ANALYSIS OF IMPLEMENTATION OF ACUTE APPENDICITIS CLINICAL PATHWAY WITH ICPAT (INTEGRATED CLINICAL PATHWAY APPRAISAL TOOL) AT FAISAL ISLAMIC HOSPITAL MAKASSAR YEAR 2022

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ABSTRACT

Background: Clinical Pathways are crucial for implementing Good Clinical Governance in hospitals to reduce variations, ultimately decreasing the risk of medical errors. A Clinical Pathway must create a diagnosis with high volume, risk, cost, and problem-proneness standards. Appendicitis is an essential public health problem; the prevalence and incidence have increased globally. The clinical pathway implementation at our institution has yet to be evaluated.

Objective: This study aims to analyze the implementation of the Acute Appendicitis Clinical Pathway using ICPAT.

Methods: This study is a mixed methods study with a case study approach. Quantitative samples were collected from medical records of patients with acute appendicitis through proportional random sampling based on the inclusion and exclusion criteria. Qualitative participants were chosen according to appropriateness and adequacy principles. The validation method used was data triangulation.

Result: The outcomes demonstrated a 0% compliance rate in implementing the clinical pathway for acute appendicitis. ICPAT results (content and quality); D1 (90%, 100%), D2 (39.13%, 25%), D3 (30.77%, 35.29%), D4 (60%, 100%), D5 (50%, 30.77%), D6 (66.67%, 75%).

Conclusion: There was never a comprehensive review, especially using standard tools. This study helps Faisal Islamic Hospital conclude points to improve, especially the bad categories, namely the documentation, development, and maintenance dimensions.

Keywords: clinical pathway, acute appendicitis, hospital, implementation, hospital management.

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ANÁLISE DA IMPLEMENTAÇÃO DO CAMINHO CLÍNICO DA APENDICITE AGUDA COM ICPAT (FERRAMENTA DE AVALIAÇÃO INTEGRADA DO CAMINHO CLÍNICO) NO HOSPITAL FAISAL ISLÂMICO MAKASSAR ANO 2022

RESUMO

Antecedentes: Os Caminhos Clínicos são cruciais para a implementação da Boa Governança Clínica nos hospitais para reduzir as variações, em última análise, diminuindo o risco de erros médicos. Um Caminho Clínico deve criar um diagnóstico com alto volume, risco, custo e padrões de prontidão do problema. A apendicite é um problema essencial de saúde pública; a prevalência e a incidência têm aumentado globalmente. A implementação da via clínica em nossa instituição ainda precisa ser avaliada.

Objetivo: Este estudo tem como objetivo analisar a implementação do Caminho Clínico da Apendicite Aguda utilizando o ICPAT.

Métodos: Este estudo é um estudo de métodos mistos com uma abordagem de estudo de caso. Foram coletadas amostras quantitativas de prontuários de pacientes com apendicite aguda por meio de amostragem aleatória proporcional baseada nos critérios de inclusão e exclusão. Os participantes qualitativos foram escolhidos de acordo com os princípios de adequação e adequação. O método de validação utilizado foi a triangulação de dados.

Resultado: Os resultados demonstraram uma taxa de cumprimento de 0% na implementação da via clínica para apendicite aguda. Resultados ICPAT (conteúdo e qualidade); D1 (90%, 100%), D2 (39, 13%, 25%), D3 (30,77%, 35,29%), D4 (60%, 100%), D5 (50%, 30,77%), D6 (66,67%, 75%).

Conclusão: Nunca houve uma revisão abrangente, especialmente usando ferramentas padrão. Este estudo ajuda o Hospital Islâmico Faisal a concluir pontos para melhorar, especialmente as mãs categorias, nomeadamente a documentação, desenvolvimento e dimensões de manutenção.

Palavras-chave: caminho clínico, apendicite aguda, hospital, implementação, gestão Hospitalar.

ANÁLISIS DE LA IMPLEMENTACIÓN DE LA VÍA CLÍNICA DE LA APENDICITIS AGUDA CON ICPAT (HERRAMIENTA INTEGRADA DE EVALUACIÓN DE LA VÍA CLÍNICA) EN EL HOSPITAL FAISAL ISLÁMICO MAKASSAR AÑO 2022

RESUMEN

Antecedentes: Las Vías Clínicas son cruciales para implementar la Buena Gobernanza Clínica en los hospitales para reducir las variaciones, disminuyendo en última instancia el riesgo de errores médicos. Una vía clínica debe crear un diagnóstico con altos estándares de volumen, riesgo, costo y propensión a problemas. La apendicitis es un problema esencial de salud pública, su prevalencia e incidencia han aumentado a nivel mundial. La implementación de la vía clínica en nuestra institución aún no ha sido evaluada.
Objetivo: Analizar la implementación de la Vía Clínica de la Apendicitis Aguda utilizando el ICPAT.

