

Analysis of Dominant Factors Affecting the Implementation of Covid 19 Screening at Tgk Chik Hospital Di Tiro Sigli

¹Ismuntania, ²Kartika

¹Study Program of Nursing, STIKes Medika Nurul Islam, Pidie

²Study Program of Nursing, STIKes Medika Nurul Islam, Pidie

@ismuntania366@gmail.com

Abstract

Background: The implementation of the Covid 19 screening is very important to control the spread of the Corona Virus which is increasingly rampant. Screening is the first step that must be carried out on all suspected people including every hospital visitor. In principle, all visitors should be screened even if they are asymptomatic because some infected cases do not show any symptoms. The purpose of the study: to analyze the dominant factors that influence the implementation of Covid 19 screening at Tgk Chik Ditiro Sigli Hospital. The stages of this research are starting from the preparation, implementation, and analysis stages. The design used is a quantitative design with a causal association approach, which is to see a causal relationship. The method of data collection was done by distributing questionnaires and then analyzed using multiple linear regression statistical analysis. The next step is to present the data and draw conclusions. The results of this study were found that the factors of officers, patients, PPE, policies, and the environment affected the implementation of the Covid 19 screening with p-values of 0.001, 0.000, 0.002, 0.001, and 0.002, respectively. The most dominant factor influencing is the officer factor with the results of univariate analysis, namely $Y = 19,877 + 0,091X1 + 0,045X2 + 0,080X3 + 0,043X4 + 0,072X5$. This study concludes that the officer factor is the most dominant factor influencing the implementation of Covid 19 screening.

Keywords: Dominant factor, Screening, Covid 19

Background

The spread of the 2019 Coronavirus (Covid 19) has spread almost throughout the world very quickly and has claimed 1.12 million lives. The process of early detection or screening of viral agents is very important to prevent wider transmission¹. Screening is the first step that must be carried out on all suspected people including every hospital visitor without exception. In principle, all visitors should be screened even if they are asymptomatic because some infected cases do not show any symptoms². This action determines the next step, for example, the patient must be immediately referred to a special Covid-19 referral hospital, undergo a rapid test, or only be examined according to complaints³. Therefore, screening procedures that are carried out properly will prevent the transmission of Covid 19 so that everyone in the hospital avoids the risk of transmission while reducing the burden of hospital management both mentally and financially.

The implementation of screening is so important in reality it has not been seen to be effective in hospitals. Many factors influence them, such as the accuracy of the implementation method, the availability of competent resources, the honesty of the patient in providing information, the availability of Personal Protective Equipment (PPE), clear policies, and others. patients and the hospital. The author found facts at Tgk Chik Ditiro Hospital that there were patients who were declared reactive after entering the regular ward and had contact with officers who previously handled them without adequate PPE. This condition puts the officers at risk of being infected and so far 22 officers at the Tgk Chik Ditiro Hospital have been declared reactive. In addition, competent resources are still limited. On the other hand, patients who are screened are also very secretive which may be afraid of negative stigma if they are infected with Covid 19. Patients seem hesitant to provide information so that officers find it difficult to decide on the results of the screening. The limitations of PPE also often make officers limit the implementation of screening and also influence management

policies. In essence, screening should run optimally so that efforts to break the chain of virus transmission are not in vain. The findings above show that the implementation of screening still has many weaknesses that need to be analyzed so that in the future strategic improvements can be made for the effective control of Covid 19 transmission.

Based on the above phenomenon, the author is interested in conducting research on the analysis of the dominant factors that affect the implementation of Covid 19 screening at Tgk Chik Ditiro Sigli Hospital. Through the results of this study, it is hoped that the Covid 19 screening will be carried out optimally to stop the transmission of Covid 19.

The purpose of this study is to analyze the dominant factors that affect the implementation of the Covid 19 screening. This study has a fairly high level of urgency which immediately finds the most dominant factors affecting the implementation of the Covid 19 screening, so strategic steps can also be taken to overcome the problems caused by these factors. and the transmission of Covid 19 can be controlled immediately

Methods

Types of research

The type of research used is quantitative research with a causal approach aimed at identifying cause-and-effect relationships between the variables that influence the variables that are affected¹³. In this study, the variables, namely the factors that affect the implementation of the Covid 19 screening, will be identified and measured to what extent they have an influence on the screening process and finally decide which factors have the most dominant influence.

