



Strategy For Implementing Isolation Precautions in The Hemodialysis Services At The HD Clinic of Nitipuran During the Period of Covid-19 Pandemic

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ABSTRACT

COVID-19 outbreak is a challenge for health facilities in providing guarantees for patient safety and work safety. The dialysis clinic has high risk and vulnerable environment to the spread of COVID-19, but it has to keep providing services to patients with chronic kidney disease. One way to ensure quality and patient safety is to apply isolation precautions. This type of study was mix method research, with a sequential explanatory approach. The population in this study was nurses and doctors at the HD Clinic of Nitipuran. Sampling technique in the quantitative research used total sampling, while qualitative research used purposive sampling technique. Quantitative data analysis was Spearman rank analysis, while qualitative research used Miles and Huberman analysis. The behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran was carried out more strictly, supported by a high level of hygiene awareness, supervision and management support. However, the high workload and inadequate infrastructure are obstacles was carried out isolation precautions. Factors related to the behavior of isolation precautions were namely education, knowledge, training, attitudes, cultural values, motivation, supervision, management support and environmental facilities. The strategy for implementing isolation precautions was namely the SO strategy was in the first quadrant which had the highest score, with priorities in making policies and efforts to prevent post-exposure infections, increasing the efficiency of facilities and infrastructure and always reviewing policies and internal guidelines.

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ABSTRAK

Kata kunci:

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Wabah COVID-19 menjadi tantangan bagi fasilitas kesehatan dalam memberikan jaminan keselamatan pasien dan keselamatan kerja. Klinik dialysis memiliki lingkungan yang berpotensi tinggi dan rawan penyebaran COVID-19, namun harus tetap memberikan pelayanan pada penderita penyakit ginjal kronik. Salah satu cara untuk menjamin mutu dan keselamatan pasien adalah dengan menerapkan kewaspadaan isolasi. Jenis penelitian ini merupakan jenis penelitian mix method, dengan pendekatan sequential explanatory. Populasi dalam penelitian ini adalah perawat dan dokter klinik HD Nitipuran. Teknik sampling pada penelitian kuantitatif menggunakan total sampling dan penelitian kualitatif menggunakan teknik purposive sampling. Analisis data kuantitatif dengan analisis spearman rank, sedangkan penelitian kualitatif menggunakan analisis miles and huberman. Perilaku penerapan kewaspadaan isolasi pada pelayanan hemodialysis di Klinik HD Nitipuran dilakukan lebih ketat, didukung kesadaran kebersihan dan pengawasan serta dukungan manajemen yang tinggi. Beban kerja yang tinggi dan sarana prasana yang belum memadai

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menjadi penghambat dalam melakukan kewaspadaan isolasi. Faktor yang berhubungan dengan perilaku kewaspadaan isolasi yaitu factor pendidikan, pengetahuan, pelatihan, sikap, nilai budaya, motivasi, supervise, dukungan manajemen dan sarana lingkungan. Strategi penerapan kewaspadaan isolasi diketahui bahwa strategi SO berada di kuadran pertama memiliki skor tertinggi, dengan prioritas membuat kebijakan dan upaya dalam pencegahan terjadinya infeksi paska pajanan, meningkatkan daya guna fasilitas sarana dan prasarana serta selalu melakukan peninjauan kembali terkait kebijakan dan pedoman internal.

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INTRODUCTION

COVID-19 is a new corona virus that was reported to have emerged in Wuhan, China at the end of December 2019. The outbreak of Corona Virus Disease 2019 (COVID-19) has become a challenge for health care facilities in providing guarantees for patient safety and work safety. Health care facilities must immediately be able to adapt to the new order and be able to provide harmless services for patients and staff on duty (Corbett et al., 2020). A Transmission of the COVID-19 virus can occur from human to human through close contact with COVID-19 patients and droplets, but there is no scientific evidence that this virus can be transmitted through the air. In addition, the dialysis unit is a source of transmission of HBV, HIV and HCV infection. These infections can come from patients, medical and non-medical personnel as well as all visitors (Basile et al., 2020). During the pandemic, patients with Chronic Kidney Disease (CKD) undergoing dialysis still have to make visits to dialysis centers both in hospitals and hemodialysis clinics to undergo routine dialysis on a bi-weekly basis weeks (Basile et al., 2020). CKD patients also cannot suspend treatment (routine hemodialysis measures) and have a poor prognosis (Karkar et al., 2014). In addition, if a CKD patient becomes infected, the dialysis service will require specialized resources and staff which are further complicated by the requirements for isolation, control and prevention of infection. Therefore, all measures taken to eradicate the pandemic and to control the rate of uncontrolled incidents must be taken very seriously (Moura-Neto et al., 2020).

With the COVID-19 pandemic, the government needs to implement policies to fight the COVID-19 pandemic. Based on research (Purnomo et al., 2022) states that the six ASEAN countries are disproportionate in their policies towards the COVID-19 pandemic. The government must increase its responsiveness and preparation to increase national capacity during the COVID-19 pandemic (Dewi et al., 2020). The present study (Hu et al., 2021) describes a practical workflow for patient-centered management during the COVID-19 outbreak. Recommendations to prevent or control infections applied in dialysis installations/units during the COVID-19 pandemic are to change the standard operating procedures for dialysis procedures.

Various strategies have been designed by health facilities in order to ensure the quality and safety of patients, even though they are faced with the problem of limited facilities and infrastructure at the Dialysis Clinic during the COVID-19 pandemic. One way to ensure quality and patient safety is to apply isolation precautions. In an effort to suppress infection, health facilities need to increase the application of isolation

precautions, which consist of two pillars, namely standard precautions and transmission-based precautions (Basile et al., 2020). In addition to standard precautions, it is necessary to apply transmission precautions in the dialysis unit. Precautions for transmission that occur through contact are carried out to avoid the risk of HAIs caused by direct/indirect contact (Karkar et al., 2014). According to Hu et al (2020) direct evidence of infection was detected in five cases. Close monitoring of temperature and oxygen saturation is required during hemodialysis sessions and a portable dialysis machine is urgently needed to ensure the provision of dialysis care.