Métodos: Este estudio es un estudio de métodos mixtos con un enfoque de estudio de caso. Se recolectaron muestras cuantitativas de las historias clínicas de los pacientes con apendicitis aguda mediante muestreo aleatorio proporcional basado en los criterios de inclusión y exclusión. Los participantes cualitativos se eligieron de acuerdo con los principios de adecuación y adecuación. El método de validación utilizado fue la triangulación de datos.

Resultado: Los resultados demostraron una tasa de cumplimiento del 0% en la implementación de la vía clínica para apendicitis aguda. resultados del ICPAT (contenido y calidad): D1 (90 %, 100 %), D2 (39,13 %, 25 %), D3 (30,77 %, 35,29 %), D4 (60 %, 100 %), D5 (50 %, 30,77 %), D6 (66,67 %, 75 %).

Conclusión: Nunca hubo una revisión exhaustiva, especialmente utilizando herramientas estándar. Este estudio ayuda al Hospital Islámico Faisal a concluir puntos a mejorar, en especial las malas categorías, a saber, las dimensiones de documentación, desarrollo y mantenimiento.

Palabras clave: vía clínica, apendicitis aguda, hospital, implementación, gestión hospitalaria.

1 INTRODUCTION

Good Clinical Governance is a mechanism for maintaining and enhancing good quality healthcare in the healthcare system. The commitment is to create sustainable healthcare focused on patients, consistently increasing healthcare quality and preventing medical errors. Clinical Pathway is one of the essential tools to embody good clinical governance in hospitals to decrease variations in medical care from the exact diagnosis and reduce risk and medical error so that clinical pathways can help with quality and cost control. (1,2) A clinical pathway must create a topic or diagnosis that meets various standards, including high volume, risk, cost, problem-proneness, and multidisciplinary. Appendicitis is a significant public health concern worldwide. From 1990 to 2019, the prevalence and incidence rates have increased globally. (3–5) In Indonesia, the prevalence in the 100,000 population is 3.4. The incidence rate was 92.5. (6)

Data from the Health Research and Development Agency's research in Indonesia in 2020 conducted at 20 hospitals showed that the completeness of filling out the clinical pathway form was still below standard. A study conducted by Anugrahsari et al. (2021) shows a track record of compliance with implementing clinical pathways at university hospitals in Indonesia. The study was conducted at 28 teaching hospitals in Indonesia. Hospital characteristics are divided into classes A, B, and C. The hospitals studied were distributed in 5 regions: Sumatra Island, Java Island, Bali, Kalimantan Island, and Sulawesi Island. The study stated that the achievement of the National Quality Indicators,
especially in the clinical pathway compliance indicators at Main Education Hospitals in Indonesia, had only reached 78.40%. (7,8)

To assess the development and implementation of clinical pathway compliance, it is necessary to conduct an analysis using audit instruments (audit tools). A Systematic Review by Vanhaecht et al. (2006) (9) in Clinical Pathway Audit Tools showed that of all these measurement tools, only ICPAT focuses on Pathway implementation, and only ICPAT has been tested for validity and reliability. (4,10)

This study aims to analyze the Acute Appendicitis Clinical Pathway compliance rate at Faisal Islamic Hospital using the ICPAT (Integrated Care Pathway Appraisal Tool), a standardized and validated instrument.

2 MATERIAL AND METHODS

This study is a qualitative study with a case study approach. This study was conducted in 2023 at Faisal Islamic Hospital in Makassar, South Sulawesi province. The subject of this study was divided into two groups: descriptive and qualitative. Descriptive samples were collected from all acute appendicitis medical records and selected by random proportional sampling to the inclusion criteria, precisely the clinical course of acute appendicitis used at Faisal Islamic Hospital, diagnosed between January 2022 and December 2022, with exclusion criteria for outpatient and emergency medical record. Descriptive data were displayed descriptively, documenting the clinical pathway of acute appendicitis in medical records and processing it using a computer program. Qualitative study informants/participants were chosen by appropriateness and adequacy principles, which means the informant/participant should know the implementation of clinical procedures and be able to provide comprehensive information about the implementation of clinical operations at our institution.