Research Locations and Subjects

This research will be conducted at the Tgk Chik Ditiro Sigli General Hospital. The subjects of this study were the Covid 19 screening officer and the Covid cluster team at the RSUD. Tgk Chik Ditiro Sigli.

Research Instruments

The instrument used in the form of a questionnaire about the factors that affect the implementation of the Covid 19 screening as many as 50 statement items.

Data Collection Techniques

Data collection technique is by distributing questionnaires. The questionnaire that will be distributed consists of a written statement containing the need for research to analyze the factors that influence the implementation of the Covid 19 screening. The questionnaire was designed by the author based on a literature review considering that the standard questionnaire for this variable has not been found because the disease is a new case. Because the questionnaire was designed by itself, the questionnaire will be tested for instruments namely validity and reliability tests.

Data Analysis Techniques

Data analysis techniques that will be carried out in this research consist of:

1. Univariate analysis, namely the results of the study will be described in the frequency distribution table.
2. Bivariate analysis, namely analyzing the relationship between the independent variable and the dependent variable using Spearman rank analysis.
3. Multivariate analysis is a follow-up to bivariate analysis. If bivariate analysis is only to see the relationship between variables, then multivariate analysis plays a role in analyzing the extent to which the strength of the independent variable affects the dependent variable so that it can be determined which factor has the most influence. The analysis that will be used is multiple linear regression analysis.

Results

Descriptive analysis results

To obtain data on the dominant factors that affect the implementation of the Covid 19 screening, the researchers gave a questionnaire to the research subjects in the form of 50 questions containing a description of the factors suspected of influencing the implementation of the Covid 19 screening. being screened, Personal Protective Equipment used by officers, policies that apply at the hospital, and environmental factors around the implementation of the screening. The results of the descriptive analysis of this study can be described in the following table:

Table 1. Description of the implementation of Covid 19 screening (n = 30)

| No | Screening | Amount | Percentage (%) |
|---------------|----------------|-----------|----------------|
| 1 | Succeed | 22 | 73,7 |
| 2 | Not successful | 8 | 36,3 |
| Jumlah | | 30 | 100 |

Based on table 1 above, it can be seen that the implementation of screening in the successful category was 22 people (73.7%) and the unsuccessful category was 8 people (36.3%).

Table 2. Description of factors influencing Covid 19 screening (n = 30)

| No | Officer factor | Amount | Percentage (%) |
|---------------|-------------------------|-----------|----------------|
| 1 | Skilled | 21 | 70 |
| 2 | Unskilled | 9 | 30 |
| Amount | | 30 | 100 |
| No | Patient factor | Amount | Percentage (%) |
| 1 | Honest | 11 | 36,7 |
| 2 | Dishonest | 19 | 63,3 |
| Amount | | 30 | 100 |
| No | APD factor | Amount | Percentage (%) |
| 1 | Available, complete | 14 | 46,7 |
| 2 | Available, incomplete | 10 | 33,3 |
| 3 | Not available | 6 | 20,0 |
| Amount | | 30 | 100 |
| No | Hospital policy factors | Amount | Percentage (%) |
| 1 | Available, run | 14 | 46,7 |
| 2 | Available, not running | 16 | 53,3 |
| 3 | Not available | 0 | 0,0 |
| Amount | | 30 | 100 |
| No | Environmental factor | Amount | Percentage (%) |
| 1 | Support | 17 | 56,7 |
| 2 | Does not support | 13 | 43,3 |
| Amount | | 30 | 100 |

Based on table 2 above, it can be seen that the description of the factors that affect the implementation of the Covid 19 screening include; factor of officers with skilled category as many as 21 people and 9 people unskilled. The patient factor in the honest/open category was 11 people and the dishonest/closed category was 19 people. The PPE factor used in the available category, complete as many as 14 people, available, incomplete as many as 10 people and not available as many as 6 people. The policy factor with the available category was carried out by 14 people, 16 people available and not available as many as 0 people. Environmental factors with the category of supporting as many as 17 people did not support as many as 13 people.