Standard precautions and transmission precautions as well as special procedures are recommended to avoid the risk of transmitting infections such as HBV, HCV and HIV in dialysis facilities. With an effective infection control program in place, infection prevention becomes part of the dialysis facility culture and results in increased patient safety (CDC, 2020). All elements in service facilities including all visitors and health care workers must always comply with the established program (Moura-Neto et al., 2020). There is considerable variation in the application of infection control and prevention across dialysis facilities. Overall adherence to recommended practices was 68% (range, 45%-92%) in all facilities (Chenoweth et al., 2015).

A person's compliance or behavior in Lawrence Green's theory can be influenced by several factors including predisposing factors, enabling factors and reinforcing factors (Notoatmodjo, 2013). A serious gap is seen between HD staff knowledge and compliance to infection control and prevention recommendations. The results obtained in Tabash's study were that there were no nurses (0%) who washed their hands before and after different activities that required hand washing. In addition, less than half of the nurses (47.1%) were correct and knew that they should wash their hands before and after treating patients (Tabash & Ashraf, 2018). Policies on infection control prevention and practice protocols adapted for dialysis need to be studied further (Shou Chi Hu, 2020).

The results of studies conducted by previous researchers, there were serious differences in staff knowledge about HbsAg and HCV infection in hemodialysis services. It is necessary to carry out structured training to increase staff knowledge so that it can reduce the risk of increasing seroconversion rates (Mukhtad et al., 2019). Another study showed that 81.1% of nurses' compliance toward standard precautions was influenced by individual factors (self-efficacy and ethical awareness), while only 18.9% was influenced by organizational factors (safety environment and organizational culture) (Kim & Lee, 2021).

METHOD

Research Design

This type of research was a mixed method research with a sequential explanatory approach. The subjects of this study were nurses and doctors at the Hemodialysis Clinic of Nitipuran which consisted of 15 nurses and 2 doctors. The object of this research was behavior in the implementation of isolation precautions and strategies in increasing the behavior of implementing isolation precautions.

Population, Sample dan Sampling Procedures

The population in this study was nurses and doctors at the HD clinic of Nitipuran. Samples and sampling from quantitative research was obtained by the total sampling method, namely all nurses and doctors registered as 17 employees of the HD Clinic of Nitipuran. Meanwhile, the qualitative research of the study was by purposive sampling method; 7 people were selected who are proficient in dialysis and general practitioners who have worked at the HD Clinic of Nitipuran for more than 2 years.

Instrument

The quantitative research instrument used in this study was a closed questionnaire with a Likert scale of 1-4 (Sugiyono, 2014). The qualitative instrument used an in-depth interview guide.

Validity and Reliability Test

The validity test of quantitative research used the Product Moment test and the reliability test in this study used the Cronbach Alpha value (Ghozali, 2013). Test the validity of qualitative research using source triangulation.

Data analysis

Quantitative data analysis in this study was univariate and bivariate (spearman rank) (Riwidikdo, 2012), qualitative analysis used the Milles & Huberman method (Sugiyono, 2014), and as a final point used SWOT analysis (Suwarsono, 2008).

RESULTS AND DISCUSSIONS

Qualitative Analysis

Observation Results

Observation was conducted by looking at CCTV without being noticed by the health workers. The subjects in this study were 15 nurses and 2 doctors at the HD Clinic of Nitipuran. The description of the respondents 17 medical personnel. All the medical personals conducted the isolation precautions compliance behavior, namely wearing masks during the action, washing hands before aseptic actions, carefully managing infectious linen and dirty, disinfecting machines after the procedure, conducting waste management properly between infectious waste, getting additional vitamins, getting vaccinations for nurses against infectious diseases such as hepatitis, TB, non-infectious and sharp objects, distinguishing patients by type of disease (infectious and non-infectious), performing coughing and spitting etiquette correctly, using N95 masks when handling patients at risk of droplet transmission, and placing patients at risk of airborne transmission in isolation rooms.

Interview Results

Interviews through focus group discussions with 17 participants were divided into two groups. The first group consisting of 7 nurses and 1 doctor had a discussion in Wednesday, November 10, 2021, from 09.00 to 10.30 WIB in the meeting room at the HD Clinic of Nitipuran. The second group consisting of 6 nurses and 2 doctors held a discussion in Wednesday, November 10, 2021, from 13.00 to 14.30 WIB in the meeting room of the HD Clinic of Nitipuran

Table 1
Characteristics of the FGD participants on how to change behavior and barriers to the application of isolation precautions at the HD clinic of Nitipuran (n = 7)

| Partisipants | Ages | Profession | Gender | Length of Work |
|--------------|------|------------|--------|----------------|
| P1 | 28 | Nurse | Female | >2 years |
| P2 | 34 | Nurse | Femal | >2 years |
| P3 | 29 | Nurse | Male | >2 years |
| P4 | 36 | Nurse | Female | >2 years |
| P5 | 29 | Nurse | Male | >2 years |
| P6 | 32 | Nurse | Male | >2 years |
| P7 | 31 | Nurse | Female | >2 years |

Source: data processed by Excel and SPSS in 2021

Table 2.
Behavior of Isolation Precautions (standard and transmission) on Hemodialysis at HD Clinic of Nitipuran during the COVID-19 Pandemic

| Axial Coding | Sub theme | theme |
|---|---|--|
| Do personal hygiene | Awareness changes behavior | High awareness in protecting themselves by maintaining personal and environmental hygiene (S). |
| More frequent washing hands. | The habit of maintaining cleanliness | |
| More Frequent using of hand sanitizer. | | |
| Carry out disinfecting cleaning of equipment | Use available personal protective equipment. | The knowledge of nurses is partly low due to lack of education and training (W). |
| Use complete personal protective equipment such as gloves, masks, eye protection, hats, gowns, and foot protection. | There is a gap between HD staff knowledge and compliance to infection control and prevention recommendations. | |
| There has been no training/information on how to dispose of media waste. | | |
| Socialization of isolation awareness training is still rare | | |
| There is no training on the proper use of PPE | | |

| Axial Coding | Sub theme | theme |
|---|---|--|
| Negligence of nurses due to rush in serving patients. There is overtime if someone is permit/sick. A large number of patients. | High workload and lack of proper staff and disruption to nursing practice. | |
| Supervision by the head nurse in using PPE Providing training seminars frequently during the COVID-19 pandemic. Providing supplements to increase stamina. The Existence of SOP related to PPI. Policies related to changes in service flow during the pandemic Carrying strict screening to prevent transmission of infection | Implementation of high nursing supervision. Management support for health workers Management policy in limiting exposure to infection | The high level of supervision and management support in providing supervision (O). |
| Limited logistics available such as dresses, logos, on bins etc. | Limited logistics and health facilities | Inadequate infrastructure (T). |