The Integrated Care Pathway Appraisal Tool (ICPAT) is one of the instruments that has been validated and can be used to evaluate the content and quality of the Clinical Pathway, which consists of 6 dimensions (the validity of the clinical pathway form, documentation, development, implementation, maintenance, and role of the organization). (11,12) According to ICPAT’s assessment, the assessment results are divided into three categories, which are >75% in the good category, 50-75% in the moderate category, and <50% in the poor category. (12,13)
The data was then processed using Microsoft Excel [Microsoft Corporation. (2018)]. Qualitative analysis was performed by combining, processing, and reducing data obtained, then presenting and interpreting data. Data triangulation was used as the validation method in this study, including interviews, observations, and document findings for more detailed information about implementing the clinical pathway at Faisal Islam Hospital in Makassar, South Sulawesi province.

3 RESULTS
3.1 COMPLIANCE RATE RESULTS

The compliance rate of filling out the Clinical Pathway form at our institution is still below the standard of 80%, according to the Regulation of the Minister of Health of Indonesia. (14) Based on sample calculations, it was found that the number of study samples was 6 (six) medical records of hospitalized patients diagnosed with acute appendicitis in 2022. From the entire document review sample, 0 out of 6 medical record samples with a Clinical Pathway are filled. The results showed that the achievement of Acute Appendicitis Clinical Pathway implementation was 0%.

Direct observation was conducted in 8 inpatient rooms; one patient diagnosed with Acute Appendicitis was obtained in room P7, but no Clinical Pathway form was filled out in the patient's medical record. This is in line with the results of interviews with several participants and the schematic interview result in Figure 1.

Participant I: "... Indeed, we did not obey because it was ignorance or it was never socialized."

Participant II: "... It's not so bad, but the compliance is still below 80%." 

Participant III: "... The checklist is the problem. 70-75% is the compliance."

Participant IV: "... Compliance is still below standard. Sometimes, it also depends on the resident who fills in the medical record."

Participant V: "... For me, it is 5%.

Participant VI: "... If it wants to be judged at least below 50% of the time."

Participant VII: "... We rarely do, never even. Let's say it about lower than ten percent."
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Figure 1. Schematic of interview results related to the compliance rate of filling out the clinical pathway form.

Source: Primary data, 2023

3.2 ICPAT ANALYSIS RESULTS

Figure 2. Acute Appendicitis ICPAT Evaluation Results.

Source: Primary data, 2023

Figure 2 shows the results of the ICPAT analysis for Dimensions 1-6. Based on ICPAT's assessment, the assessment results are divided into three categories, which are >75% in the good category, 50-75% in the average category, and <50% in the poor category.

Dimension 1 of ICPAT describes the validity of the Clinical Pathway form. 90% content and 100% quality items are obtained; both items in Dimension 1 were included.
in the good category. The acute Appendicitis Clinical Pathway form can be said to be the correct Clinical Pathway. The checklist that is not fulfilled is "Does Clinical Pathway cover continuity of service/therapy for 24 hours (if needed)?"

Dimension 2 of ICPAT describes Clinical Pathway documentation. The content items' results were 39.13%, quality items were 25%, and both items in ICPAT Dimension 2 were included in the poor category. Points that are not by the appendix or instructions for use are patient exclusion criteria, patient criteria included in other Clinical Pathway forms, how to record variations, warnings completing variations, variation recording systems (including dates, hours, descriptions, actions, paragraphs), and reminders of professional justification.

Dimension 3 of ICPAT describes the development of clinical pathways. The result of the content items was 30.77%, and quality items were 35.29%; both Dimension 3 items were included in the poor category. Some things that still do not meet the criteria are that no joint meeting was held for development, no record of what literature is used, the reason for using the literature, no latest update on the literature used, and there was no Clinical Pathway trial stage so there was no audit and feedback.

Dimension 4 of ICPAT describes the implementation of clinical pathways. 60% of content items and 100% of quality items were obtained; dimension four content items were included in the moderate category, while quality items were included in the good category. Points that are not in accordance include training programs for staff and feedback on variations. In line with participant statements… “There is no specific Clinical Pathway training. It is included in the accreditation socialization; Clinical Pathway is one of them, not specific Clinical Pathway training.”

