D. N., Pauker, S. G., Lundquist, T. G., Kumar, S., & Chen, J. (2006). Voluntary electronic reporting of medical errors and adverse events. *Journal of General Internal Medicine*, 21, 165–170.
- Moore, J., Prentice, D., Crawford, J., Lankshear, S., Limoges, J., & Rhodes, K. (2019). Collaboration among registered nurses and practical nurses in acute care hospitals: A scoping review. *Nursing Forum*, 54(3), 376–385. <https://doi.org/10.1111/nuf.12339>
- Muhith, A. (2016). Nursing Service Quality Model Based on Nursing Performance and Patient Satisfaction Analysis in Gresik District Hospital. *Journal of Health, Medicine and Nursing*, 23, 48–54.
- Prawirodihardjo, L. (2019). Analysis of Factors That Influence The Performance of Nurses In Mother and Child General Hospital And Mother and Child Private Hospital, Makassar City. ... *International Journal of Health Research* ..., 1(01), 36–46. <http://journal-old.unhas.ac.id/index.php/HIJHRS/article/view/7246>
- Pryor, R., Atkinson, C., Cooper, K., Doll, M., Godbout, E., Stevens, M. P., & Bearman, G. (2020). The electronic medical record and COVID-19: Is it up to the challenge? *American Journal of Infection Control*, 48(8), 966–967. <https://doi.org/10.1016/j.ajic.2020.05.002>
- Ramsay Health Care. (2020). *Care. Our Businesses*. <https://www.ramsayhealth.com.au/>.
- Setiawan, D., Musawaris, R. F., Haryono, W., & Faried Lubis, T. A. (2020). *Studi Retrospektif: Prevalensi Coronavirus Disease 2019 Di RSUD Dr. Soedarso Periode Februari - Oktober 2021*, 1(3), 211. <http://garuda.ristekbrin.go.id/documents/detail/1868884>
- Skyberg, H. L., & Innvaer, S. (2020). Dynamics of interprofessional teamwork: Why three logics are better than one. *Social Science and Medicine*, 265, 113472. <https://doi.org/10.1016/j.socscimed.2020.113472>
- Tashkandi, N., Aljuaid, M., McKerry, T., Alchin, J., Taylor, L., Catanguai, E. J., Mulla, R., Sinnappan, S., Nammour, G., El-Saed, A., & Alshamrani, M. M. (2021). Nursing strategic pillars to enhance nursing preparedness and response to COVID-19 pandemic at a tertiary care hospital in Saudi Arabia. *Journal of Infection and Public Health*, 14(9), 1155–1160. <https://doi.org/10.1016/j.jiph.2021.06.016>
- Vermeir, P., Blot, S., Degroote, S., Vandijck, D., Mariman, A., Vanacker, T., Peleman, R., Verhaeghe, R., & Vogelaers, D. (2018). Communication satisfaction and job satisfaction among critical care nurses and their impact on burnout and intention to leave: A questionnaire study. *Intensive and Critical Care Nursing*, 48, 21–27. <https://doi.org/10.1016/j.iccn.2018.07.001>
- WHO. (2020). *Coronavirus Disease COVID-19 pandemic*. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
- Yan, C., Zhang, X., Gao, C., Wilfong, E., Casey, J., France, D., Gong, Y., Patel, M., Malin, B., & Chen, Y. (2021). Collaboration structures in COVID-19 critical care: Retrospective network

- analysis study. *JMIR Human Factors*, 8(1), 1–12.  
<https://doi.org/10.2196/25724>
- Ylitörmänen, T., Turunen, H., Mikkonen, S., & Kvist, T. (2019). Good nurse–nurse collaboration implies high job satisfaction: A structural equation modelling approach. *Nursing Open*, 6(3), 998–1005.  
<https://doi.org/10.1002/nop2.279>
- Zhang, W. R., Wang, K., Yin, L., Zhao, W. F., Xue, Q., Peng, M., Min, B. Q., Tian, Q., Leng, H. X., Du, J. L., Chang, H., Yang, Y., Li, W., Shangguan, F. F., Yan, T. Y., Dong, H. Q., Han, Y., Wang, Y. P., Cosci, F., & Wang, H. X. (2020). Mental Health and Psychosocial Problems of Medical Health Workers during the COVID-19 Epidemic in China. *Psychotherapy and Psychosomatics*, 89(4), 242–250.  
<https://doi.org/10.1159/000507639>
- Zipperer, L. (2020). *COVID-19: Team and Human Factors to Improve Safety*. July, 1–8.