Source: data processed by excel in 2021

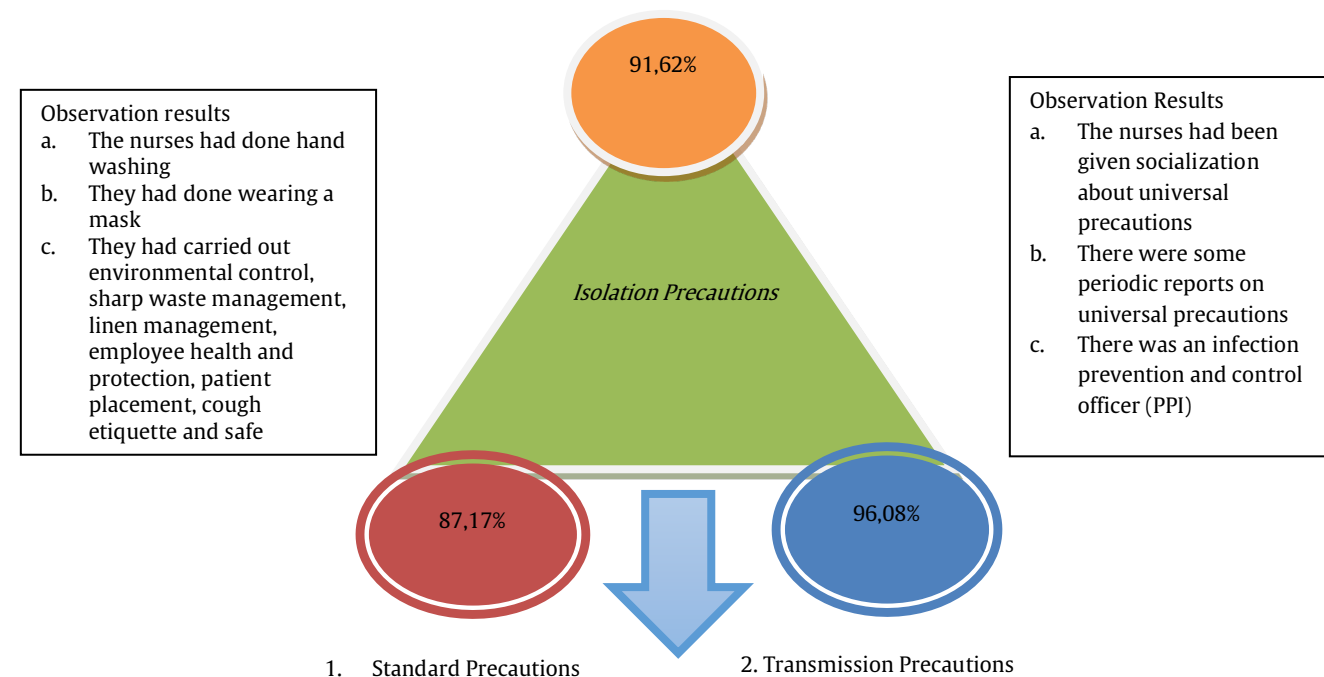
Based on Table 1, the age range of the FGD participants was 28 to 36 years, all of the participants were skilled nurses who had served in the dialysis service of the HD Clinic of Nitipuran for more than 2 years.

Based on Table 2 of the FGD results, it shows that there are 4 themes that can support the SWOT analysis later. Overall, it can be concluded that the tendency of high awareness in protecting oneself and the environment as a strength, while weaknesses related to knowledge and behavior of nurses due to lack of education and training.

Opportunities related to the high level of supervision and management support provided to nurses, and threats related to the condition of inadequate facilities and infrastructure.

Documentation Results

The documentation from this research was several photos related to the isolation precautions behavior in the hemodialysis service at the clinic during the COVID-19 pandemic (Figure 1 and 2).



| Interview Results |
|--|
| <ol style="list-style-type: none"> The nurses had awareness of hand hygiene but sometimes forgot and used personal protective equipment consistently, even though some of the facilities are incomplete They had insufficient knowledge and behavior due to lack of training in the use of PPE and high workload There was high supervision with regular supervision and management support for health workers and management policies in limiting exposure to infection There was inadequate infrastructure such as lack of protective gowns and limited facilities for sinks, changing rooms and the absence of slogans/posters related to washing hands |

Figure 3
The behavior of implementing isolation precautions (standard and transmission) in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic



Figure 1. The Use of PPE



Figure 2. Disinfecting Equipments

Quantitative Analysis

Table 3
Distribution of the frequency of the health workers in the hemodialysis services at the HD clinic of Nitipuran during the COVID-19 pandemic (N=17)

| Variable/Category | N | % |
|--------------------------|----|-------|
| Age | | |
| 20-25 years | 5 | 29,4% |
| 26-35 years | 9 | 52,9% |
| >36 years | 3 | 17,6% |
| Gender | | |
| Male | 4 | 23,5% |
| Female | 13 | 76,5% |
| Education | | |
| D3 Nursery | 12 | 70,6% |
| S1 Ners (Professional) | 3 | 17,6% |
| S1 (Professional Doctor) | 2 | 11,8% |
| Length of work | | |
| <1 year | 9 | 52,9% |
| 1-5 years | 5 | 29,4% |

Source: data processed by Excel and SPSS in 2021

Table 3 shows that the majority of health workers were aged 26-35 years of 9 people (52.9%) and those aged >36 years of 3 people (17.6%). Genders of the health workers are largely women of 13 people (76.5%). The most recent education of health workers was D3 Nursing of 12 people (70.6%). Most of the health workers who had length of work

less than one year of 9 people (52.9%), and those who had length of work more than five years of 3 people (17.6%) wore masks during the procedure and the room was sterilized (fogging) on a scheduled basis, managed waste properly between infectious, non-infectious and sharp objects and got socialization on universal precaution.