Bivariate analysis results

Table 3. The relationship between the officer factor and the implementation of Covid 19 screening (n = 30)

| No | Officer factor | Screening Covid 19 | | | | Amount | P-Value |
|--------------|----------------|--------------------|------|-------------|------|--------------|---------|
| | | Success | | Not success | | | |
| | | f | % | f | % | | |
| 1 | Skilled | 15 | 71,4 | 6 | 28,5 | 21 | 100,0 |
| 2 | Unskilled | 7 | 77,7 | 2 | 22,3 | 9 | 100,0 |
| Total | | | | | | 100,0 | |

Based on table 3 above, it can be seen that the majority of officers with the dominant skilled category successfully carried out screening with a total of 15 people (71.4%). The results of the statistical test obtained P value < which is 0.001 so that there is a significant relationship between the officer factor and the success of Covid 19 screening.

Table 4. The relationship between patient factors and the implementation of Covid 19 screening (n = 30)

| No | Patients factor | Pelaksanaan skrining | | | | Amount | P-Value |
|---------------|--------------------|----------------------|-------|-------------|------|-----------|----------|
| | | Success | | Not Success | | | |
| | | f | % | F | % | | |
| 1 | Honest/open | 11 | 100,0 | 0 | 0,0 | 11 | 100,0 |
| 2 | Dishonest/ Open | 11 | 57,9 | 8 | 42,1 | 19 | 100,0 |
| Amount | | | | | | 22 | 8 |

Based on table 4 above, it can be seen that the majority of officers who failed to carry out screening were dominant because the patients were in the dishonest/closed category with a total of 8 people (42.1%). Statistical test results obtained P value < which is 0.000 so that there is a significant relationship between patient factors and the success of Covid 19 screening.

Table 5. The relationship between PPE factors and the implementation of Covid 19 screening (n = 30)

| No | APD factor | Screening process | | | | Amount | P-Value |
|---------------|-----------------------|-------------------|------|-------------|------|-----------|----------|
| | | Success | | Not Success | | | |
| | | f | % | f | % | | |
| 1 | Available, complete | 10 | 71,4 | 4 | 28,6 | 14 | 100,0 |
| 2 | Available, incomplete | 8 | 80 | 2 | 20 | 10 | 100,0 |
| 3 | Not available | 4 | 66,7 | 2 | 33,3 | 6 | 100,0 |
| Amount | | | | | | 22 | 8 |

Based on table 5 above, it can be seen that the majority of officers who successfully carried out screening were dominant because PPE was available and complete with a total of 10 people (71.4%). The results of statistical tests obtained P value < which is 0.002 so that there is a significant relationship between the PPE factor and the success of Covid 19 screening.

Table 6. The relationship between policy factors and the implementation of Covid 19 screening (n = 30)

| No | Policy factor | Screening process | | | | Amount | P-Value | |
|---------------|------------------------|-------------------|------|-------------|------|--------------|---------|-------|
| | | Success | | Not Success | | | | |
| | | f | % | f | % | | | |
| 1 | Available, run | 12 | 85,7 | 2 | 14,3 | 14 | 100,0 | 0,001 |
| 2 | Available, not running | 10 | 62,5 | 6 | 37,5 | 16 | 100,0 | |
| 3 | Not available | 0 | 0,0 | 0 | 0,0 | 0 | 0,00 | |
| Amount | | 22 | | 8 | | 100,0 | | |

Based on table 6 above, it can be seen that the majority of officers who successfully carried out screening were dominant because of the availability of policies and carried out by officers with a total of 12 people (85.7%). The results of the statistical test obtained a P value < which is 0.001 so that there is a significant relationship between hospital policy factors and the success of Covid 19 screening.

Table 7. Relationship between environmental factors and the implementation of Covid 19 screening (n = 30)

| No | Environmental factor | Screening process | | | | Amount | P-Value | |
|---------------|----------------------|-------------------|------|-------------|------|--------------|---------|-------|
| | | Success | | Not Success | | | | |
| | | f | % | f | % | | | |
| 1 | Support | 15 | 88,2 | 2 | 11,8 | 17 | 100,0 | 0,002 |
| 2 | Does not support | 7 | 53,9 | 6 | 46,1 | 13 | 100,0 | |
| Amount | | 22 | | 8 | | 100,0 | | |

Based on table 7 above, it can be seen that the majority of officers who successfully carried out screening were dominant because of the supportive environment with a total of 15 people (88.2%). The results of statistical tests obtained P value < which is 0.002 so that there is a significant relationship between environmental factors and the success of Covid 19 screening.