Dimension 5 of ICPAT describes the maintenance clinical pathway. 50% of content items and 30.77% of quality items were obtained. The content items of Dimension 5 were classified as moderate, and the quality items were classified as poor. Where content elements differ, what training needs to be provided to staff, if there is a change in the content or format of the clinical pathway, and if new teams are involved in completing the clinical pathway. In quality items, our institution has not conducted regular reviews and revisions, nor at certain times (the existence of new clinical evidence, based on variations/exceptions that arise, based on goals/outcomes/objectives to be achieved, and based on staff input). Similar things were stated by participants: “.... Even though Clinical
Pathway should be updated every year, frankly, we are not there yet; we just collected it."

"... There are no reviews from patients."

Dimension 6 of ICPAT describes the role of clinical pathway organizations. 66.67% of content items and 75% of quality items were obtained, and both content and quality items in Dimension 6 were included in the moderate category. Not following the content items, Clinical Pathway must be listed in our hospital strategic plan. In quality items, our institution has yet to have a strategic team that reviews the entire development process of Clinical Pathway. The development process of the Clinical Pathway needs to follow the development stage process, and there needs to be comprehensive training about the Clinical Pathway. Participants said, "...We should have the team decree, but it's not here yet." "...There is no training, only socialization."

4 DISCUSSION

The compliance rate of filling out the Acute Appendicitis Clinical Pathway form at our institution is 0%, much lower than the standard 80% according to the Regulation of the Minister of Health of Indonesia. (14) Based on the assessment of clinical pathway implementation using ICPAT, the results were divided into three categories. First, Items in the Poor category are Dimension 2 content and quality items, Dimension 3 content and quality items, and Dimension 5 quality items. Second, items in the Moderate category are Dimension 4, the content items of Dimension 5, and the content and quality items of Dimension 6. Third, items in the good category are the content and quality items of Domain 1 and the quality items of Dimension 4.

Based on an assessment of ICPAT, dimension 1 obtained 90% content item and 100% quality item, so both items are included in the good category. The same result was also brought in the research by Alexander, which showed that the acquisition of ICPAT dimension 1 was good because it got a Content item value of 100% and a Quality item value of 100%. Evaluation along this dimension aims to verify whether the evaluated form constitutes a clinical pathway. Judging by the results, the state is considered the correct clinical pathway.(12,15,16)

Based on ICPAT's assessment, the ratio of Dimension 2 content items is 39.13%, and the quality factor is 25%. Both items in dimension two are included in the poor category. Research conducted by Alexander (2022) shows that the acquisition of ICPAT's Dimension 2 is a percentage of 35% content and 50% quality. Therefore, content items
were placed in the poor category, and quality items in the moderate category. Dimension 2 ICPAT assesses the Clinical Pathway documentation process. Based on these statements, the documentation process needs to be detailed in the evaluation form to affect communication between staff and result in a lack of evidence regarding the examination to be carried out. (15–17)

Based on ICPAT's assessment, the Dimension 3 content factor rate is 30.77%, and the quality factor is 35.29%. Both content and quality items are included in the poor category. Unlike the results of Alexander (2022), which show 85% content percentage and 70% quality, the content items are categorized as good, while the quality items fall under moderate. Dimension 3 assesses the Clinical Pathway development process. De Luc (2000) said that developing a Clinical Pathway is essential for implementing a Clinical Pathway because the Clinical Pathway is also a tool used to evaluate services or therapies that have been provided. This study shows a poor development process, including no development team, no trials being carried out before the Clinical Pathway was implemented, and no regular Clinical Pathway reviews have been carried out. In addition, patient involvement is one aspect that affects the results of dimension 3. (4,15,16)

Based on the ICPAT assessment, dimension 4 achieved a content items percentage of 60% and quality items of 100%. This result is consistent with the research conducted by Alexander (2022), which showed that the content items rate was 67% and the quality items rate was 100%. Based on these results, the content items are classified as moderate, and the quality items are classified as good. Dimension 4 evaluates the national program implementation process. It can be concluded that Dimension 4 of the ICPAT content items still needs improvement, especially in determining the allocation of resources to train staff in applying the clinical pathway. (15–18)