Table 4 of the results of the analysis shows that the predisposing factors related to isolation precautions behavior in the hemodialysis services were education, knowledge, training, attitudes, cultural values and motivation, while the variables of age, gender and length of work had no correlation with isolation precautions behavior in the hemodialysis services as a significant value ($p > 5\%$). The results of the analysis shows that the enabling factors for supervision and management support variables were correlated with isolation precautions behavior in the hemodialysis services with a significant value ($p < 5\%$). The results of the analysis show that there was a correlation between reinforcing factors, namely the condition of infrastructure and isolation precautions behavior in the hemodialysis services as the significant value ($p < 5\%$).

SWOT ANALYSIS

The data from the quantitative and qualitative research analyzed could identify strengths, weaknesses, challenges and threats which were then analyzed in a SWOT analysis. Strategy of Isolation Precautions at the HD Clinic of Nitipuran.

Table 4.
Correlation of Predisposing Factors, Enabling Factors and Reinforcing Factors with Isolation Precautions Behavior in the hemodialysis services at HD Clinic of Nitipuran During the COVID-19 Pandemic

| Predisposing factors | p-value | Enabling factors | P-value | Reinforcing factors | p-value |
|--------------------------|---------|---------------------|---------|---------------------|---------|
| Age | 0,938 | Nursery Supervision | 0,011 | Infrastructure | 0,008 |
| Gender | 0,143 | Management Support | 0,000 | | |
| Education | 0,000 | | | | |
| Length of work | 0,942 | | | | |
| Knowledge | 0,009 | | | | |
| Training | 0,001 | | | | |
| Attitude and beliefs | 0,003 | | | | |
| Cultural values | 0,008 | | | | |
| Motivation of perception | 0,000 | | | | |

Table 5
Strategies for implementing isolation precautions

| Partisipants | FGD | Theme | S,W,O,T |
|--------------|--|-----------------|---------|
| P1 | "...there were already SOPs related to PPI..." | Policies and | S |
| P3 | "There was a policy from the leadership..." | Guidelines | S |
| P7 | "Regulations were changing during this pandemic..." | | T |
| P2 | "Socialization of SOPs for all staff was carried out regularly and continuously" | | O |
| P1,P4,P5 | "The availability of facilities was highly supportive..." | Facilities and | S |
| P2, P7 | "...sometimes the availability of PPE was incomplete" | Infrastructure | W |
| P3 | "... we got PPE assistance from various parties which were very helpful when there was a shortage of PPE" | | O |
| P2 | "...colleagues influenced my behavior..." | Cultural work | S |
| P5 | "...if someone reminded me to be more alert and obedient" | | S |
| P6 | "...if my friend was lazy sometimes too lazy .." | | |
| P7 | "...sometimes I hesitated to reprimand my friends" | | W |
| P1 | "...I always worked passionately, and stick to procedures" | | W |
| P4 | "The workload was quite heavy, overtime if someone was permitted to..." | | S |
| P3 | "...because there were nurses who were sick and they had self-isolation, so there was a lot of overtime, during COVID-19 we really have to maintain stamina" | | W |
| | | | W |
| P2 | "...I realized that following the rules makes me safer" | <i>Awarness</i> | S |
| P7 | "...sometimes I would like to forget because it had not become a habit" | | W |
| P1 | "Good management support..." | Motivations and | S |
| P2 | "We got supplements to increase stamina..." | supports | S |
| P4 | "...there was no incentive to deal with COVID-19 cases..." | | W |
| P7 | "With the increasing number of COVID-19 cases, I had to become more obedient..." | | O |
| P3 | "...the importance of reward and punishment..." | | W |

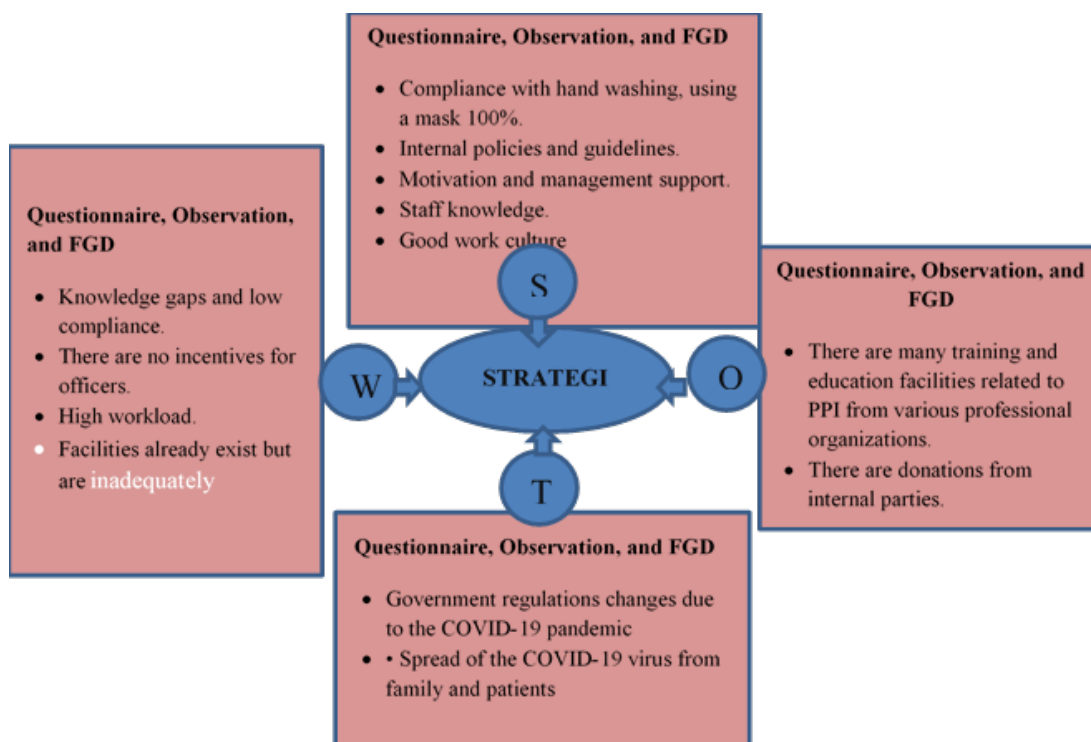


Figure 3.
Strategy for implementing isolation precautions in the hemodialysis services at the HD clinic of Nitipuran during the COVID-19 pandemic

IFAS Matrix (Internal Strategic Factors Summary)

IFAS matrix analysis is to analyze, explain, and evaluate the factors that exist in the internal environment of the HD

Clinic of Nitipuran in the form of strengths and weaknesses of the institution. The IFAS analysis can be seen in the table 6.