Multivariate analysis results

Table 8. Results of multiple linear regression analysis

| Model | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|------------|-----------------------------|------------|---------------------------|--------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 19,877 | 0,870 | | 22,679 | 0,000 |
| Petugas | 0,091 | 0,019 | 0,465 | 6,227 | 0,000 |
| Pasien | 0,045 | 0,016 | 0,429 | 5,865 | 0,000 |
| APD | 0,080 | 0,002 | 0,401 | 6,205 | 0,000 |
| Kebijakan | 0,043 | 0,011 | 0,421 | 5,661 | 0,000 |
| Lingkungan | 0,072 | 0,001 | 0,409 | 5,215 | 0,000 |

To make it easier to read the results and interpret the regression analysis, an equation form containing the constants and regression coefficients is used which is obtained from the results of data processing that has been done previously. The regression equation that has been formulated is then processed data so that the final equation is obtained, namely:

$$Y = 19.877 + 0.091X1 + 0.045X2 + 0.080X3 + 0.043X4 + 0.072X5$$

Based on table 8 above, the value of the constant listed is 19,887 which means that if the independent variable in the model is assumed to be equal to zero, on average the variables outside the model will still increase the success of the Covid 19 screening implementation by 19,889 units. The value of the regression coefficient 1 of 0.091 can be interpreted that the officer (X1) has an effect on the implementation of the Covid 19 screening (Y). This shows that when the skills of officers are higher, the implementation of nurse screening will be more successful. The value of the regression coefficient 2 of 0.045 can be interpreted that the patient factor (X2) affects the implementation of screening (Y). This shows that when patient honesty increases, the implementation of Covid 19 screening will be more successful. The value of the regression coefficient 3 of 0.080 can be interpreted that the availability of PPE (X3) affects the implementation of Covid 19 screening (Y). This shows that when PPE is available, the implementation of COVID-19 screening will be more successful. The value of the regression coefficient 4 of 0.043 can be interpreted that the policy (X4) has an effect on the implementation of the Covid 19 screening (Y). This shows that when the policy is implemented it will increase the success of the Covid 19 screening implementation. Furthermore, the value of the regression coefficient 5 of 0.072 can be interpreted that a supportive environment (X5) affects the implementation of Covid 19 screening (Y). This shows that when the available environment is supportive, the implementation of nurse screening will be more successful. Based on the analysis above, it can be concluded that the most dominant factor influencing the implementation of the Covid 19 screening is the officer factor. This shows that officers are the most important factor influencing the success of screening. Even though all conditions are supportive such as open patients, complete PPE, policies are available, and a supportive environment, if the officers are unskilled and indifferent, the implementation of Covid 19 screening will not be achieved.

Discussion

Based on the results of the study, it was found that the most dominant factor and variable affecting the success of the implementation of the Covid 19 screening at Tgk Chik Hospital Di Tiro Sigli was the officer factor. This shows that officers are the most important factor influencing the success of screening. Even though all conditions are supportive such as open patients, complete PPE, policies are available, and a supportive environment, if the officers are unskilled and indifferent, the implementation of Covid 19 screening will not be achieved.

The existence of the screening implementing officer is the spearhead that is very essential in the successful implementation of the Covid 19 screening. Officers are active and dynamic figures who can have a more real and broad impact compared to other factors such as policy factors, environmental factors, Personal Protective Equipment factors and so on. . All factors that are excluded from the officer factor are basically also controlled by the officer himself. Therefore, the screening will be successful if the officer is able to control all the variables that influence it. Even though the physical environment and equipment in the screening process have been adequately provided in the hospital, but the officers do not carry out all the processes properly, the screening only becomes a procedural process that must be passed without considering the quality in doing so. Therefore, in this case, it is necessary to develop and increase knowledge of COVID-19 screening officers so that they have more qualified capabilities in the success of the screening process whose benefits are so essential both for hospitals and for their own patients.

Conclusion

The conclusion that can be drawn from this study is that all of the variables studied, starting from the factors of officers, patients, Personal Protective Equipment, Policies and the environment, were finally identified that the officer factors that seemed to make the most dominant contribution influenced the success of the Covid 19 screening process.