Based on the ICPAT assessment, the ratio of Dimension 5 content items is 50%, and the quality factor is 37.77%. The content items are classified as moderate, and the quality is poor. The results obtained by Alexander (2022) show 25% content items and 69% quality items. Content items are included in the poor category, and quality items are included in the moderate category. This dimension assesses the maintenance of the Clinical Pathway. From the study results, it is known that our institution had never conducted training for staff, either at the beginning of the formation of CP, in case of changes in content or format, or continuing education for new teams entering the clinical
pathway. Based on the ICPAT assessment, Dimension 6 shows the percentage of content items at 66.67% and quality items at 75.00%; both content and quality items are in the moderate category. The results obtained by Alexander (2022) show 100% content items and 58% quality items percentage. Content items comprise the poor category, and quality items include the moderate category. Dimension 6 has the function of evaluating the role of the organization. Based on this study, it is known that management still needs to focus on implementing clinical pathways. This is evidenced by several factors, including the absence of a clinical pathway in a strategic plan, no protocol from the development team, no testing before implementation of the clinical pathway, no regular review of clinical development, and a lack of comprehensive training for its development and use of the clinical course. (15,16,19)

The evaluation of the clinical pathway implementation carried out by our institution was limited to assessing compliance with filling out the clinical pathway form. There was never a comprehensive review, especially using standard tools such as ICPAT. This study shows the results of clinical pathway evaluation at our institution, starting from form validity, documentation, development, implementation, and maintenance to organizational roles. With this research, evaluation results were obtained that showed there were still some things that needed to be improved, Starting from hospital regulations. In the Hospital Strategic Plan, it is necessary to include the Clinical Pathway, such as the preparation, documentation, implementation, and maintenance of the Clinical Pathway.

Some points in the ICPAT Dimensions that need to be improved are still classified as bad categories, especially dimensions 2, 3, and 5, namely documentation, development processes, and maintenance. Some ways that can be done include: Improve the instructions for use in the Clinical Pathway document by explaining exclusion criteria, explaining how to record variations, Provide space to write the patient's name on each page, write a warning of the importance of completing variations, provide a place to record variations (date, time, description of variations, Actions), Create a reminder system that there must be professional justification when providing services/therapies requested or needed by patients, make instructions for using the Clinical Pathway, explain patient participation, and create mechanisms to record the implementation of variation explanations to patients, Involve patients in the process of documentation, review, development, Make a meeting on the development process and write down the minutes,
List the reasons why taking and not taking the literature used, Conduct Clinical Pathway trials before use (conduct variation audits, outcome audits, use audits, pay attention to legal aspects, identify areas of non-compliance, and conduct feedback), Share references, guidelines, and technical instructions for the Clinical Pathway with relevant staff, Conduct training on the Clinical Pathway for related staff (routine training when there is a change in the content/format, when there is a change in staff or the addition of new staff), and CP content and documentation have been routinely evaluated (routinely at least annually or when there is new clinical evidence) and revised regularly.

Study on Clinical Pathways is the first conducted at our institution; routine and thorough evaluations have never been performed. This study can give an overview of the Clinical Pathway Implementation and be used as evaluation material, especially since our institution is preparing for accreditation. This qualitative study combines descriptive and qualitative methods and uses the validity of triangulation data with interviews, documentation, and observation to make the results comprehensive and in-depth. However, the study received several opinions about needing more human resources, and the perceived workload needs to be balanced with the rewards received. Unfortunately, Faisal Islamic Hospital has never measured employee workload, so researchers recommend conducting research on workload measurement at Faisal Islamic Hospital.

5 CONCLUSION

The items included in the poor category are Dimension 2 content and quality items, Dimension 3 content and quality items, and Dimension 5 quality items. Items included in the Moderate category are Dimension 4 content items, Dimension 5 content items, Dimension 6 content, and quality items. The items included in the Good category are Dimension 1 content and quality and Dimension 4 quality items. Our institution must re-evaluate the Clinical Pathway's documentation, development, and maintenance. Some of the things that can be done include making improvements to attachments or instructions for use, explaining the process of variations, involving patients in their Clinical Pathway documentation, conducting meetings for the preparation of Clinical Pathways, including reasons for using particular literature, conducting trials before using Clinical Pathways, conducting training related to Clinical Pathways, and conducting regular reviews and revisions associated with Clinical Pathways.
ETHICS APPROVAL

Hasanuddin University's Faculty of Public Health's Health Research Ethics Commission (KEPK) has approved this study under protocol number 8623052105 and letter number 4098/UN4.14.1/TP.01.02/2023.
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