Based on the results of the IFAS table analysis (table 6), the strength of each element was 1.96 and the weakness was 0.84, so the total weighted score in the IFAS table was 1.12. This showed that the strength of the strategy of the Isolation Precautions implementation was greater than the existing weaknesses.

The rating of each factor in the IFAS table above showed various ratings ranging from 2 means below the average, 3

means average, 4 means above average and 5 means very good. The total strength-weighted score showed 1.96 and the weakness-weighted total score is 0.84, the difference between strengths and weaknesses is 1, meaning that it responded to internal strategy factors with existing strengths in terms of the level of importance of these factors for the HD Clinic of Nitipuran.

Table 6
Matrix Assessment (Internal Strategic Factors Summary)

| 1 | 2 | 3 | 4 |
|---|--------|--------|----------|
| Factor of Internal Strategies | Weight | Rating | Weighted |
| Strenghts | | | |
| 1. Compliance with washing hands before action and wearing a mask | 0,14 | 4 | 0,56 |
| 2. Internal Policies and Guidelines | 0,14 | 2 | 0,28 |
| 3. Management motivation and support | 0,14 | 3 | 0,42 |
| 4. officers knowledge | 0,14 | 2 | 0,28 |
| 5. good cultural work | 0,14 | 3 | 0,42 |
| strenght total scores | | - | 1,96 |
| Weakness | | | |
| 1. There was a gap between HD staff knowledge and compliance to infection control and prevention recommendations. | 0,14 | 3 | 0,42 |
| 2. High workload and lack of proper staff and disruption to nursing practice | 0,14 | 3 | 0,42 |
| Weakness total scores | 1 | - | 0,84 |
| Strenght-weakness scores (Linier line point) | - | - | 1,12 |

Source: data processed by excel and spss in 2021

Tabel 7
Analysis of EFAS Matrix (eksternal Strategic Factors Summary)

| 1 | 2 | 3 | 4 |
|---|--------|--------|----------|
| eksternal Strategic Factors | Weight | Rating | Weighted |
| Opportunity: | | | |
| 1. Training and Education facilities related to PPI from various professional organizations | 0,25 | 4 | 1,00 |
| 2. Contributions from external parties | 0,25 | 4 | 1,00 |
| Opportunities total scores | | | 2,00 |
| Threats: | | | |
| 1. Government regulations that change due to the covid-19 pandemic | 0,25 | 3 | 0,75 |
| 2. Spread of COVID 19 virus from family and patients | 0,25 | 2 | 0,50 |
| threat total scores | 1 | - | 1,25 |
| Opportunities-threat scores (Point of vertical line y) | | | 0,75 |

Table 8. SWOT Analysis Strategy for Implementing Isolation Precautions

| | | |
|---|---|--|
| | <p>Strength (S)</p> <ol style="list-style-type: none"> 1. Compliance with hand washing, using a mask 100% 2. Internal policies and guidelines 3. Motivation and management support 4. Officers' knowledge 5. Good work culture | <p>Weeknes (W)</p> <ol style="list-style-type: none"> 1. There was a gap between knowledge of HD staffs and compliance to low isolation precautions. 2. High workload and lack of infrastructure |
| <p>Peluang (O)</p> <ol style="list-style-type: none"> 1. Many training and education facilities related to PPI from various professional organizations 2. Contributions from external parties | <p>SO Strategies</p> <ol style="list-style-type: none"> 1. Make policies that can break the chain of infection transmission and make efforts to prevent post-exposure infections. 2. Improve the usability of facilities and infrastructure both internally and externally. 3. Review frequently internal policies and guidelines socialize it to all staff. | <p>WO Strategies</p> <ol style="list-style-type: none"> 1. Increase immunity and make the infectious agents inactive. 2. Fulfillment of HR according to competence, facilities and infrastructure as well as periodic maintenance. |
| <p>Threats (T)</p> <ol style="list-style-type: none"> 1. Changes in regulations due to the COVID-19 pandemic 2. Spread of COVID 19 virus from family and patients | <p>Strategi ST</p> <ol style="list-style-type: none"> 1. Increase knowledge and understanding in isolation precautions. | <p>Strategi WT</p> <p>Provide incentives for officers with high compliance scores.</p> |

Analysis of EFAS (External Strategic Factors Summary) Matrix

The EFAS matrix analysis is to evaluate and explain the factors outside the environment of the Isolation Precautions Implementation Strategy, namely opportunities and threats. EFAS (External Strategic Factors Summary) is an external strategic factor consisting of opportunities (opportunities) and threats (threats) of a company.

Based on the results of the calculations in the table 7, can be seen that the external side showed that the opportunity weight value of each element was the opportunity of 2.00 while the threat of 1.25. Then it can be obtained the total weight score in the EFAS table was 0.75. This shows that the Isolation Precautions Implementation Strategy had a greater opportunity than the existing threats.

SWOT Matrix

After getting the IFAS matrix and EFAS matrix, we continued by entering the data in the EFAS matrix and IFAS matrix into the SWOT matrix analysis (table 8).