References

1. Liu, L., Hong, X., Chen, H., Zhang, D., Tang, S., Chen, L., Zhu, B., Li, X., &, Shi, Y. 2020. Optimizing screening strategies for coronavirus disease 2019: A study from Middle China. *Journal of Infection and Public Health*, 13(2020); 868–872.
2. Callahan, A., Stenberg, E., Fries, A. Z., Gombar, S., Patel, B., Corbin, K. C., & Shah, H, N. 2020. Estimating the efficacy of symptom-based screening for COVID-19. *Nature Partner Journals Digital Medicine*, 2020(95); 1-3.

3. Singhal, T. 2020. A Review of Coronavirus Disease-2019 (COVID-19). *The Indian Journal of Pediatrics*, 87(4); 281–286.
4. World Health Organization. 2020. *Maintaining essential health services: operational guidance for the COVID-19 context*. Diambil dari <https://www.who.int/publications/i/item/WHO-2019-nCoV-essential-health-services-2020.1>. Diakses pada tanggal 20 Oktober 2020 Pukul 11.00 WIB.
5. Lim, L. K., Johari, A. N., Wong, T. S., Khaw, T. L., Tan, K. B., Chan, K. K., Wong, F. S., Chan, E. L. W., Ramzi, H. N., Lim, C. K. P., Hakim, L. S., & Voon, K. 2020. A novel strategy for community screening of SARS-CoV-2 (COVID-19): Sample pooling method. *PLOS ONE*, doi.org/10.1371/journal.pone. August 28, 2020.
6. World Health Organization. 2020. *Coronavirus 2019*. Diambil dari <https://www.who.int/health-topics/coronavirustab=tab1>. Diakses pada tanggal 15 Oktober 2020 jam 11.00 WIB.
7. Harapan, H., Itoh, N., Yufika, A., Winardi, W., Keam, S., Te, H., Megawati, D., Hayati, Z., Wagner, L. A., & Mudatsir, M. 2020. Coronavirus disease 2019 (COVID-19): A literature review. *Journal of Infection and Public Health*, 13 (2020); 667–673.
8. Kemenkes RI. 2020. *Pedoman Pencegahan dan Pengendalian Coronavirus Disease (COVID-19)*. Diambil dari <https://www.kemkes.go.id/article/view/20031700001/Dokumen-Resmi-dan-Protokol-Penanganan-COVID-19.html>. Diakses pada tanggal 20 Oktober 2020 jam 20.00 WIB.
9. Song, Y. C., & Xu, J. 2020. COVID-19 early warning score: a multi-parameter screening tool to identify highly suspected patients. *Research Gate*. doi.org/10.1101/2020.03.05.20031906.
10. World Health Organization (WHO). 2020. *Rational use of personal protective equipment (PPE) for coronavirus disease (COVID-19)*. Diambil dari [https://www.who.int/publications/i/item/rational-use-of-personal-protective-equipment-for-coronavirus-disease-\(covid-19\)-and-considerations-during-severe-shortages](https://www.who.int/publications/i/item/rational-use-of-personal-protective-equipment-for-coronavirus-disease-(covid-19)-and-considerations-during-severe-shortages). Diakses pada tanggal 19 Oktober 2020 jam 12.00 WIB.
11. Huybens, M. E., Bus, A. P. M., Massaad, A. R., Wijers, L., Voet, D. V. A. J., Delfos, M. N., Veltz, D. P. M., Hemstra, A. K., Koch, P. M. S. 2020. What is the Preferred Screening Tool for COVID-19 in Asymptomatic Patients Undergoing a Surgical or Diagnostic Procedure? *World Journal of Surgery*, 44(2020); 3199–3206. doi.org/10.1007/s00268-020-057229.
12. Pulia, S. M., O'Brien, P. T., Hou, C. P., Schuman, A., & Sambursky, R. (2020). Multi-tiered screening and diagnosis strategy for COVID-19: a model for sustainable testing capacity in response to pandemic. *Annals of Medicine*, 52(5); 207–214 <https://doi.org/10.1080/07853890.2020.1763449>.
13. Grove, S. K., Burns, N., & Gray, J. R. (2014). *Understanding nursing research: Building an evidence-based practice*. Elsevier Health Sciences.