Total Score Analysis

The way to determine the choice of strategy was to make a calculation by adding up the strength value minus the weakness value, as follows: $1.96 - 0.84 = 1.12$ and adding up the opportunity value minus the threat value as follows: $2.00 - 1.25 = 0.75$. This shows that the most strategic choice was to optimize opportunities, which are in quadrant I

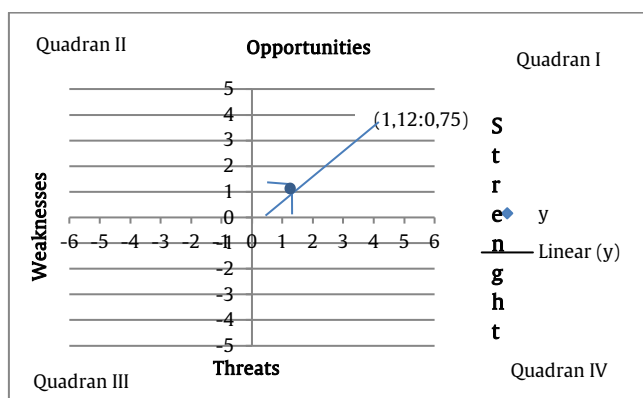


Figure 4. Main Strategy Choice Matrix

Based on the results of the table of weight scores in the SWOT matrix, it can be seen that the SO strategy had the highest score of 5.30 compared to other strategies, then the Hemodialysis Service at the HD Clinic of Nitipuran can use the SO strategy for the Isolation Precaution Implementation Strategy. Based on the results of the SWOT analysis, it can be identified the development strategies obtained from the SWOT analysis according to the order of priority as follows

- Make policies that can break the chain of infection transmission and make efforts to prevent post-exposure infections.
- Improving the usability of facilities and infrastructure both internally and externally.
- Review frequently internal policies and guidelines and socialize these to all staff.
- Increase immunity and inactivate infectious agents.

- Fulfillment of human resources according to competence, fulfillment of facilities and infrastructure as well as periodic maintenance.
- Increase knowledge and understanding in isolation precautions.
- Provide incentives for officers with high compliance scores.

DISCUSSION

Isolation Precautions Implementation Behavior (Standards and Transmission) in the Hemodialysis Services at HD Clinic of Nitipuran during the COVID-19 Pandemic.

The behavior of implementing isolation precautions (standards and transmission) in the hemodialysis services at the HD clinic of Nitipuran during the COVID-19 pandemic according to the results of trend analysis was by wearing masks during action, sterilizing rooms (fogging) on a scheduled basis, managing properly waste management between infectious waste, non-infectious and sharp objects and providing socialization about universal precautions

The results showed that the action that 100% carried out by the nurses in the isolation precautions compliance behavior was washing hands before aseptic procedures. Several studies have shown that the main chain of transmission of healthcare-associated infections (HAIs) is from the hands of health care workers. Hand washing or hand hygiene is the main thing that must be done to prevent and control infection. However, several sources state that the hand hygiene adherence of health workers was still very low, only around 40% ((Karkar et al., 2014; Shimokura et al., 2016).

Factors related to the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic

Predisposing Factor

- The correlation between age and the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Niriputan during the COVID-19 pandemic

The results showed that there was no correlation between age and the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic. The results of this study were in line with research (Hidaya, 2018) which shows that there was no correlation between age (p value > 0.05) 0.503 with the practice of nurses in infection prevention measures or PPI. Based on research (Herawati et al., 2021). it was found that there was no significant correlation between age and efforts to prevent and control COVID-19 (P value 0.811).

- The correlation between gender and the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemi

The results showed that there was no correlation between gender and the behavior of implementing isolation precautions in the hemodialysis services at the

HD Clinic of Nitipuran during the COVID-19 pandemic. The results of this study were in line with research (Ardina et al., 2021) which showed that gender had no correlation (Pvalue 0.814 (> 0.05) with infection prevention efforts or PPI. Female nurses tend to be more obedient and comply with existing standards and tend to be more diligent in taking care of themselves so that practice in preventing nosocomial infections is better. In the opinion (Wardhana & Roby, 2013) based on gender in general, women are more obedient than men, because women are more obedient and care to improve services to patients.

- 3) The correlation between education and the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic

The results showed that there was a correlation between education and the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic. The results of this study were in line with research (Hidayah, 2018) which showed that there was a correlation between the level of education (p value = 0.0001 $p < 5\%$) and the practice of nurses in PPI measures at Kendal Islamic Hospital. Based on research (Ardina et al., 2021) the results of the analysis of research data showed that education was related to the behavior of nurses in the application of universal precautions.

- 4) The correlation between length of work and the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic

The results showed that there was a correlation between years of service and the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic. The results of this study were not in line with research (Hidaya, 2018) that there was a correlation between length of work (p value = 0.046) and the practice of nurses in PPI action.

- 5) The correlation between knowledge and the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic

The results showed that there was a correlation between knowledge and the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic. The results of this study were in line with research (Suharto & Suminar, 2016) which showed that there was a correlation between nurses' knowledge of Personal Protective Equipment (PPE) and PPI measures, this could be seen from the value of $p = 0.024 < 0.05$. Due to the higher the level of knowledge a person will know about the actions that must be taken in this case actions to prevent infection both for the nurse itself and for the patient.

- 6) The correlation between training and the behavior of implementing isolation precautions in the hemodialysis

services at the HD Clinic of Nitipuran during the COVID-19 pandemic

The results showed that there was a correlation between training and the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic. The results of this study were in line with research (Hidaya, 2018) which showed that training (p value = 0.001) was related to the practice of nurses in infection prevention measures or PPI at Kendal Islamic Hospital.

- 7) The correlation between attitudes and beliefs with the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic

The results showed that there was a correlation between attitudes and beliefs with the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic. The results of this study were in line with research (Suharto & Suminar, 2016), which had results of the bivariate test using the Chi-square statistical test at a significance level of 95% with infection prevention measures in the ICU TK II Putri Hijau Hospital. A good attitude supported by good knowledge will be a motivation for nurses in the ICU to take infection prevention measures.

- 8) The correlation between cultural values and the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic

The results showed that there was a correlation between cultural values and the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic. The results of the research study (Ibrahim, 2019) showed that there was an influence between organizational culture on IPLCN performance in infection prevention and control ($r = -0.244$, $p = 0.020$). The organizational culture that appears in the hospital was good and reflected a comfortable working atmosphere. Research conducted by Mulyaningsih in (Hasanah, 2020) regarding infection prevention and control programs in inpatient rooms, the results of the study stated that organizational culture affects the implementation of infection prevention and control programs in hospitals.

- 9) The correlation between perception and motivation with the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic

The results showed that there was a correlation between perception and motivation with the behavior of implementing isolation precautions in the hemodialysis services at the Nitipuran HD clinic during the COVID-19 pandemic. The results of this study were in line with research (Abdullah et al., 2014) which shows that motivation ($p = 0.000$) and supervision ($p = 0.000$) were related to the performance of implementing nurses in infection prevention or PPI in the Inpatient Installation of Haji Makassar Regional Hospital.

Enabling Factors

- 1) The correlation between supervision and the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic

The results showed that there was a correlation between supervision and the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic. One of the reasons for the low hand washing compliance of health workers is due to the large amount of time required to wash hands. However, compliance to hand washing can be developed by continuing education, supervision and provision of hand washing facilities that are easily accessible, the number of sinks 1 in 4-6 HD machines, soap, sufficient hand towels/paper towels and the provision of alcohol-based hand rubs placed in every place of patient's bed pasien (Barnes & APIC, 2010; Siegel et al., 2007).

- 2) The correlation between management support and the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic

The results showed that there was a correlation between management support and the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic. Management efforts to support isolation vigilance could be in the form of rewards and sanctions. The existence of support from health facilities and support from the environment will make the stimulus have an effect that plays an effective role in forming an action to be achieved. The present study (Hu et al., 2021) described a practical workflow for patient-centered management during the COVID-19 outbreak. Potential risk factors and underlying clinical patterns remain to be reported. Further studies regarding the effectiveness of infection control precautions and practice protocols should be adapted and ensured for dialysis regimens.

Reinforcing Factor (Correlation of environmental facilities with the behavior of implementing isolation precautions in the hemodialysis services at the HD clinic of Nitipuran during the COVID-19 pandemic)

The results showed that there was a correlation between environmental facilities and the behavior of implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic. Hospital is a health effort facility that organizes health service efforts which include outpatient services, inpatient care, emergency services, medical services, and non-medical services which in carrying out the process of these activities will have positive and negative impacts. Therefore, it is necessary to make efforts to rehabilitate the hospital environment which aims to protect the community and hospital staff from the dangers of environmental pollution originating from hospital waste.

Strategies for implementing isolation precautions in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic

Based on the results of the SWOT analysis, it was known that the SO strategy had the highest score of 5.30 compared to other strategies; then the Hemodialysis Service at the Nitipuran HD Clinic can use the SO strategy for the Isolation Precautions Implementation Strategy. Based on the results of the SWOT analysis on internal factors (Strengths and Weaknesses) and external factors (Opportunities and Threats), it can be identified the development strategy obtained from the SWOT analysis in order of priority as follows:

- a. Making policies that can break the chain of infection transmission and make efforts to prevent post-exposure infections

According to (Nisa, K., 2020), nurses are one of the medical personnel who have an important role in treating COVID-19 patients and those who are the parties most likely to be infected with COVID-19. The high number of spreads that are increasing day by day makes the public, medical and government feel agitated. The most fatal effect that can be caused by this virus is death. Patients who have a history of chronic diseases such as heart disease are highly susceptible to infection; the elderly also enter into a worrying category

In an effort to prevent and control infection in health care facilities, it is very important that officers and policy makers should understand the basic concepts of infectious diseases. Improvements in service quality should be in line with improving patient safety and minimizing incidents. There are several ways to break the chain of infection by:

- 1) Precautions

Universal precaution is the action of health workers so that in carrying out their work they do not cause cross-infection, namely infection from doctors/health workers to patients and vice versa or from one patient to another. Universal precautions should be in force to blood, secretions and excretions (except sweat), wounds to the skin and mucous membranes. The application of this standard is important to reduce the risk of transmission of microorganisms originating from known or unknown sources of infection (eg patients, contaminated objects, used needles and syringes) in the health care system. Good prevention is the first step to prevent the chain of infection for hospitalized patients.

- 2) Medication Safety

Medication safety practice (MSP) is the safely procedures practice in treatment. With MSP, the treatment system runs according to procedures, clear goals, and studies events/incidents that occur in the treatment service environment. Several things related to safe procedures in administering medication safety are standard procedures from several stages that must be carried out, namely reviewing clinical information and regimen selection, treatment plans and informed consent, drug preparation, medication regularity, administration and monitoring, and monitoring response and drug side effects. The existence of standard procedures for safe drug

administration is expected to improve patient safety and break the chain of infection.

Therefore, it is important for nurses to carry out proper medication safety and plan so that patients or families can be independent in administering their drugs, where the aim is none other than an effort to prevent or break the chain of infection (Tampubolon, K., N., 2020). According to (Yang et al., 2021), the pandemic has also resulted in the application of health protocols such as isolation at home, social distancing, intense health monitoring, and so on, thus affecting the daily lives of dialysis patients (Indra et al., 2021).

- b. Improving the efficiency of facilities and infrastructure both internally and externally as well as the fulfillment of human resources according to competence.

The quality of health services is a step towards improving health services both for individuals and for the population in accordance with the expected outputs and in accordance with the latest professional knowledge. The quality of health services is something expected and has become a basic need for everyone. Health facilities such as hospitals and health centers as well as clinics or medical centers which consist of various services such as examinations, treatments, pharmacy, laboratories, including medical record services are public service organizations that serve the community directly, therefore hospitals and health centers must provide quality services in accordance with patient expectations. Medical records have a vital role in health facilities, with data and information on medical records and the quality of health services can be measured.

The most important goal in health care is to produce beneficial outcomes for patients, providers and society. Achieving the desired outcome is highly dependent on the quality of health services. In hospitals and other health care facilities there are three main sources of data, namely: administrative files, patient data collection results and patient medical records. BY health information management, the three main data sources can be integrated into an accessible system to be evaluated and analyzed for the purposes of planning and improving the quality of health information and health services in general (Imam & Lena, 2017).

- c. Always reviewing internal policies and guidelines and disseminating it to all staff in order to increase immunity and make infectious agents inactive

In accordance with clinical accreditation guidelines and SNARS edition 1, internal policies and guidelines must be able to meet all service needs. This policy must always be evaluated in order to adjust the existing situation and any changes due to the existing evaluation; it must be immediately disseminated to all related elements (SNARS, 2020)

Research (Dewi et al., 2020) showed a significant correlation between the global health security category and the pandemic score ($P < 0.01$). There were 37 countries out of 177 (20.9%) which were categorized as the lowest reaction and least reaction. The COVID-19 Pandemic score, assessed by doubling time, was directly significant to the health insurance category. The government must increase its responsiveness and

preparation to increase national capacity during the COVID-19 pandemic.

- d. Enhance immunity and inactivate infectious agents

Immune system enhancement should be conducted actively by giving immunizations. An example of increasing immunity is by passively immunizing, namely the administration of immunoglobulin. Health promotion keeps to be provided for health workers and patients by consuming foods that can increase endurance. Efforts can be made by consuming immune-boosting foodstuffs, getting enough rest, avoiding dehydration, diligently washing hands and avoiding stress (Amalia & Hiola, 2020). Last resort using antibiotics.

- e. Increase knowledge and understanding in isolation precautions

Behavior supported by knowledge will be more lasting than behavior without knowledge-based. Knowledge or cognitive is an important domain in shaping one's actions. Cognitive abilities will shape a person's way of thinking, including the ability to understand factors related to disease and use this knowledge to overcome health problems experienced (Notoadmodjo, 2014).

Ministry of Health (2020) that prevention strategies in health care facilities can be achieved by implementing the principles of prevention and control of COVID-19 which includes: firstly, standard precautions. Standard precautions consist of hand hygiene, personal protective equipment (PPE), respiratory hygiene (cough etiquette, use a mask, perform hand hygiene after contact with respiratory secretions), and environmental hygiene (routine environmental disinfection, linen handling, waste management and disinfection of patient care equipment). Secondly is Transmission Precautions. Transmission precautions can be divided into three, namely droplet, contact and airborne. The application of precautions based on transmission includes: triage by screening at the entrance to the patient reception room, separating patients with respiratory disorders, giving special signs to set a minimum distance of one meter at the location of patient or waiting queues, creating a physical barrier (barrier) between officers and visitors. Arrange consultation tables, beds and chairs for patients with health workers. Placing suspected or confirmed positive cases in isolation rooms and health workers who provide care for patients should be determined to reduce transmission (Melati et al., 2021).

- f. Provide incentives for officers who have high compliance scores.

Various studies have shown that providing incentives can improve the performance of nurses (Jamiri, 2011). So it can be recommended that the existence of incentives motivate employees to increase compliance with isolation precautions. However, this cannot be separated from the support from the government in policy efforts related to financial problems, both for operational activities and providing incentives for health workers who deal directly with patients.

Due to the COVID-19 pandemic, the government needs to implement policies to combat the COVID-19 pandemic. Based on research (Purnomo et al., 2022), the

six ASEAN countries are disproportionate in their policies towards the COVID-19 pandemic. Indonesia is one of the countries that are less prepared and have a fast transmission of COVID-19. The research also shows that ASEAN countries need assistance in increasing their capacity and increasing financial support. Implementing interventions to improve the health security of the most vulnerable countries is a global priority. Governments may overreact to vague signals. Practical workflows for patient-centred management are required during the COVID-19 outbreak. The factors underlying the potential risk and clinical patterns are frequently reported (Hu et al, 2020).

LIMITATION OF STUDY

This research is a mix method research that requires more extensive data, so it requires more time and resources. In addition, researchers used swot analysis, in which the informants tended to be less understanding in giving scores, so they had to be explained many times. Another limitation is that data collection was carried out while the respondents were still in office hours, so they did not focus on filling out questionnaires because they were busy at work.

CONCLUSION

1. The behavior of implementing isolation precautions (standard and transmission) in the hemodialysis services at the HD Clinic of Nitipuran during the COVID-19 pandemic with a compliance value that reached 100% were the officers wore masks during the action, washed hands before aseptic action, managed deliberately infectious and dirty linen, disinfected machines after the procedure, did proper management of waste management between infectious waste, got additional vitamins, vaccinations for nurses against infectious diseases such as hepatitis, TB, non-infectious and sharp objects, differentiated patients by type Diseases (infectious and non-infectious), performed coughing and spitting etiquette correctly, used N95 masks when handling patients at risk of droplet transmission, and placed patients at risk of airborne transmission in isolation rooms.
2. Factors (predisposing factor, enabling factor, and reinforcing factor) related to the behavior of implementing isolation precautions in the hemodialysis services at the HD clinic of Nitipuran during the COVID-19 pandemic, namely education, knowledge, training, attitude, cultural value, motivational, supervision, management support and environmental facilities, while factor of age, gender and length of work were not related to isolation precautions behavior in HD Clinic of Nitipuran.
3. The strategy of implementing isolation precautions for hemodialysis services at the HD Clinic of Nitipuran. The findings of the SWOT analysis revealed that the SO strategy was in the first quadrant between strengths and opportunities which had the highest score compared to other strategies. This means that the SO Strategy can be used to increase compliance with the application of isolation precautions for nurses and doctors at the HD Clinic Nitipuran. The development strategy obtained from the SWOT analysis according to

the order of priority that can be done is to make policies that can break the chain of infection transmission and make efforts to prevent post-exposure infections, increase the efficiency of facilities and infrastructure both from internal and external, always reviewing internal policies and guidelines and disseminating it to all staff, increase immunity and make infectious agents inactive, fulfill human resources according to competence, fulfill facilities and infrastructure and carry out periodic maintenance, increase knowledge and understanding in isolation precautions, as well as provide incentives for officers with high compliance scores.

RECOMMENDATION

1. For the HD Clinic of Nitipuran
Hemodialysis clinic should increase the application of PPIs, especially isolation precautions so that they can improve the quality and quality of hemodialysis services. Strategies that can be carried out in an effort to increase isolation vigilance are by making policies that can break the chain of infection transmission and make efforts to prevent post-exposure infections, increase the efficiency of facilities and infrastructure both from internal and external, always reviewing internal policies and guidelines and disseminating it to all staff, increase immunity and make infectious agents inactive, fulfill human resources according to competence, fulfill facilities and infrastructure and carry out periodic maintenance, increase knowledge and understanding in isolation precautions, as well as provide incentives for officers with high compliance scores.
2. For further researcher
This research should be continued and can provide input for further research, so that further research can make research with a different point of view, especially related to isolation precautions which have not been widely studied and consider related factors.

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